

APPENDIX N

Transportation Impact Analysis

TRANSPORTATION IMPACT ANALYSIS

NORTH RIVER FARMS

Oceanside, California

~~July 23~~ November 8, 2018

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EXECUTIVE SUMMARY

The North River Farms Development Project (“Project”) proposes to develop the approximately 176.63-acre site with 689 residential units and would also include commercial and restaurant uses, a local farm, and a hotel. The residential portion of the Project proposes a mix of housing types including single-family detached homes and multi-family attached homes. The Project area is located in the South Morro Hills neighborhood within the north-eastern portion of the City of Oceanside. The 176.63-acre site is centered on North River Road east of the intersection of North River Road and College Boulevard with its eastern boundary marked by the southerly alignment of Wilshire Boulevard.

Agricultural uses surround the site with residential uses more prominent in the west. The San Luis Rey River flows along the southern portion of the site.

The total Project is calculated to generate 7,921 ADT with 562 AM peak hour trips (166 inbound / 396 outbound) and 777 PM peak hour trips (515 inbound / 262 outbound) at the Project driveways.

The SANDAG Series 12 Year 2035 traffic model was utilized to obtain a Select Zone Assignment (SZA) for the purposes of estimating trip distribution and ultimately the study area. In total, the study area includes twenty-five (25) intersections (22 off-site, 3 on-site) and sixteen (16) street segments.

Near-term conditions include eight (8) cumulative development projects selected in coordination with City of Oceanside staff.

The Year 2035 network conditions were reviewed from the 2030 Master Transportation Roadway Plan outlined in the Oceanside Circulation Element. This Plan consists of planned future network changes and identifies the ultimate classifications for Master Transportation Roadway Plan roadways, most of which are also funded by the Oceanside Thoroughfare and Traffic Signal Fee Program Update Study, March 25, 2016. Specific intersection improvements identified in the Master Transportation Roadway Plan, were not assumed in the Year 2035 analysis. The major changes to the circulation network included in the 2030 Master Transportation Roadway Plan and those assumed in the Year 2035 analysis are the following:

- SR-76 is four lanes (six-lane widening not planned or funded per Caltrans)
- Rancho Del Oro Road at SR-78 is an interchange
- College Boulevard is six-lanes between Old Grove Road and Vista Way
- College Boulevard is six-lanes over the San Luis Rey Bridge
- North River Road is four lanes between Vandegrift Boulevard to the City limits
- Pala Road is connected between Los Arbolitos Boulevard and Foussat Road
- Melrose Drive is connected between North River Road and SR-76
- Melrose Drive is connected between Spur Avenue and N. Santa Fe Avenue

EXECUTIVE SUMMARY (*CONTINUED*)

*SR 76 was modeled as a six-lane expressway in the Circulation Element traffic model. However, funding is currently not available for this widening, nor are there any plans outlining a timeframe for completion. The SANDAG Series 12 model does not assume widening improvements to SR 76 are implemented by Year 2035. Therefore, the traffic volumes from the SANDAG Series 12 Year 2035 model were used in the long-term analysis.

In addition, a second Year 2035 analysis was conducted assuming *Alternative 2* of the City's General Plan EIR Traffic Study. Notably, the connection of Melrose Drive between North River Road and SR-76, and between Spur Avenue and N. Santa Fe Avenue was not assumed in this alternative nor was the widening of the College Boulevard bridge over the San Luis Rey river considered a six-lane facility.

Table ES-1, shows a summary of the significantly impacted location for each analysis scenario. Full details on the Project mitigation measures are provided in *Section 16.2* of this report.

TABLE ES-1
SUMMARY OF SIGNIFICANT IMPACTS

MM#	ID	Location	Existing + Project	Existing + Near-Term Cumulative + Project	Year 2035 With Project (Master Trans. Roadway Plan)	Year 2035 With Project (With Melrose Drive Extension)
INTERSECTIONS						
TRA-1.	#2	Vandegrift Blvd / North River Road	Cumulative	Cumulative	Cumulative	Direct
TRA-2.	#4	North River Road / Leon Street	—	—	Cumulative	Cumulative
TRA-3.	#9	Douglas Drive/ North River Road	—	—	Cumulative	Cumulative
TRA-4.	#11	North River Road/ College Boulevard	Direct	Direct	Cumulative	Cumulative
TRA-5.	#16	SR-76 / Rancho Del Oro Drive	Cumulative	Cumulative	Cumulative	Cumulative
TRA-6.	#17	SR-76 / Old Grove Road	—	—	Cumulative	Cumulative
TRA-7.	#18	SR-76 / Frazee Road	—	—	Cumulative	Cumulative
TRA-8.	#19	SR-76 / College Boulevard	Cumulative	Cumulative	Cumulative	Cumulative
STREET SEGMENTS						
TRA-9.	#5	North River Road: North River Circle to Stallion Drive	Direct	Cumulative	—	—
TRA-10.	#6	North River Road: Stallion Drive to Wilshire Road	Direct	Direct	—	—
TRA-11.	#7	North River Road: Wilshire Road to Sleeping Indian Road	Direct	Direct	—	—
TRA-12.	#9	Douglas Avenue: SR-76 to El Camino Real	Direct	Cumulative	—	—
TRA-13.	#10	Douglas Avenue: El Camino Real to North River Road	Cumulative	Cumulative	Cumulative	—
TRA-14.	#11	College Boulevard: North River Road to Adams Street	Cumulative	Cumulative	Cumulative	Cumulative
TRA-15.	#12	College Boulevard: Adams Street to SR-76	Cumulative	Cumulative	—	—
TRA-16.	#13	College Boulevard: SR-76 to Frazee Road	—	—	Cumulative	Cumulative

General Notes:

1. *Direct* impacts were calculated where Project-added traffic resulted in a degradation in Level of Service (LOS) from acceptable LOS D or better operations to below LOS D conditions. *Cumulative* impacts were calculated where Project-added traffic resulted in significant increase in intersection delay or street segment volume-to-capacity ratios over the allowable thresholds shown later on in Table 5-1 of this report at locations with pre-existing LOS deficiencies (LOS E or F). Additionally, impacts occurring in the long-term (Year 2035) condition are considered *cumulative* impacts regardless of pre-project conditions.

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TRANSPORTATION IMPACT ANALYSIS
NORTH RIVER FARMS
Oceanside, California
July 23, 2018

1.0 INTRODUCTION

The following transportation study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the development of the North River Farms Project (proposed “Project”) in the City of Oceanside. The purpose of this transportation study is to assess the potential impacts to the local circulation system as a result of the Project.

Included in this traffic study are the following:

- Project Description
- Existing Conditions Discussion
- Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Trip Generation, Distribution & Assignment
- Analysis of Existing + Project Scenarios
- Near-Term Cumulative Projects Conditions Discussion
- Analysis of Near-Term Scenarios
- Year 2035 Conditions Discussion
- Analysis of Year 2035 Scenarios
- Access Assessment and On-Site Circulation
- Year 2035 Without Melrose Drive Extension Assessment
- Signal Warrant Analysis
- Significance of Impacts & Mitigation Measures

Figure 1–1 shows the vicinity map. **Figure 1–2** shows a more detailed Project area map.

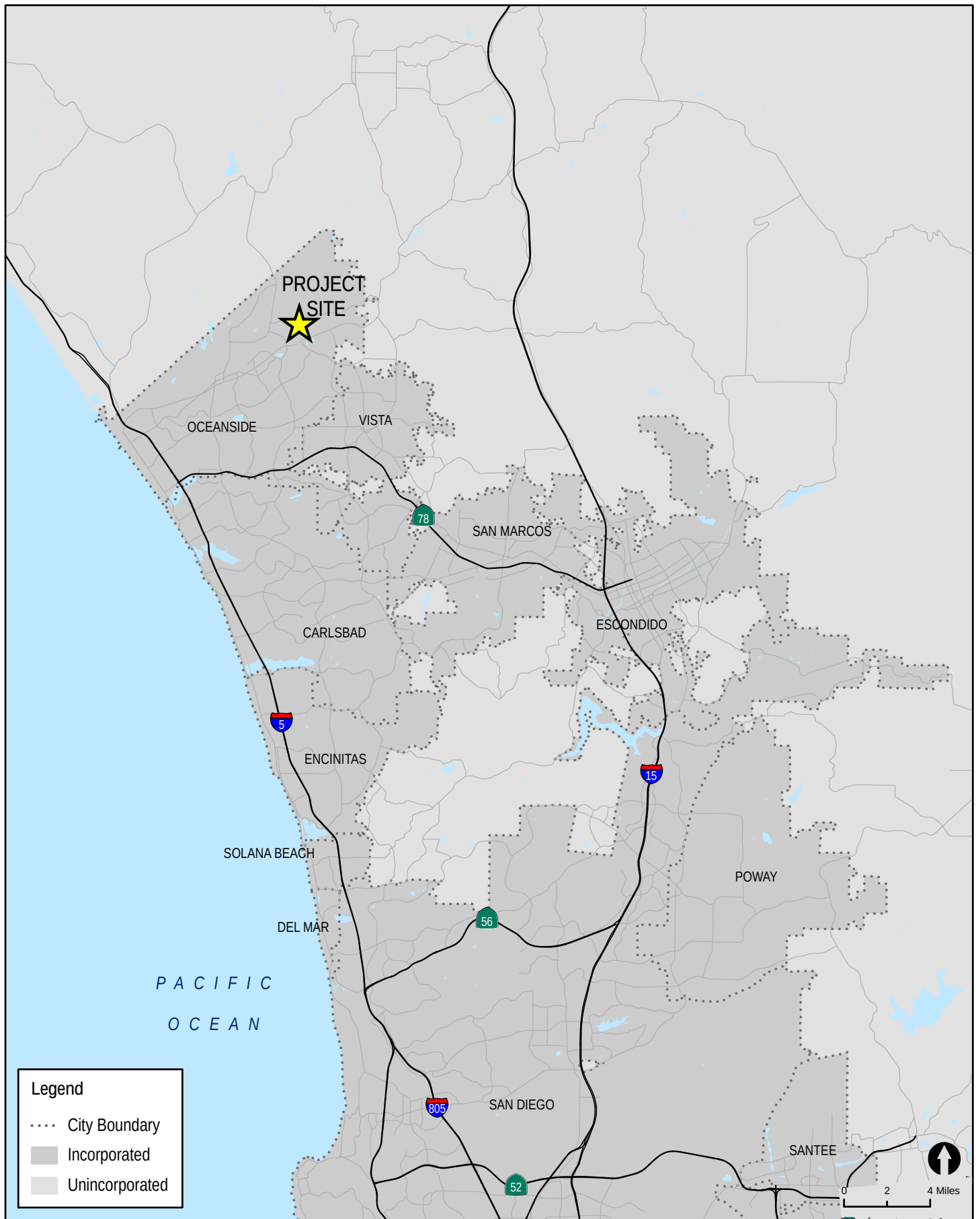
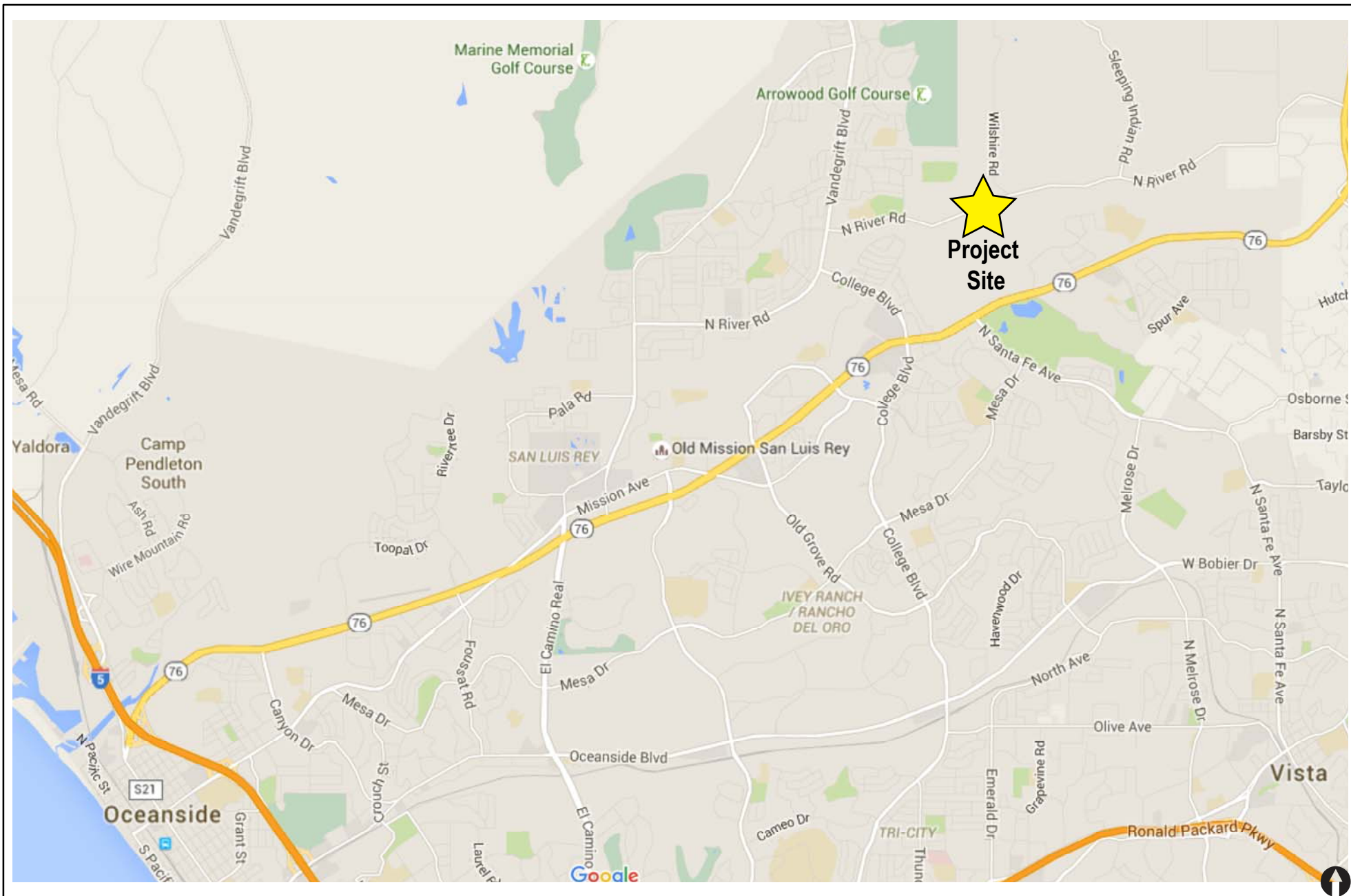


Figure 1-1

Vicinity Map

NORTH RIVER FARMS



2.0 PROJECT DESCRIPTION

2.1 Project Location

The Project area is located in the South Morro Hills neighborhood within the north-eastern portion of the City of Oceanside. The 176.63-acre site is centered on North River Road east of the intersection of North River Road and College Boulevard with its eastern boundary marked by the southerly alignment of Wilshire Boulevard.

Agricultural uses surround the site with residential uses more prominent in the west. The San Luis Rey River flows along the southern portion of the site.

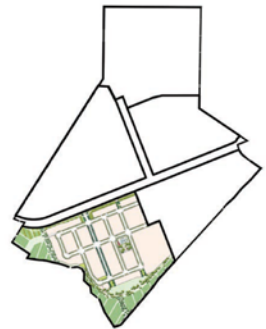
2.2 Project Description

The Project proposes to develop the approximately 176.63-acre site with a mix of land use types. The Project organizes housing around a system of farming, civic spaces, parks, open space and a pedestrian network connecting the entire community. The production-farming component of the Project combined with the educational and retail component will bring visitors into the area promoting agritourism. The Village Square is planned to host a weekly farmers market centered around an open-air market stall equipped with electricity and parking provided for easy and convenient set up. This central area of commerce and gathering will help support the production farm. A key feature of the Project is a flexible commercial Village Core. This provides an opportunity for education and community-based retail activities, public gatherings and a close knit walkable neighborhood. Additional commerce and creation takes place in the maker's spaces. A boutique hotel is also proposed. The residential component of the Project proposes 689 dwelling units (DU) with a mix of housing types.

The site is composed of four (4) Planning Areas: PA-1) Riverside Village; PA-2) Village Core; PA-3) North Village; and PA-4) Hilltop Village. A detailed description of the Planning Areas and the uses within each area was obtained from the applicant's Planned Development Plan, May 2018.

PA-1: Riverside Village

The Riverside Village is located in the southwest corner of the Plan area west of the Village Core. It is directly adjacent to a number of agricultural fields and has direct access to the San Luis Rey River corridor. This area will be a mix of 250 single-family detached homes. This area will be served by a recreational park to include community gardens and a pool.



The Riverside Village is comprised of residential units of various densities averaging to six (6) to 20 DU per acre with neighborhoods organized according to a gridded street system with short block lengths, pedestrian-friendly streets and large parkways to promote walkability. Direct access is from North River Road and pedestrian and vehicular systems connect to the Village Core. In close proximity to the Village Core and with limited topography, this area is planned to be very walkable and to service a multi-generational demographic.

PA-2: Village Core

The Village Core is the heart of the Project and therefore centrally located within North River Farms. The core is located off of North River Road at a proposed signalized access intersection. Surrounded by residential uses, there is an emphasis on pedestrian connectivity and opportunities to gather. The primary focal point of the core is the “Market Stall” the building constructed to house local makers and artisans. This area provides walkable connections to farmland, commercial, lodging and residential uses in the community.



The core area provides connections to trails, and the agriculture supported activities. The mixed-use components of the core could include commercial and educational uses, small format retail, outdoor commerce, education features, medium density residential, a boutique hotel, and flexible community facilities such as a community meeting hall.

The Village Square is intended to be the symbolic open space for the project and is an iconic gathering space for residents and visitors for community events.

Below are the descriptions of some of the uses planned for the Village Core:

Boutique Hotel

The concept for the Boutique Hotel is a unique destination with farm style cottages or other low-rise buildings and potentially a main facility to accommodate approximately 100 rooms. Integrated into the community, the hotel is envisioned to cater to a variety of guests who may be visiting local residents, taking advantage of the region’s beauty and open space as well as potential agritourism opportunities proposed by the Project. The hotel does not propose attached ancillary restaurant or meeting spaces. However, guests of the hotel will be able to conveniently walk to the Maker Spaces (including restaurant uses), the Farmers’ Market, and the Farm to benefit from all amenities offered by the proposed Project.

Maker Spaces

This flexible building will have high ceilings, convertible 200 to 300 square foot stalls with utility hook ups to allow for creativity in retail, artistry, vending, and making. These establishments act as communal workshops where makers can share ideas and tools. In addition to the flexible spaces, there could be an opportunity for additional farmers market vending, a commercial kitchen and collaborative work spaces.

Farmers’ Market

North River Farms will build a permanent Market Stall along the Village Square that would serve the Project site’s agricultural opportunities through a Farmer’s Market.

The Farm

The community or “production” farm fields border the Riverside Village and the Core. They will be carefully designed to be compatible with adjacent residential and commercial uses.

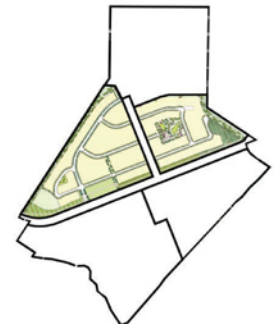
The Farm will be managed by a professional farming staff. Barn and office facilities are planned to house their front and back of house operations. The farm will produce Community Supported Agriculture shares of fruit, flowers and produce that will be for sale to the neighbors and the public as a means of offsetting the cost of managing the farming operations. Public access to the farm and its facilities will not be provided on a daily or even weekday basis and will be limited to things like farm to table dinner events or seasonal pick opportunities. Events such as these would be infrequent and typically held on weekends and during weekday timeframes outside the commuter AM and PM peak periods. The overall planning concept for the community core is one in which the neighborhood and the broader Oceanside community come to the core for its amenities such as the farmers market, hotel, maker space building, retail or restaurant. The associated trips for these visits are counted under the respective uses and the visitors get the benefit of the farm during their visit.

Residential

Village Core Residential could consist of a variety of single-family detached and multi-family attached housing at a density of greater than 20 DU per acre including zero lot line detached homes, alley load detached homes, detached cluster homes, mixed-use residential above commercial uses, or townhomes

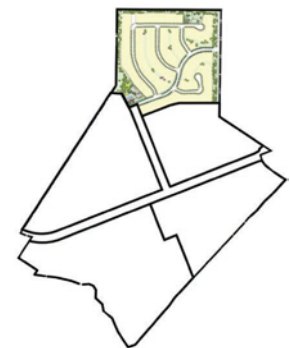
PA-3: North Village

The North Village is a central residential area located north of North River Road just across from the Village Core and bounded on the east by Wilshire Road. The proposed 209 single-family detached residences are proposed at a density of less than six (6) DU per acre. Pedestrian trails and access to the Village Promenade provide strong connections to the Village Core.



PA-4: Hilltop Village

The Hilltop Village is a large lot residential area located in the northern portion of the Project. The proposed 100 single-family detached residences are proposed at a density of less than six (6) DU per acre. This area borders an existing single-family detached development on its north, west and east sides.

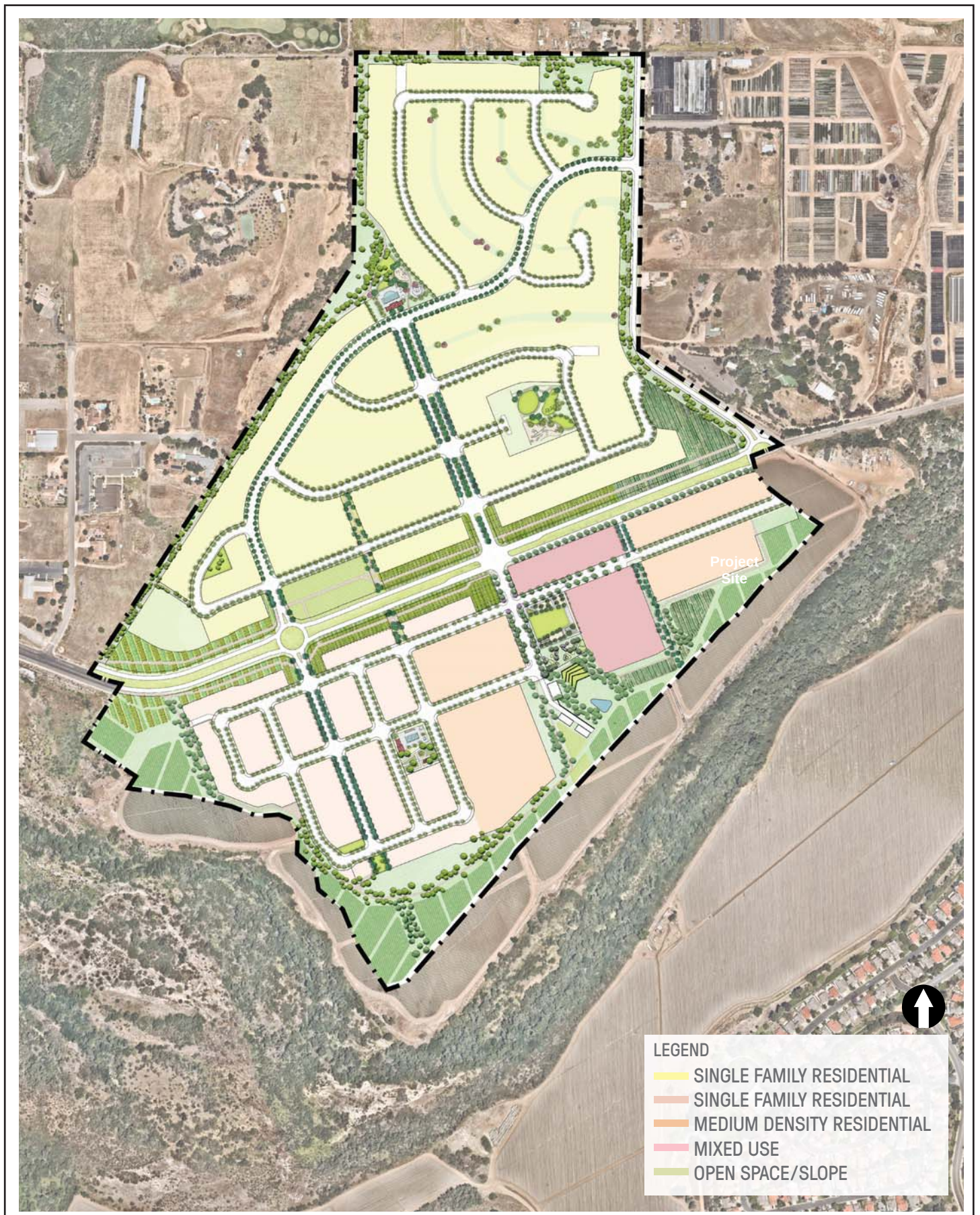


For purposes of this report, the land uses within the Planning Areas were broken down into the following categories for use in the traffic analysis:

- 309 single-family homes (density $\leq$ 6 dwelling units per acre)
- 250 single-family detached and multi-family attached homes (density $\leq$ 20 dwelling units per acre)

- 130 multi-family attached homes (density ≥ 20 dwelling units per acre)
- 25,000 SF of commercial use (incorporating the Maker Spaces, Farmer's Market, and other Village Core commercial-type uses)
- 5,000 SF of restaurant use (representing a portion of the Maker Spaces from the Village Core)
- 30 acres of farm
- 100-room boutique hotel

Access is proposed via North River Road. A more detailed discussion on Project access is included in *Section 13.0* of this report. **Figure 2-1** shows the conceptual site plan.



3.0 EXISTING CONDITIONS

3.1 Existing Street System

The following provides a brief description of the street system in the Project area. **Figure 3–1** illustrates existing conditions in terms of traffic lanes and intersection controls. Based on conversations with City staff, the City of Oceanside’s Adopted Master Transportation Roadway Plan was referenced for buildout roadway classifications.

Vandegrift Boulevard is classified on the City of Oceanside Circulation Element as a 5-Lane Major Arterial. It is a generally north-south roadway built with three northbound lanes and two southbound lanes in the Project study area from the Northern City Limits to North River Road. The posted speed limit is 50 mph. Class II bicycle lanes are provided on both sides of the roadway and on-street parking is prohibited.

North River Road is built to its City of Oceanside Circulation Element classification as a Four-Lane Major Arterial between Douglas Drive and College Boulevard and as a Five-Lane Major Arterial from College Boulevard to Vandegrift Boulevard. Between Douglas Drive and Vandegrift Boulevard, Class II bicycle lanes are provided on both sides of the roadway and on-street parking is prohibited. From Vandegrift Boulevard to North River Circle, North River Road is currently constructed as a four-lane divided roadway with a paved width of approximately 70 feet. From North River Circle to Stallion Drive it then narrows to a two-lane road with a TWLTL providing curbside parking and bike lanes on both sides of the street. This two-lane portion is paved to Four-Lane Secondary Collector standards with a TWLTL and a width of 64 feet. East of Stallion Drive to Sleeping Indian Road and beyond, the roadway narrows again to a two-lane road with no center turn lane or bike lanes, and a paved width of approximately 36 feet. Given there is little to no property fronting this 3.5-mile stretch of North River Road, no traffic signals until the intersection of Vista Way, and the speed limit is upwards of 50-55 mph, the roadway essentially functions as a free-flowing two-lane highway. The City of Oceanside does not have criteria matching these roadway characteristics. Therefore, for existing and near-term analysis, a modified daily segment capacity was assumed along this roadway to account for the reduced friction and increased speeds.

North River Road from Vandegrift Boulevard to the future Melrose Drive connection has a buildout classification of Four-Lane Major Arterial. From the proposed Melrose Drive connection to the Eastern City Limits, the buildout classification is a Four-Lane Secondary Collector with TWLTL.

The Project proposes a General Plan Amendment to reclassify North River Road from Stallion Drive to Sleeping Indian Road from a Major Arterial to a Secondary Collector. Additional details on this reclassification are provided later on in *Section 11.1.1* of this report.

Douglas Drive is classified as a 4-Lane Secondary Collector in the Project study area from Vandegrift Boulevard to North River Road. From North River Road to SR-76, it is classified as a 4-Lane Major Arterial. It is currently constructed to its ultimate classification from Vandegrift Boulevard to Via Malaguena and then narrows to a two-lane roadway divided by a striped median to Cardiff Bay Drive. South of Cardiff Bay Drive it widens to its ultimate classification as a 4-Lane Secondary Arterial and then widens again at North River Road to a 4-Lane Major Arterial. It

narrows to a four-lane undivided roadway over the San Luis Rey River Bridge and then resumes as a Major Arterial to SR-76 with the exception of the segment between El Camino Real and Mission Avenue where it provides a TWLTL. The posted speed limit is 40 mph. Class II bicycle lanes are provided on both sides of the roadway and on-street parking is prohibited.

College Boulevard is classified on the City of Oceanside Circulation Element 2030 Master Transportation Roadway Plan and currently built as a 6-Lane Major Arterial from North River Road to SR-76 with a posted speed limit between 40-45 mph with the exception of the portion of College Boulevard approaching the San Luis Rey River Bridge where it narrows to four lanes with a K-rail divider. South of SR-76 within the study area, College Boulevard is classified and currently built as a 4-Lane Major Arterial with a posted speed limit of 50 mph. Class II bicycle lanes are provided on both sides of the roadway. On-street parking is not permitted on any portion of College Boulevard within the study area.

El Camino Real is classified on the City of Oceanside Circulation Element 2030 Master Transportation Roadway Plan and currently built as a 4-Lane Major Arterial between Mission Avenue to Douglas Drive, within the study area. The posted speed limit is 40 mph. On-street parking is not permitted.

State Route 76 (SR-76) is classified on the City of Oceanside Circulation Element 2030 Master Transportation Roadway Plan as a Six-Lane Expressway from Interstate 5 to Melrose Drive and as a Four-Lane Expressway from Melrose Drive to the Eastern City Limits. It is generally an east-west facility and is currently built as a four-lane divided expressway in the Project study area. The posted speed limit is 55 mph. Class II bicycle lanes are provided on both sides of the roadway and on-street parking is prohibited.

3.2 Existing Bicycle Network

Based on information in the City of Oceanside Circulation Element and field observations, there are Class II bike lanes provided along the major street segments within the study area described above, with the following exceptions:

- The portion of North River Road between Stallion Drive and SR-76 provides a Class III bike route.
- The San Luis Rey River Trail is a separated Class I Bike Path, and is a generally east-west facility extending throughout a large portion of the study area.

3.3 Existing Transit Conditions

Transit service in the study area is provided by the North County Transit District (NCTD). The Project is located within one mile of the San Luis Rey Transit Center located south of North River Road between Vandegrift Boulevard and Waterview Way. The San Luis Rey Transit Center is served by Routes 303, 309, 311, 313, and 315. Based on information obtained from the NCTD, the following transit conditions are noted.

Route 303 travels from the Oceanside Transit Center to the Vista Transit Center and travels along Mission Avenue, Douglas Drive, North River Road and College Boulevard within the study area. This route provides 15-minute headways during weekday hours.

Route 309 travels from Oceanside (San Luis Rey Transit Center) to Encinitas primarily via El Camino Real. This route provides 30-minute headways during weekday hours.

Route 311 travels from the San Luis Rey Transit Center to the Rancho Del Oro SPRINTER station via Douglas Drive. This route provides limited, commuter-oriented service on weekdays only.

Route 313 travels from the Oceanside Transit Center to the San Luis Rey Transit Center primarily via Mesa Drive and travels mainly along College Boulevard within the study area. This route provides hourly service during weekdays.

Route 315 travels from the College Boulevard SPRINTER station to Camp Pendleton (22 Area) via College Boulevard and Vandegrift Boulevard. This route provides up to 30-minute headways in the peak direction, with hourly headway in the off-peak direction, during weekday hours.

3.4 Existing Traffic Volumes

Existing 7:00-9:00 AM and 4:00-6:00 PM peak hour traffic volumes at key area intersections and 24-hour street segment counts were manually collected in April and November 2016 while schools were in session. Counts on North River Road were conducted in October 2017. SR-76 volumes were taken from the most recently available Caltrans ADT data (2016).

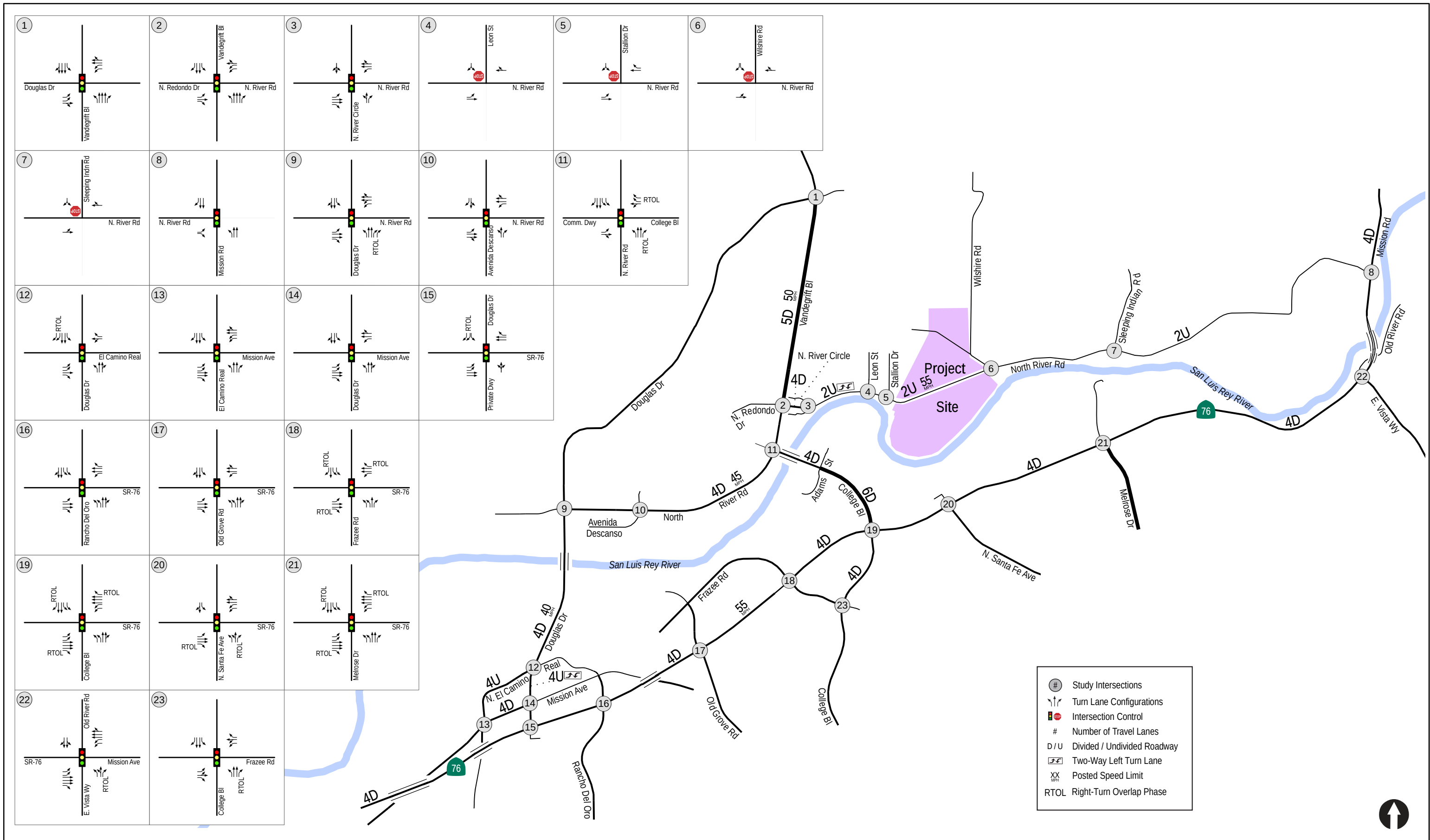
Table 3–1 shows the existing street segment Average Daily Traffic (ADT) volumes in the Project area. **Figure 3–2** shows the existing AM/PM peak hour turning movements and ADTs. **Appendix A** contains the peak hour intersection and daily segment count sheets, including the Caltrans data.

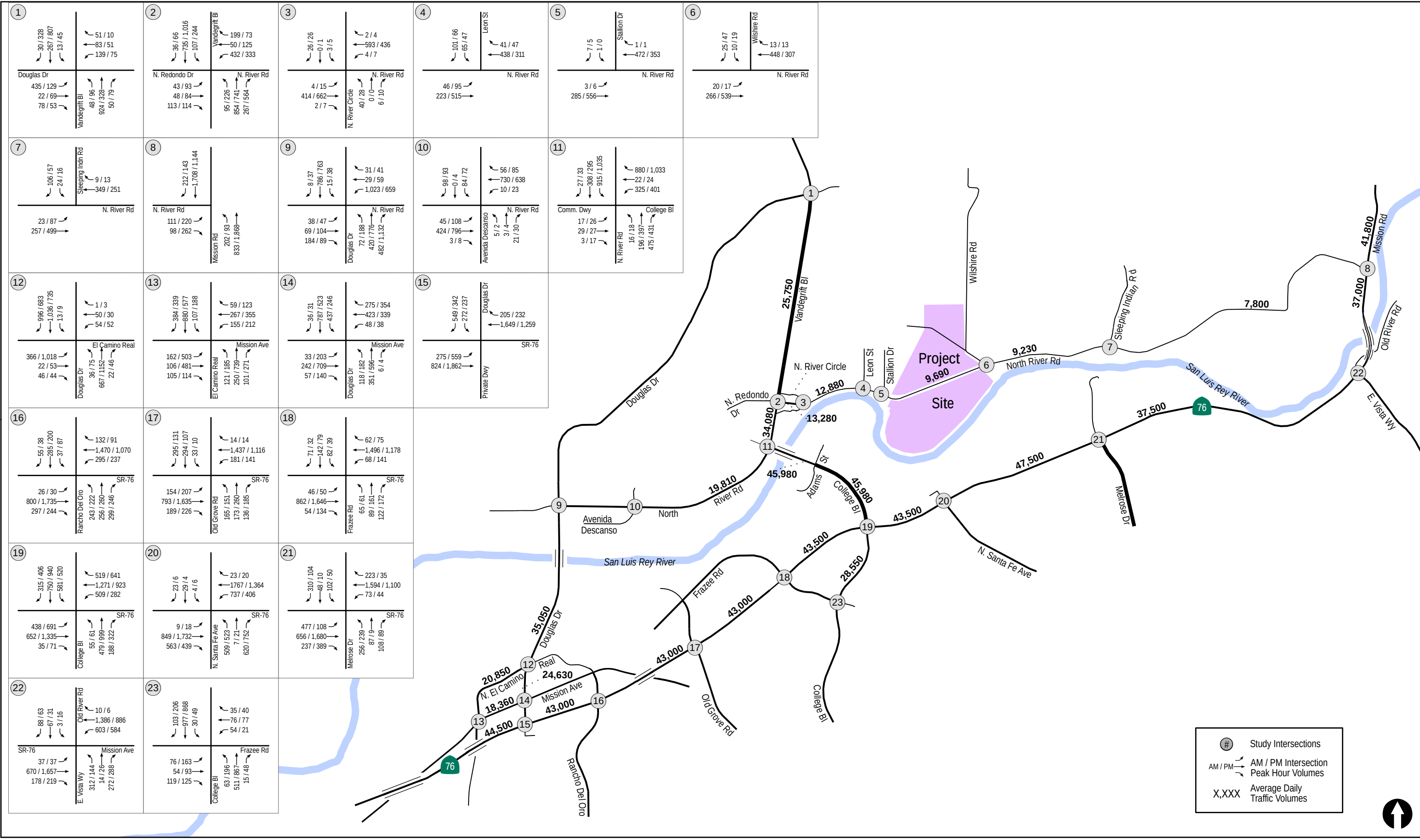
TABLE 3-1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT ^a
Vandegrift Boulevard	
1. North River Rd to Douglas Dr	25,750
North River Road	
2. Douglas Dr to College Blvd	19,810
3. College Blvd to Vandegrift Blvd	34,080
4. Vandegrift Blvd to North River Cir	13,280
5. North River Cir to Stallion Dr	12,880
6. Stallion Dr to Wilshire Rd	9,690
7. Wilshire Rd to Sleeping Indian Rd	9,230
8. Sleeping Indian Rd to SR-76	7,800
Douglas Drive	
9. SR-76 to El Camino Real	24,630
10. El Camino Real to N. River Rd	35,050
College Boulevard	
11. N. River Rd to Adams St	45,980
12. Adams St to SR-76	45,980
13. SR-76 to Frazee Rd	28,550
El Camino Real	
14. Mission Ave to Douglas Dr	20,850
Mission Avenue	
15. El Camino Real to Douglas Dr	18,360
State Route 76	
16. Foussat Rd to Douglas Dr	44,500
17. Douglas Dr to Rancho Del Oro Dr	43,000
18. Rancho Del Oro Dr to Old Grove Rd	43,000
19. Old Grove Rd to Frazee Rd	43,000
20. Frazee Rd to College Blvd	43,500
21. College Blvd to N Santa Fe Ave	43,500
22. N Santa Fe Ave to Melrose Dr	47,500
23. Melrose Dr to E Vista Way	37,500
24. E Vista Way to North River Rd	37,000
25. North River Rd to Via Montellano	42,500

Footnotes:

- a. Average Daily Traffic volumes collected by LLG Engineers in April and November 2016, when local schools were in session. Counts for North River Road from Vandegrift Boulevard to SR-76 collected in October 2017. SR-76 volumes taken from most recently available Caltrans volumes (2016).





4.0 ANALYSIS APPROACH & METHODOLOGY

4.1 Study Area

Based on the criteria identified in the San Diego Traffic Engineering Council (SANTEC)/Institute of Traffic Engineers (ITE) *Guidelines for Traffic Impact Studies in the San Diego Region*, March 2, 2000, the study area was generally determined by the limits or extent of where 50 peak hour Project trips would travel to/from the site. The study area was further defined in coordination with City staff. The Project study area includes the following locations:

Intersections

1. Vandegrift Boulevard / Douglas Drive
2. Vandegrift Boulevard / North River Road
3. North River Road / North River Circle
4. North River Road / Leon Street
5. North River Road / Stallion Drive
6. North River Road / Wilshire Road
7. North River Road / Sleeping Indian Road
8. North River Road / SR-76 (Mission Road)
9. Douglas Drive / North River Road
10. North River Road / Avenida Descanso
11. North River Road / College Boulevard
12. Douglas Drive / El Camino Real
13. Mission Avenue / El Camino Real
14. Mission Avenue / Douglas Drive
15. SR-76 / Douglas Drive
16. SR-76 / Rancho Del Oro Drive
17. SR-76 / Old Grove Road
18. SR-76 / Frazee Road
19. SR-76 / College Boulevard
20. SR-76 / North Santa Fe Avenue
21. SR-76 / Melrose Drive
22. SR-76 / East Vista Way
23. College Boulevard / Frazee Road

Segments

Vandegrift Boulevard

1. North River Road to Douglas Drive

North River Road

2. Douglas Drive to College Boulevard
3. College Boulevard to Vandegrift Boulevard
4. Vandegrift Boulevard to North River Circle
5. North River Circle to Stallion Drive
6. Stallion Drive to Wilshire Road
7. Wilshire Road to Sleeping Indian Road
8. Sleeping Indian Road to SR-76

Douglas Drive

- 9. SR-76 to El Camino Real
- 10. El Camino Real to North River Road

College Boulevard

- 11. North River Road to Adams Street
- 12. Adams Street to SR-76
- 13. SR-76 to Frazee Road

El Camino Real

- 14. Mission Avenue to Douglas Drive

Mission Avenue

- 15. El Camino Real to Douglas Drive

State Route 76

- 16. Foussat Road to Douglas Drive
- 17. Douglas Drive to Rancho Del Oro Drive
- 18. Rancho Del Oro Drive to Old Grove Road
- 19. Old Grove Road to Frazee Road
- 20. Frazee Road to College Boulevard
- 21. College Boulevard to N Santa Fe Avenue
- 22. N Santa Fe Avenue to Melrose Drive
- 23. Melrose Drive to E Vista Way
- 24. E Vista Way to North River Road
- 25. North River Road to Via Montellano

4.2 Analysis Approach

The Project proposes to construct 689 residential homes with an additional mix of retail, restaurant, hotel, and agricultural land uses on the currently agricultural site. Access is proposed via North River Road. Project traffic for each option was analyzed under existing, near-term and Year 2035 conditions

An explanation of each scenario is provided below.

Existing conditions represent the existing on-the-ground network and traffic volume conditions at the time of data collection in April and November 2016 while schools were in session. Count along North River Road were collected in October 2017. SR-76 volumes were taken from the most recently available Caltrans ADT data (2016).

Existing + Project conditions represent the operations of the existing street network with the addition of the traffic generated by the complete development of the proposed Project.

Existing + Cumulative Projects conditions represent the time period in the near future when it would be expected that other nearby development or infrastructure projects would contribute to cumulative growth in the area which would increase the overall study area traffic volumes prior to

the Project's anticipated opening year. *Section 9.0* discusses the cumulative conditions in greater detail.

Existing + Cumulative Projects + Project conditions represent the time period in the near future when traffic generated by the total Project would be on the street system and when it would be expected that other nearby development or infrastructure projects would contribute to cumulative growth in the area which would increase the overall study area traffic volumes.

Year 2035 Without Project (Master Transportation Roadway Plan) assumes the Adopted General Plan land uses and traffic volumes represented in the City's General Plan Circulation Element. The Year 2035 network conditions were reviewed from the 2030 Master Transportation Roadway Plan outlined in the Oceanside Circulation Element. This Plan consists of planned future network changes and identifies the ultimate classifications for Circulation Element roadways, most of which are also funded by the Oceanside Thoroughfare and Traffic Signal Fee Program Update Study, March 25, 2016. Specific intersection improvements identified in the Master Transportation Roadway Plan, were not assumed in the Year 2035 analysis. Most notably, the Master Transportation Roadway Plan assumes the connection of Melrose Drive between North River Road and SR-76 and Spur Avenue and S. Santa Fe Avenue. The connection of Melrose Drive between its current terminus, north of SR-76 to North River Road would have a considerable effect on traffic patterns in the immediate area of the Project site. *Section 11.0* provides more information on the Year 2035 (Master Transportation Roadway Plan) assumptions.

Year 2035 With Project (Master Transportation Roadway Plan) assumes the baseline conditions of the Year 2035 (Master Transportation Roadway Plan) scenario with the increase in intensity of the land uses within the proposed Project site. The total traffic volumes generated by the proposed Project was added to the baseline Year 2035 conditions for the "plus Project" condition. *Section 11.0* provides more information on the Year 2035 (Master Transportation Roadway Plan) assumptions.

Year 2035 Without Project (Without Melrose Drive Extension) assumes the Adopted General Plan land uses and traffic volumes represented in the City's General Plan Circulation Element. However, an alternative network scenario was analyzed in the General Plan EIR Traffic Study, *Alternative 2*, which evaluated the street network with key changes to the ultimately adopted Master Transportation Roadway Plan. Within the study area, the most notable change is that the Melrose Drive extensions were not assumed to connect between North River Road and SR-76 and Spur Avenue and S. Santa Fe Avenue. The construction of the Melrose Drive extension has been a contentious issue within the City for some time. It has been indicated that this connection may not occur due to significant environmental constraints to the river valley and lack of funding per the City's Thoroughfare and Traffic Signal Fee Program Update Study. In addition to other key network changes under *Alternative 2*, the College Boulevard bridge between North River Road and Adams Street was assumed to remain a four-lane bridge in this scenario given this connection also may not occur due to significant environmental constraints to the river valley and lack of funding per the City's Thoroughfare and Traffic Signal Fee Program Update Study. *Section 14.0* provides more information on the Year 2035 (Without Melrose Drive Extension) assumptions.

Year 2035 With Project (Without Melrose Drive Extension) assumes the baseline conditions of the Year 2035 (Without Melrose Drive Extension) scenario with the increase in intensity of the land uses within the proposed Project site. The total traffic volumes generated by the proposed Project was added to the baseline Year 2035 conditions for the “plus Project” condition. *Section 14.0* provides more information on the Year 2035 (Without Melrose Drive Extension) assumptions.

Table 4–1 lists the scenarios analyzed in this report.

TABLE 4–1
ANALYSIS SCENARIOS

<i>Baseline Conditions</i>
- Existing - Existing + Near-Term Cumulative Projects - Year 2035 (Master Transportation Roadway Plan) - Year 2035 (Without Melrose Drive Extension – <i>Alternative 2</i>)
<i>Proposed Project Conditions</i>
- Existing + Proposed Project - Existing + Near-Term Cumulative + Proposed Project - Year 2035 With Project (Master Transportation Roadway Plan) - Year 2035 With Project (Without Melrose Drive Extension – <i>Alternative 2</i>)

4.3 Methodology

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of Service provides an index to the operational qualities of a roadway segment or an intersection. Level of Service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of Service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.3.1 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 10) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS).

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapters 19 and 20 of the *HCM*, with the assistance of the *Synchro* (version 10) computer software.

Roundabouts were analyzed using the *SIDRA INTERSECTION (Version 7)* software. The results of the analysis provide delay (in seconds), LOS and queue outputs based upon the procedures found in Chapter 22 of the *HCM*.

4.3.2 *Street Segments*

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Oceanside's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The roadway classification table is attached in **Appendix B**.

5.0 SIGNIFICANCE CRITERIA

The City of Oceanside uses the published SANTEC/ITE guidelines for the determination of the significance of impacts. A project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds are shown in **Table 5-1** below for roadway segments and intersections.

If a project exceeds the thresholds in *Table 5-1*, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated.

Two types of traffic-related impacts were identified: *direct* traffic impacts and *cumulative* traffic impacts. *Direct* impacts were calculated in the near-term where Project-added traffic resulted in a degradation in Level of Service (LOS) from acceptable LOS D or better operations to below LOS D conditions. *Cumulative* impacts were calculated in the near-term and long-term conditions where Project-added traffic resulted in significant increase in intersection delay or street segment volume-to-capacity ratios over the allowable thresholds shown in *Table 5-1*, and the significant increase in intersection delay or volume-to-capacity ratios occurs at either at locations with pre-existing LOS deficiencies (LOS E or F), or where a new LOS deficiency results.

Direct impacts occur where project traffic is the sole reason that the impact occurs. Year 2035 significant impacts are considered *cumulative* impacts since traffic generated by existing development, future general growth, and other development projects are all included in the Year 2035 traffic volume projections, in addition to project traffic. Such impacts are cumulative by definition in CEQA.

TABLE 5-1
CITY OF OCEANSIDE
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project ^a	Allowable Increase Due to Project Impacts ^b	
	Roadway Segments	Intersections
	V/C	Delay (sec.)
E & F	0.02	2.0

Source: SANTEC/ITE *Guidelines for Traffic Impact Studies in the San Diego Region*, March 2, 2000.

Footnotes:

- a. All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2 or a similar LOS chart for each jurisdiction). The acceptable LOS for roadways and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions).
- b. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above) the project applicant shall be responsible for mitigating significant impact changes.

General Notes:

1. V/C = Volume to Capacity Ratio
2. Delay = Average stopped delay per vehicle measured in seconds for intersections.
3. LOS = Level of Service

6.0 ANALYSIS OF EXISTING CONDITIONS

The following section presents the analysis of existing study area locations.

6.1 Peak Hour Intersection Operations

Table 6–1 summarizes the existing intersections LOS. As seen in *Table 6–1*, all intersections are calculated to currently operate at LOS D or better except for the following:

- Intersection #2. Vandegrift Blvd / N. River Rd – LOS E during the PM peak hour
- Intersection #11. N. River Rd / College Blvd – LOS E during the PM peak hour
- Intersection #16. SR-76 / Rancho Del Oro Dr – LOS E/F during the AM/PM peak hours
- Intersection #17. SR-76 / Old Grove Rd – LOS E during the AM peak hour
- Intersection #19. SR-76 / College Blvd – LOS E/F during the AM/PM peak hours
- Intersection #20. SR-76 / N. Santa Fe Ave – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Dr – LOS E during the AM peak hour

Appendix C contains the existing intersection analysis worksheets.

6.2 Daily Street Segment Operations

Table 6–2 summarizes the existing roadway segment operations. As seen in *Table 6–2*, the study area segments are calculated to currently operate at LOS D or better except for the following:

- Segment #6. North River Rd: Stallion Dr to Wilshire Rd – LOS E
- Segment #7. North River Rd: Wilshire Rd to Sleeping Indian Rd – LOS E
- Segment #10. Douglas Dr: El Camino Real to N. River Rd – LOS E
- Segment #11. College Blvd: N. River Rd to Adams St – LOS F
- Segment #12. College Blvd: Adams St to SR-76 – LOS E

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
1. Vandegrift Blvd / Douglas Dr	Signal	AM PM	18.5 17.6	B B
2. Vandegrift Blvd / N. River Rd	Signal	AM PM	25.4 56.8	C E
3. N. River Rd / North River Circle	Signal	AM PM	10.0 10.1	A B
4. N. River Rd / Leon St	MSSC ^c	AM PM	16.3 16.5	C C
5. N. River Rd / Stallion Dr	MSSC	AM PM	12.1 10.5	B B
6. N. River Rd / Wilshire Rd	MSSC	AM PM	16.2 19.0	C C
7. N. River Rd / Sleeping Indian Rd	MSSC	AM PM	13.1 13.3	B B
8. N. River Rd / SR-76	Signal	AM PM	30.8 23.5	C C
9. Douglas Dr / N. River Rd	Signal	AM PM	38.2 26.3	D C
10. N. River Rd / Avenida Descanso	Signal	AM PM	16.8 10.4	B B
11. N. River Rd / College Blvd	Signal	AM PM	40.9 59.2	D E
12. Douglas Dr / El Camino Real	Signal	AM PM	16.8 34.2	B C
13. Mission Ave / El Camino Real	Signal	AM PM	21.0 34.5	C C
14. Mission Ave / Douglas Dr	Signal	AM PM	30.7 33.8	C C
15. SR-76 / Douglas Dr	Signal	AM PM	34.1 25.0	C C
<i>(Continued on Next Page)</i>				

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
(Continued From Previous Page)				
16. SR-76 / Rancho Del Oro Dr	Signal	AM PM	56.0 90.9	E F
17. SR-76 / Old Grove Rd	Signal	AM PM	63.3 49.4	E D
18. SR-76 / Frazee Rd	Signal	AM PM	35.2 43.8	D D
19. SR-76 / College Blvd	Signal	AM PM	69.7 124.0	E F
20. SR-76 / N. Santa Fe Ave	Signal	AM PM	101.3 109.0	F F
21. SR-76 / Melrose Dr	Signal	AM PM	56.9 29.0	E C
22. SR-76 / E. Vista Way	Signal	AM PM	42.8 39.6	D D
23. College Blvd / Frazee Rd	Signal	AM PM	16.7 20.5	B C

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. MSSC = Minor Street Stop-Controlled intersection.
Minor street left-turn delay reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 6-2
EXISTING DAILY STREET SEGMENT OPERATIONS

Street Segment	Currently Built As	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
Vandegrift Boulevard					
1. N. River Rd to Douglas Dr	5-Ln Major Arterial	45,000	25,750	C	0.572
North River Road					
2. Douglas Dr to College Blvd	4-Ln Major Arterial	40,000	19,810	B	0.495
3. College Blvd to Vandegrift Blvd	5-Ln Major Arterial	45,000	34,080	C	0.757
4. Vandegrift Blvd to North River Cir	4-Ln Major Arterial	40,000	13,280	A	0.332
5. North River Cir to Vandegrift Blvd	Collector	15,000	12,880	D	0.859
6. Stallion Dr to Wilshire Rd	Collector	10,000	9,690	E	0.969
7. Wilshire Rd to Sleeping Indian Rd	Collector	10,000	9,230	E	0.923
8. Sleeping Indian Rd to SR-76	Collector	10,000	7,800	D	0.780
Douglas Drive					
9. SR-76 to El Camino Real	4-Ln Secondary Collector	30,000	24,630	D	0.821
10. El Camino Real to N. River Rd	4-Ln Major Arterial	40,000	35,050	E	0.876
College Boulevard					
11. N. River Rd to Adams St	4-Ln Major Arterial	40,000	45,980	F	1.150
12. Adams St to SR-76	6-Ln Major Arterial	50,000	45,980	E	0.920
13. SR-76 to Frazee Rd	4-Ln Major Arterial	40,000	28,550	C	0.714
El Camino Real					
14. Mission Ave to Douglas Dr	4-Ln Major Arterial	40,000	20,850	B	0.521
Mission Avenue					
15. El Camino Real to Douglas Dr	4-Ln Major Arterial	40,000	18,360	B	0.459
<i>(Continued on Next Page)</i>					

TABLE 6-2
EXISTING DAILY STREET SEGMENT OPERATIONS

Street Segment	Currently Built As	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
<i>(Continued from Previous Page)</i>					
State Route 76					
16. Foussat Rd to Douglas Dr	4-Ln Expressway	60,000	44,500	C	0.742
17. Douglas Dr to Rancho Del Oro Dr	4-Ln Expressway	60,000	43,000	C	0.717
18. Rancho Del Oro Dr to Old Grove Rd	4-Ln Expressway	60,000	43,000	C	0.717
19. Old Grove Rd to Frazee Rd	4-Ln Expressway	60,000	43,000	C	0.717
20. Frazee Rd to College Blvd	4-Ln Expressway	60,000	43,500	C	0.725
21. College Blvd to N Santa Fe Ave	4-Ln Expressway	60,000	43,500	C	0.725
22. N Santa Fe Ave to Melrose Dr	4-Ln Expressway	60,000	47,500	C	0.792
23. Melrose Dr to E Vista Way	4-Ln Expressway	60,000	37,500	C	0.625
24. E Vista Way to North River Rd	4-Ln Expressway	60,000	37,000	C	0.617
25. North River Rd to Via Montellano	4-Ln Expressway	60,000	42,500	C	0.708

Footnotes:

- a. Capacities based on City of Oceanside Roadway Classification Table, September 2012.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.
- e. Given this 3.5-mile stretch of North River Road contains no traffic signals and has no property fronting the roadway, a modified LSO Ecapacity of 12,500 ADT was used in the analysis to account for the reduced friction along the roadway.

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

A highly descriptive discussion of the proposed Project land uses is detailed in *Section 2.2* of this report. As discussed in *Section 2.2* of this report, the Project proposes to develop the approximately 176.63-acre site with 689 residential units and would also include commercial and restaurant uses, a local farm, and a hotel. The residential portion of the Project proposes a mix of housing types including single-family detached homes, multi-family attached homes, and mixed-use residential units (located above or in close proximity to commercial uses in the Village Core). The following is a discussion on the traffic expected to be generated with the development of the Project.

7.1 Trip Generation

Gross Trip Generation

Trip generation for the proposed development was calculated using the SANDAG (*Not so*) *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. With the changes in housing types proposed, three (3) different residential trip rates were used to calculate the total Project trip generation. The residential trip rates were selected based on the density for each Planning Area. The commercial portion of the site representing the Maker Spaces and Farmers' Market land use types uses the SANDAG "specialty retail" rates and the restaurant uses the "quality restaurant" rate. The proposed farm use uses the SANDAG "agriculture" rate in the calculations and the hotel use utilizes a modified "hotel" rate from SANDAG. The hotel rate was reduced from 10 ADT/room to 9 ADT/room since the hotel does not propose to include convention facilities that are included in the typical "hotel w/ convention facilities/restaurant" rate from SANDAG. The hotel is labeled as a "boutique" hotel that would utilize the community amenities as ancillary uses to the hotel.

Primary / Pass-By Trips

Development of new land uses will create trips on a street system that are new, or "primary" trips. However, several types of retail/commercial developments experience local and regional trips at the driveway that are already on the street system whether that development exists or not. These trips are known as "pass-by" trips.

Pass-by trips that are already on the street system passing along the Project frontage (North River Road), and only appear as new trips in and out of the Project driveways. Using engineering guidelines, 10% of daily and PM peak hour commercial traffic is categorized as pass-by.

Primary Trips

The remaining trips (90%) are those that are new to the street system, also called "primary" trips. These trips occur due to the development of the Project and the Project itself becomes one end of a primary trip, either the origin or the destination.

Net Trip Generation

After accounting for pass-by trips, a mixed-use reduction was applied to the remaining commercial and residential trips. Per the SANDAG guide, up to a 10% mixed-use reduction can be applied to

projects “where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).” Given the detailed explanation of the walkability of the Project site in *Section 2.2* of this report, as well as in the Planned Development Plan prepared by the applicant, a mixed-use reduction was deemed appropriate. To provide a conservative reduction, 5% was applied to the Project trip generation.

Table 7–1 shows the Project traffic generation.

TABLE 7-1
PROJECT TRIP GENERATION

Land Use		Size		Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour							
				Rate ^a	Volume	% of ADT ^a	In:Out		Volume			% of ADT ^a	In:Out		Volume			
							Split		In	Out	Total		Split		In	Out	Total	
–	RESIDENTIAL TRIPS																	
–	UNIT TYPE																	
–	Single-Family Detached and Multi-Family Attached (≥ 20 DU per acre) ^f	130	DU	6	/DU	780	8%	20%	80%	12	50	62	9%	70%	30%	49	21	70
–	Single-Family Detached (≤ 20 DU per acre) ^g	250	DU	8	/DU	2,000	8%	20%	80%	32	128	160	10%	70%	30%	140	60	200
–	Single-Family Detached (≤ 6 DU per acre) ^h	309	DU	10	/DU	3,090	8%	30%	70%	74	173	247	10%	70%	30%	216	93	309
A	RESIDENTIAL TRIP GENERATION	689	DU	—		5,870	—	—	—	118	351	469	—	—	—	405	174	579
–	NON-RESIDENTIAL COMPONENT																	
B	Commercial (C + D)	25	KSF	40	/KSF	1,000	3%	60%	40%	18	12	30	9%	50%	50%	45	45	90
C	Primary External Trips ^d	90%		—		900	—	—	—	18	12	30	9%	50%	50%	40	40	80
D	Pass-by External Trips ^d	10%		—		100	—	—	—	—	—	—	9%	50%	50%	5	5	10
E	Restaurant ^b (F + G)	5	KSF	100	/KSF	500	1%	60%	40%	3	2	5	8%	70%	30%	28	12	40
F	Primary External Trips ^d	90%		—		450	—	—	—	3	2	5	8%	70%	30%	25	11	36
G	Pass-by External Trips ^d	10%		—		50	—	—	—	—	—	—	8%	70%	30%	3	1	4
H	Farm ^c	30	acres	2	/acre	60	0.26	43%	57%	7	9	16	0.45	57%	43%	15	12	27
I	Hotel ^c	100	rooms	9	/room	900	8%	40%	60%	29	43	72	9%	60%	40%	49	32	81
J	Subtotal Primary Trips (Residential + Primary Commercial Trips + Hotel Trips) (A + C + F + H + I)					8,180	—	—	—	175	417	592	—	—	—	534	269	803
K	Mixed Use Reduction ^d (J x 5%)	5%		—		(409)	—	—	—	(9)	(21)	(30)	—	—	—	(27)	(13)	(40)
L	TOTAL PRIMARY TRIPS (J – K)					7,771	—	—	—	166	396	562	—	—	—	507	256	763
M	TOTAL DRIVEWAY TRIPS (A + B + E + H + I) – K					7,921	—	—	—	166	396	562	—	—	—	515	262	777

Footnotes:

- a. Rates based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002
- b. Restaurant uses "Quality Restaurant" rate from SANDAG.
- c. For Farm, SANDAG "agriculture" rate applied. For peak splits, ITE 818 "Nursery (Wholesale)" rate applied.
- d. Primary trips, pass-by trips, and mixed-use credit percentages sourced to SANDAG.
- e. For Hotel, SANDAG "hotel" rate reduced from 10 ADT/room to 9 ADT/room since the "hotel" rate includes trips generated by convention facilities, which are not proposed by the Project.
- f. These units are assigned the "Apartment" trip rate.
- g. These units are assigned the "Condominium" trip rate.
- e-h. These units are assigned the "Single Family" trip rate.

7.2 Trip Distribution/Assignment

The distribution of Project traffic was determined using a Select Zone Assignment (SZA) computerized traffic model prepared by SANDAG. The SZA used SANDAG's Series 12 model with the base year (existing) roadway network and land use conditions, and matches trip generating uses (such as residential) with trip-attracting uses (such as retail/commercial), and presents the relative percentage of traffic on the roadway system.

The future connection of Melrose Drive between North River Road and SR-76 and Spur Avenue and S. Santa Fe Avenue, which is included in later model years of the Series 12 traffic model, is in close proximity to the Project site. Under existing and near-term conditions, this connection does not exist. The connection of Melrose Drive between its current terminus, north of SR-76 to North River Road would have a considerable effect on Project trip distribution. This connection would allow a substantial share of Project-related traffic to use Melrose Drive to access SR-76 and the regional street system. In its absence, the majority of Project-related traffic bound for SR-76 will travel via Vandegrift Boulevard and College Boulevard, through locations already subject to congestion during peak hours. Therefore, two separate distributions were prepared focusing on the connection or elimination of the Melrose Drive extensions. The baseline existing and near-term analyses assume the current conditions without the Melrose Drive extensions.

By the Year 2035, the City's Circulation Element Master Transportation Roadway Plan is assumed to be completed. Therefore, the Year 2035 baseline analysis redistributes Project traffic within the study area to account for the future extension of Melrose Drive. Further details on this scenario are provided later on in *Section 11.0* of this report.

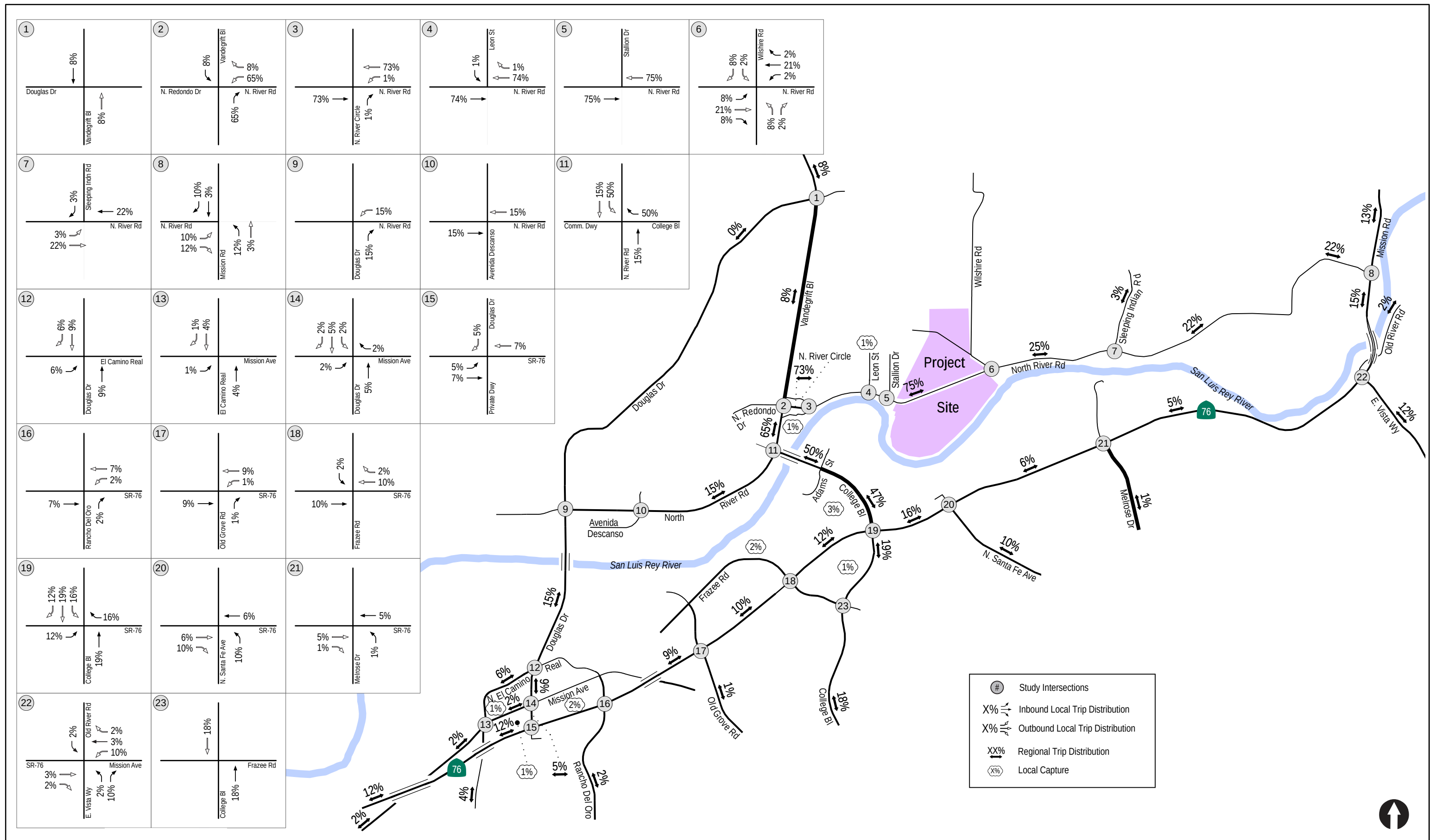
The connection of Melrose Drive over the San Luis Rey Bridge is affected by significant environmental constraints and a lack of funding. Therefore, a separate "Year 2035 Without Melrose Drive Extension" analysis is provided later on in *Section 14.0* of this report using the existing and near-term Project distribution without this connection.

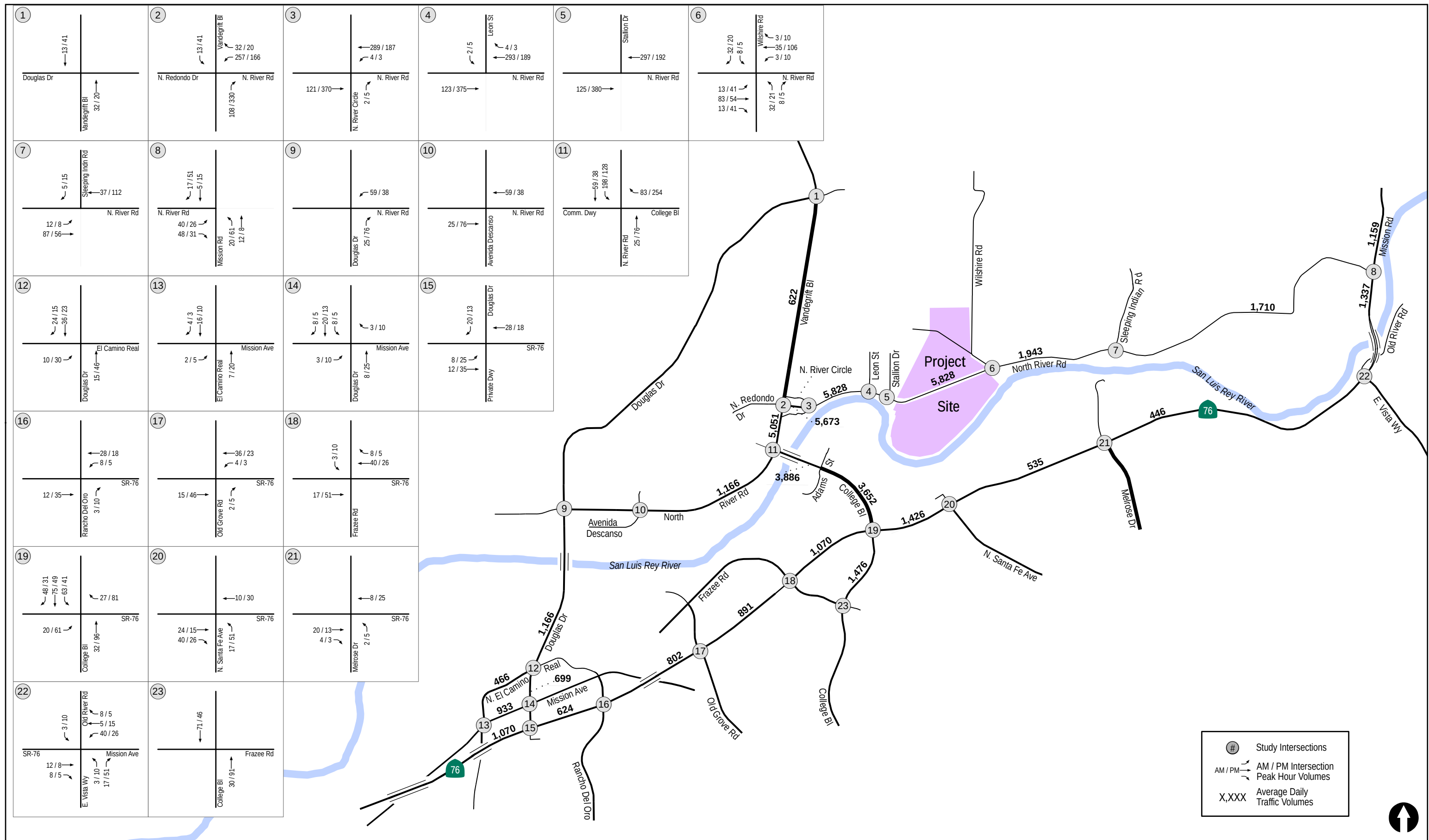
Once the traffic distribution was established, the Project-generated traffic was assigned to the adjacent street system.

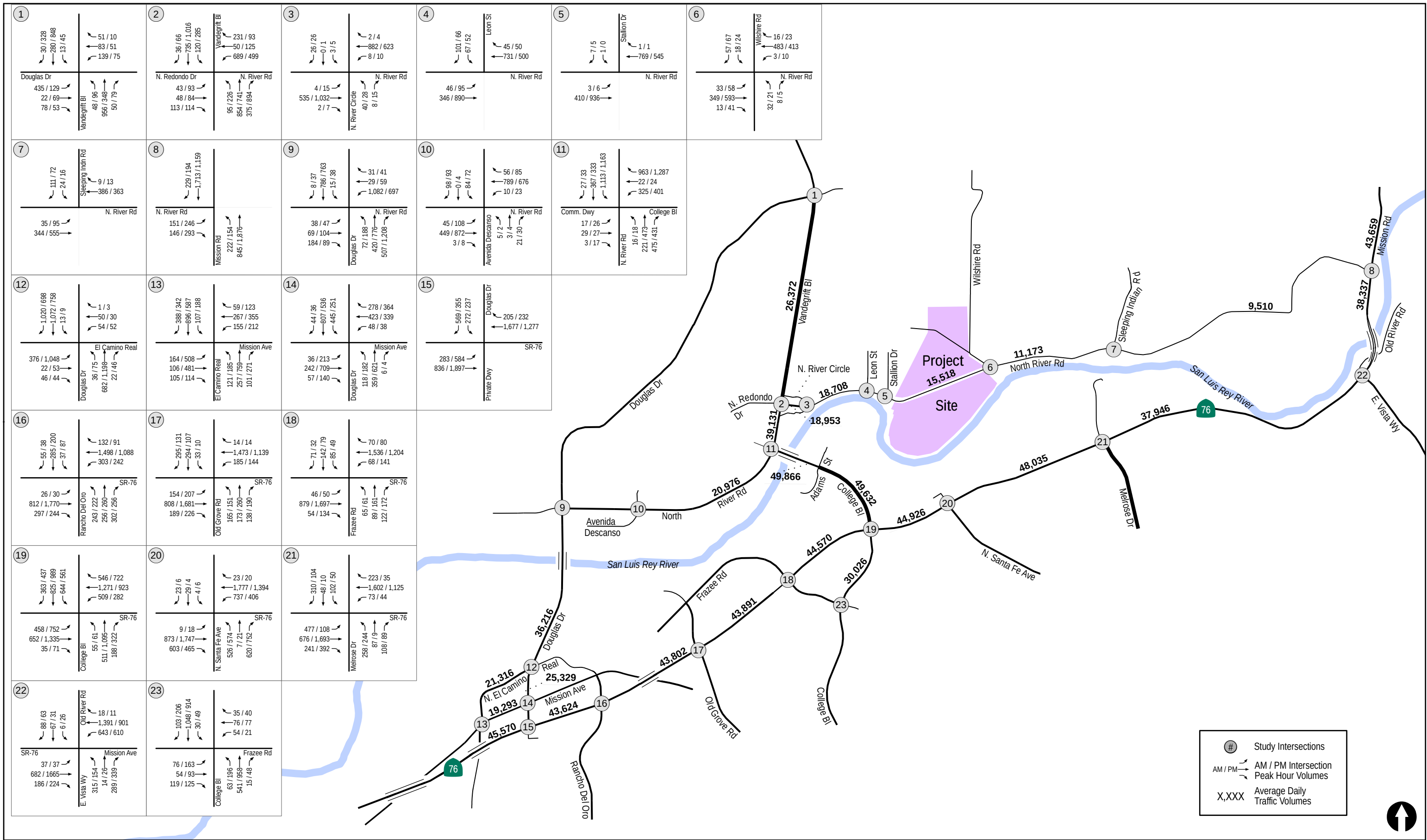
Figure 7-1 shows the regional and local distribution of Project trips (under existing and near-term conditions, without Melrose Drive extension). **Figure 7-2** depicts the proposed Project traffic assignment. **Figure 7-3** depicts the Existing + Project traffic volumes.

It should be noted the Project driveway distribution and access traffic volumes are provided later on in *Section 13.0* of this report.

Appendix D contains a copy of the SANDAG Select Zone Assignment traffic model.







8.0 ANALYSIS OF EXISTING + PROJECT SCENARIOS

The following section presents the analysis of existing study area locations with the addition of Project traffic, for each of the three Project alternatives.

8.1 Existing + Project

8.1.1 Peak Hour Intersection Operations

Table 8–1 summarizes the existing intersections LOS. As seen in *Table 8–1*, with the addition of Project traffic, all intersections are calculated to continue to operate at LOS D or better except for the following:

- **Intersection #2. Vandegrift Boulevard / N. River Road – LOS F during the PM peak hour**
- **Intersection #11. N. River Road / College Boulevard – LOS E during the AM/PM peak hours**
- **Intersection #16. SR-76 / Rancho Del Oro Drive – LOS E/F during the AM/PM peak hours**
- Intersection #17. SR-76 / Old Grove Road – LOS E during the AM peak hour
- **Intersection #19. SR-76 / College Boulevard – LOS E/F during the AM/PM peak hour**
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS E during the AM peak hour

Based on City of Oceanside significance criteria, **four (4) significant impacts** were calculated with the addition of Project traffic at the intersections **bolded** and underlined above since the Project adds greater than 2.0 seconds of delay to these locations.

Appendix E contains the Existing + Project intersection analysis worksheets.

8.1.2 Daily Street Segment Operations

Table 8–2 summarizes the existing roadway segment operations. As seen in *Table 8–2*, with the addition of Project traffic, the study area segments are calculated to continue to operate at LOS D or better except for the following:

- **Segment #5. North River Road: N. River Circle to Stallion Drive – LOS F**
- **Segment #6. North River Road: Stallion Drive to Wilshire Road – LOS F**
- **Segment #7. North River Road: Wilshire Road to Sleeping Indian Road – LOS E**
- **Segment #9. Douglas Drive: SR-76 to El Camino Real – LOS E**
- **Segment #10. Douglas Drive: El Camino Real to N River Road – LOS E**
- **Segment #11. College Boulevard: N. River Road to Adams Street – LOS F**
- **Segment #12. College Boulevard: Adams Street to SR-76 – LOS E**

Based on City of Oceanside significance criteria, **seven (7) significant impacts** were calculated with the addition of Project traffic on the street segments **bolded** and underlined above since the Project increases the V/C by greater than 0.02 at these locations.

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Delay Δ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Vandegrift Blvd / Douglas Dr	Signal	AM PM	18.5 17.6	B B	18.5 17.7	B B	0.0 0.1	No
2. Vandegrift Blvd / N. River Rd	Signal	AM PM	25.4 56.8	C E	38.3 148.1	D F	12.9 91.3	Yes
3. N. River Rd / North River Circle	Signal	AM PM	10.0 10.1	A B	10.2 10.8	B B	0.2 0.7	No
4. N. River Rd / Leon St	MSSC ^d	AM PM	16.3 16.5	C C	28.5 32.6	D D	12.2 16.1	No
5. N. River Rd / Stallion Dr	MSSC	AM PM	12.1 10.5	B B	16.4 12.2	C B	4.3 1.7	No
6. N. River Rd / Wilshire Rd	MSSC/ Roundabout. ^e	AM PM	16.2 19.0	C C	6.5 8.2	A A	(9.7) (10.8)	No
7. N. River Rd / Sleeping Indian Rd	MSSC	AM PM	13.1 13.3	B B	14.4 15.7	B C	1.3 2.4	No
8. N. River Rd / SR-76 (Mission Rd)	Signal	AM PM	30.8 23.5	C C	36.4 30.5	D C	5.6 7.0	No
9. Douglas Dr / N. River Rd	Signal	AM PM	38.2 26.3	D C	40.7 27.5	D C	2.5 1.2	No
10. N. River Rd / Avenida Descanso	Signal	AM PM	16.8 10.4	B B	17.4 10.5	B B	0.6 0.1	No
11. N. River Rd / College Blvd	Signal	AM PM	40.9 59.2	D E	64.3 79.3	E E	23.4 20.1	Yes
12. Douglas Dr / El Camino Real	Signal	AM PM	16.8 34.2	B C	17.6 37.2	B D	0.8 3.0	No
13. Mission Ave / El Camino Real	Signal	AM PM	21.0 34.5	C C	21.2 35.1	C D	0.2 0.6	No
14. Mission Ave / Douglas Dr	Signal	AM PM	30.7 33.8	C C	31.8 36.1	C D	1.1 2.3	No
15. SR-76 / Douglas Dr	Signal	AM PM	34.1 25.0	C C	35.5 28.6	D C	1.4 3.6	No
16. SR-76 / Rancho Del Oro Dr	Signal	AM PM	56.0 90.9	E F	58.1 98.2	E F	2.1 7.3	Yes
Continued on Next Page								

TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Delay Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
Continued on Previous Page								
17. SR-76 / Old Grove Rd	Signal	AM	63.3	E	64.3	E	1.0	No
		PM	49.4	D	50.3	D	0.9	
18. SR-76 / Frazee Rd	Signal	AM	35.2	D	35.6	D	0.4	No
		PM	43.8	D	44.9	D	1.1	
19. SR-76 / College Blvd	Signal	AM	69.7	E	76.5	E	6.8	Yes
		PM	124.0	F	146.4	F	22.4	
20. SR-76 / N. Santa Fe Ave	Signal	AM	101.3	F	101.6	F	0.3	No
		PM	109.0	F	109.7	F	0.7	
21. SR-76 / Melrose Dr	Signal	AM	56.9	E	57.0	E	0.1	No
		PM	29.0	C	29.2	C	0.2	
22. SR-76 / E. Vista Way	Signal	AM	35.2	D	35.8	D	0.6	No
		PM	39.2	D	40.8	D	1.6	
23. College Blvd / Frazee Rd	Signal	AM	16.7	B	17.1	B	0.4	No
		PM	20.5	C	21.0	C	0.5	
24. N. River Rd / Western Roundabout	Round.	AM	—	—	8.4	A	—	No
		PM	—	—	12.7	B	—	
25. N. River Rd / Main Signal	Signal	AM	—	—	8.5	A	—	No
		PM	—	—	8.6	A	—	

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- Δ denotes the increase in delay due to Project.
- MSSC = Minor Street Stop-Controlled intersection. Minor street left-turn delay reported.
- Delay decrease due to installation of roundabout at Project access intersection as a Project feature. See Section 13.0 for additional details.

General Notes:

- Sig = Significant impact, yes or no.
- Bold** typeface and **shading** represents a significant direct impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 8-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing + Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
Vandegrift Boulevard									
1. North River Rd to Douglas Dr	45,000	25,750	C	0.572	26,372	C	0.586	0.014	No
North River Road									
2. Douglas Dr to College Blvd	40,000	19,810	B	0.495	20,976	B	0.524	0.029	No
3. College Blvd to Vandegrift Blvd	45,000	34,080	C	0.757	39,131	D	0.870	0.112	No
4. Vandegrift Blvd to N. River Cir	40,000	13,280	A	0.332	18,953	B	0.474	0.142	No
5. N. River Cir to Stallion Dr	15,000	12,880	D	0.859	18,708	F	1.247	0.389	Yes
6. Stallion Dr to Wilshire Rd	12,500 ^f	9,690	D	0.775	15,518	F	1.241	0.466	Yes
7. Wilshire Rd to Sleeping Indian Rd	12,500 ^f	9,230	D	0.738	11,173	E	0.894	0.155	Yes
8. Sleeping Indian Rd to SR-76	12,500 ^f	7,800	C	0.624	9,510	D	0.761	0.137	No
Douglas Drive									
9. SR-76 to El Camino Real	30,000	24,630	D	0.821	25,329	E	0.844	0.023	Yes
10. El Camino Real to N. River Rd	40,000	35,050	E	0.876	36,216	E	0.905	0.029	Yes
College Boulevard									
11. N. River Rd to Adams St	40,000	45,980	F	1.150	49,866	F	1.247	0.097	Yes
12. Adams St to SR-76	50,000	45,980	E	0.920	49,632	E	0.993	0.073	Yes
13. SR-76 to Frazee Rd	40,000	28,550	C	0.714	30,026	D	0.751	0.037	No
El Camino Real									
14. Mission Ave to Douglas Dr	40,000	20,850	B	0.521	21,316	C	0.533	0.012	No
Mission Avenue									
15. Mission Ave to Douglas Dr	40,000	18,360	B	0.459	19,293	B	0.482	0.023	No
(Continued on Next Page)									

TABLE 8-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing			Existing + Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
(Continued from Previous Page)									
State Route 76									
16. Foussat Rd to Douglas Dr	60,000	44,500	C	0.742	45,570	C	0.760	0.018	No
17. Douglas Dr to Rancho Del Oro Dr	60,000	43,000	C	0.717	43,624	C	0.727	0.010	No
18. Rancho Del Oro Dr to Old Grove Rd	60,000	43,000	C	0.717	43,802	C	0.730	0.013	No
19. Old Grove Rd to Frazee Rd	60,000	43,000	C	0.717	43,891	C	0.732	0.015	No
20. Frazee Rd to College Blvd	60,000	43,500	C	0.725	44,570	C	0.743	0.018	No
21. College Blvd to N Santa Fe Ave	60,000	43,500	C	0.725	44,926	C	0.749	0.024	No
22. N Santa Fe Ave to Melrose Dr	60,000	47,500	C	0.792	48,035	C	0.801	0.009	No
23. Melrose Dr to E Vista Way	60,000	37,500	C	0.625	37,946	C	0.632	0.007	No
24. E Vista Way to North River Rd	60,000	37,000	C	0.617	38,337	C	0.639	0.022	No
25. N. River Rd to Via Montellano	60,000	42,500	C	0.728	43,659	C	0.728	0.019	No

Footnotes:

- a. Capacities based on City of Oceanside Roadway Classification & LOS table (See Appendix B).
- b. Average Daily Traffic.
- c. Level of Service.
- d. Volume to Capacity ratio.
- e. Δ denotes a Project-induced increase in the Volume to Capacity ratio.
- f. Given this 3.5-mile stretch of North River Road contains no traffic signals and has no property fronting the roadway, a modified LOS E capacity of 12,500 ADT was used in the analysis to account for the reduced friction along the roadway.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and **shading** indicates a significant impact.

9.0 NEAR-TERM CUMULATIVE PROJECTS CONDITIONS

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG consulted with City of Oceanside staff to identify relevant, pending cumulative projects in the study area that could be constructed and generating traffic in the Project vicinity. Based on research conducted and information received from City staff, eight (8) cumulative projects are planned for the area that would add traffic to the study area street system. Traffic generated by these projects was added to the existing traffic volumes to develop the Existing + Near-Term Cumulative Projects conditions. Project traffic was added to the near-term traffic to arrive at the Existing + Near-Term Cumulative Projects + Project conditions. The following is a brief description of each of the cumulative projects.

9.1 Description of Near-Term Cumulative Projects

1. **Villa Storia** proposes to develop an approximately 35.59-acre site with a maximum of 420 residential units. The Villa Storia project proposes a mix of housing types including single-family detached and multi-family attached homes. The project site is located on Academy Road north of SR-76. The proposed project is calculated to generate 3,284 ADT with 58 inbound and 205 outbound trips during the AM peak hour and 225 inbound and 97 outbound trips during the PM peak hour. Trips were assigned to the street system based on the approved *Villa Storia Traffic Impact Study*, prepared by Linscott, Law & Greenspan, Engineers and dated May 19, 2015.
2. **Mission Cove Mixed-Use** proposes to construct 150 apartments, 138 senior/special needs housing, 5,000 square feet (SF) of specialty retail, 2,750 SF of office, 2,750 SF of medical office, senior/special needs adult day care center for up to 60 adults, and a child day care center for up to 50 children. The project is located on the south side of Mission Avenue between Airport Road and Foussat Road in the City of Oceanside. The proposed project is calculated to generate 2,080 net ADT with 58 inbound and 102 outbound trips during the AM peak hour and 104 inbound and 75 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *Mission Cove Mixed-Use Traffic Impact Study*, prepared by RBF and dated August 2011.
3. **Pacific Coast Business Park** proposes to construct 1,100,000 SF of industrial use, 518,000 SF of general office, and 80,500 SF of medical office located south of Old Grove Road and west of College Boulevard in the City of Oceanside. The proposed project is calculated to generate 21,597 ADT with 2,213 inbound and 273 outbound trips during the AM peak hour and 575 inbound and 2,080 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *Pacific Coast Business Park Traffic Impact Study*, prepared by Kimley-Horn and Associates, Inc. and dated April 2009.
4. **Rancho Del Oro Village XII (Terraza at Rancho Del Oro)** proposes to develop approximately 303 residential dwelling units consisting of a variety of multi-family product types. The project is located at the northwest quadrant of the College Boulevard and Old

Grove Road intersection in the City of Oceanside. The proposed project is calculated to generate 2,424 ADT with 39 inbound and 154 outbound trips during the AM peak hour and 169 inbound and 73 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *Rancho Del Oro Village XII Traffic Impact Study*, prepared by RBF and dated September 2010.

5. **Oceanpointe Development** is a multi-family development located in the City of Oceanside. The development includes a maximum of 200 dwelling units in three groups on a vacant lot of approximately 36 acres. The project is located mid-way between Stage Coach Road and San Ramon Drive, south of State Route 76. This project is calculated to generate 1,600 ADT per day with 26 inbound and 102 outbound trips during the AM peak hour and 112 inbound and 48 outbound trips during the PM peak hour. The traffic volumes for this cumulative project were obtained from the “Oceanpointe Multi-Family Development Traffic Impact Analysis”, conducted by LOS Engineering in March 2005. Trips were assigned to the street system based on the *Oceanpointe Multi-Family Development Traffic Impact Study*, prepared by LOS Engineering, Inc. and dated March 2005.
6. **El Corazon** proposes to redevelop a 465-acre property near the geographic center of Oceanside. The site is bound by Mesa Drive to the north, Rancho del Oro Drive to the east, Oceanside Boulevard to the south, and El Camino Real to the west. The project is proposed to be developed in several phases. Phase I includes the construction of roads, sidewalks & infrastructure to commercial sites, a Senior Center, a Hotel, Village Commercial uses, a Green Waste Facility and Interpretive Areas & West Passive Trails. Phase II consist of the construction of sports facilities, which includes a Soccer Field & Infrastructure, a Softball Complex & Infrastructure and a Baseball Complex & Infrastructure.

Phase III includes the construction of a Hotel, a Cultural/Community Center and Library, a Park, and Passive recreation areas. In addition, the West Passive Trails will be expanded and a Native Open Space Restoration Greenbelt Landscaping will be created. Phase IV consists of the construction of a Recreation Center and a Park/Recreation Area. Phase V consists of a 19.7 Acres expansion of the Park. Phase VI includes the construction of roads, sidewalks & infrastructure and a Park Expansion & Public Safety Center. The total net Year 2030 trip generation at buildout of El Corazon is calculated at 34,604 ADT with 704 inbound and 492 outbound trips during the AM peak hour and 1,796 inbound and 1,774 outbound trips during the PM peak hour. For the cumulative condition, it was assumed Phases 1 and 2 of the Master Plan would be completed along with the El Corazon Arena generating 15,251 ADT with 201 inbound and 168 outbound trips during the AM peak hour and 459 inbound and 409 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *El Corazon Traffic Impact Study*, currently under preparation by Lisncott, Law & Greenspan, Engineers.

7. **Oceanside + Melrose** proposes to construct 313 residential dwelling units on three adjacent sites, as well as 10,000 SF of restaurant and 10,000 SF of office space. The project site is

located east and west of Melrose Drive, north of Oceanside Boulevard/Bobier Drive. The proposed project is calculated to generate 4,059 ADT with 125 inbound and 215 outbound trips during the AM peak hour and 230 inbound and 130 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *Melrose+Oceanside Traffic Impact Study*, prepared by Lisncott, Law & Greenspan, Engineers, dated July 26, 2017.

8. **North River Road Residential Subdivision (Kawano-Nagata)** proposes to construct 400 residential dwelling units on two parcels for a total of 25.6 acres at a density of 15.6 units per acre. The project site is located on the south side of North River Road between Avenida Descanso and Calle Montecito. The project is calculated to generate 3,200 ADT with 51 inbound and 205 outbound trips during the AM peak hour and 224 inbound and 96 outbound trips during the PM peak hour. Trips were assigned to the street system based on the *North River Road Residential Subdivision Traffic Impact Study*, prepared by LOS Engineering, Inc. and dated October 10, 2016.

9.2 Summary of Near-Term Cumulative Project Trips

TABLE 9-1
NEAR-TERM CUMULATIVE PROJECTS SUMMARY

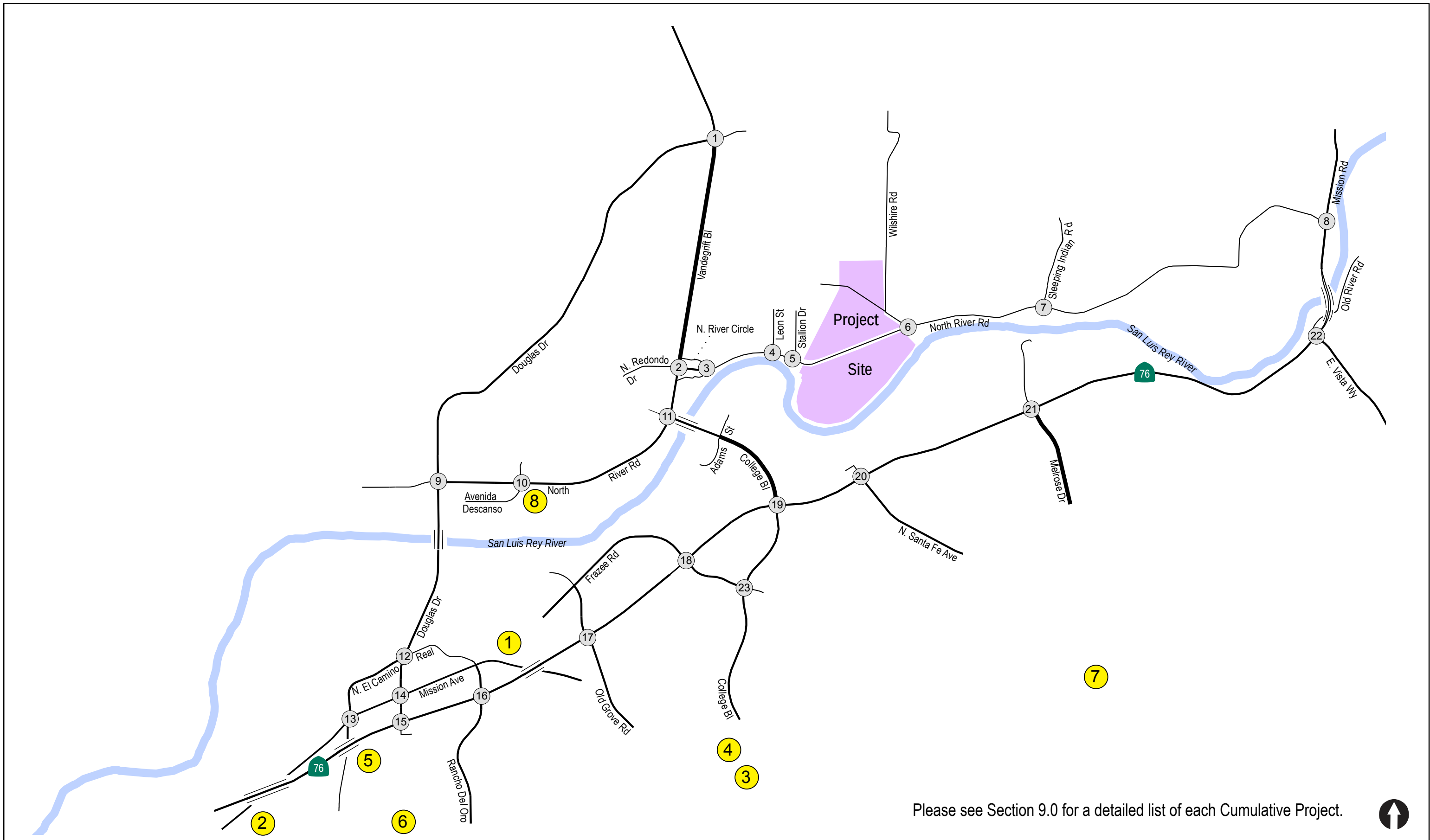
No.	Name	Project	ADT	AM		PM	
				In	Out	In	Out
1	Villa Stora	62 single family homes, 358 multi-family attached homes.	3,284	58	205	225	97
2	Mission Cove Mixed-Use	150 apartments, 138 senior housing units, 5 KSF specialty retail, 2.75 KSF office, 2.75 KSF medical office, 60 adults senior day care, 50 children day care	2,080	58	102	104	75
3	Pacific Coast Business Park	1,100 KSF industrial, 518 KSF general office, 80.5 KSF medical office	21,597	2,213	273	575	2,080
4	Rancho Del Oro Village XII	303 residential multi-family units	2,424	39	154	169	73
5	Oceanpointe Development	200 multi-family units	1,600	26	102	112	48
6	El Corazon (Phases 1 & 2 Only); including Arena	Mixed-Use Master Plan	15,251	201	168	459	409
7	Oceanside + Melrose	37 single family homes, 278 multi-family dwelling units, 10 KSF restaurant, 10 KSF office space	4,059	25	96	104	46
8	North River Road Residential	400 single family homes	3,200	51	205	224	96
Total Cumulative Projects			53,495	2,671	1,305	1,972	2,924

9.3 State Route 76 Cumulative Growth

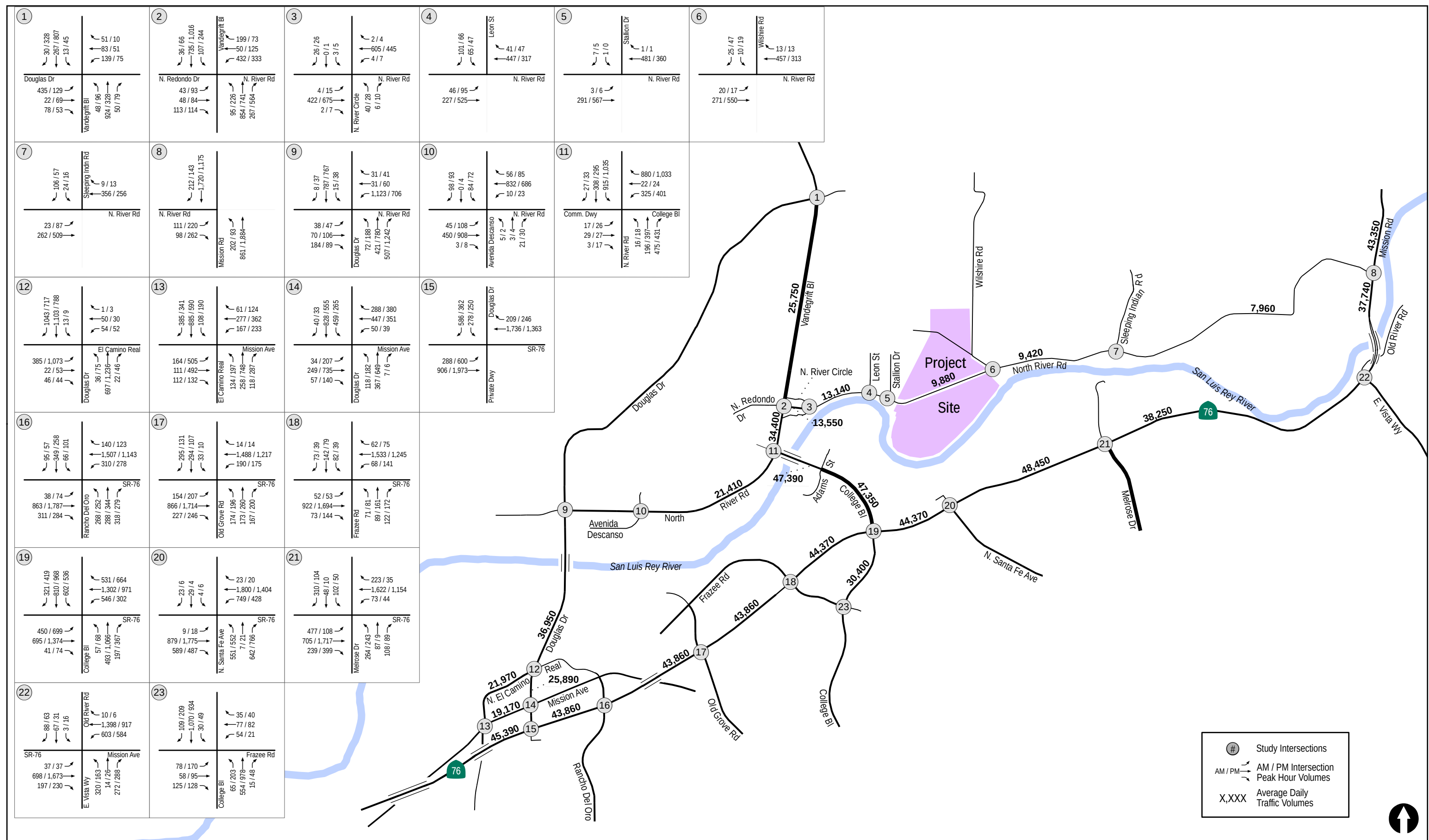
To forecast near-term cumulative traffic volumes on SR-76, a regional expressway that serves multiple jurisdictions across North County, a growth factor was applied to existing traffic volumes. A review of the most recent historical data provided by Caltrans was reviewed between 2012 and 2016 (a five-year period). According to the data, mostly negative growth has occurred on the roadway. However, to be conservative, a growth factor of two percent (2%) was applied to the existing volumes to arrive at Existing + Near-Term Cumulative traffic volumes on SR-76. A copy of the historical Caltrans data is provided in **Appendix F**.

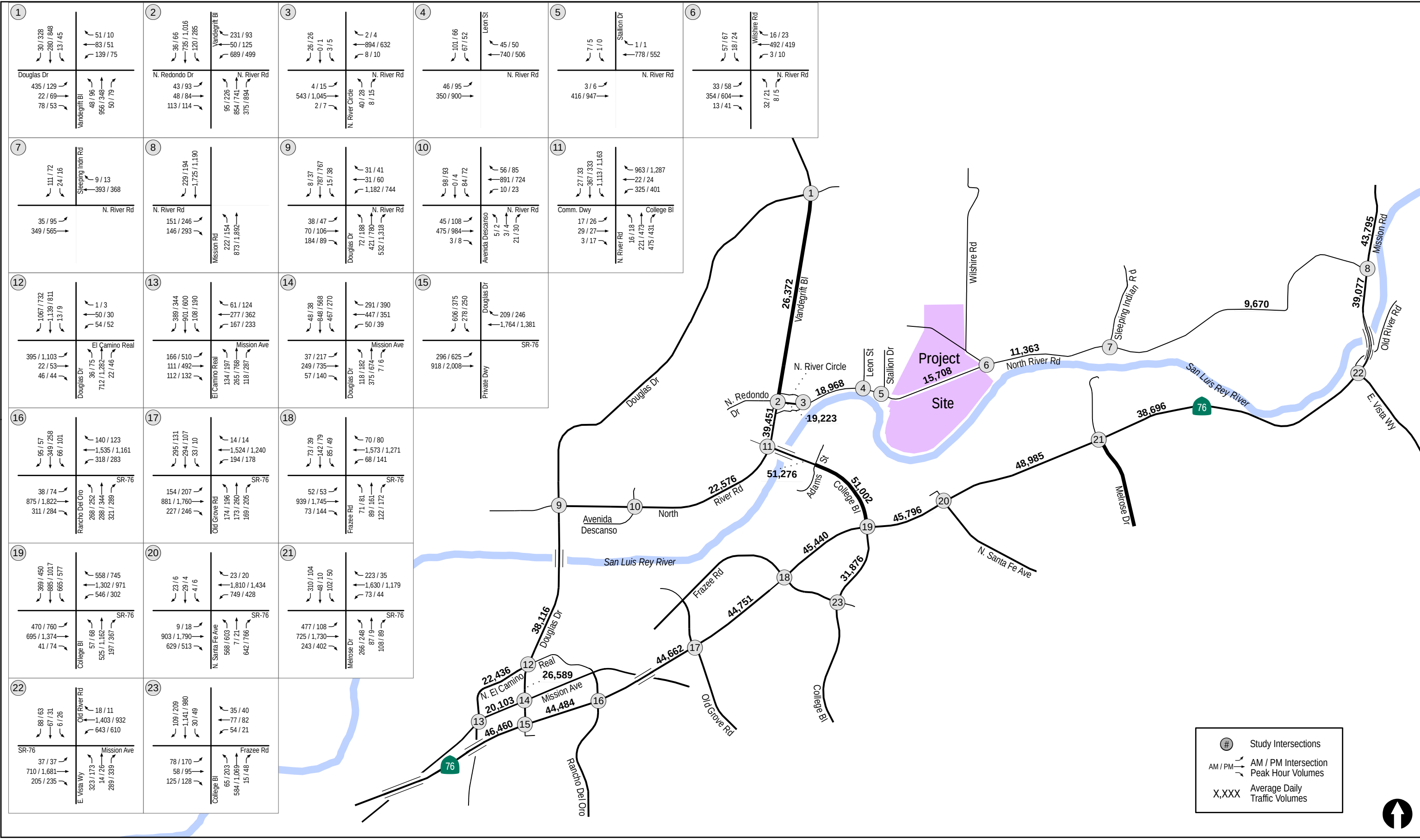
Figure 9-1 shows the locations of the cumulative projects and **Figure 9-2** depicts the cumulative projects traffic volumes. **Figure 9-3** depicts the Existing + Near-Term Cumulative Projects traffic volumes and **Figure 9-4** depicts the Existing + Near-Term Cumulative Projects + Proposed Project traffic volumes.

Appendix G contains the near-term cumulative projects assignment sheets.



Please see Section 9.0 for a detailed list of each Cumulative Project.





10.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following section presents the near-term cumulative analysis of existing study area locations without and with Project traffic.

10.1 Existing + Near-Term Cumulative Projects

10.1.1 Peak Hour Intersection Operations

Table 10–1 summarizes the peak hour intersection operations for the Existing + Near-Term Cumulative Projects condition. As seen in *Table 10–1*, with the addition of cumulative projects traffic, the following intersections are calculated to operate at LOS E or F:

- Intersection #2. Vandegrift Boulevard / N. River Road – LOS E during the PM peak hour
- Intersection #11. N. River Road / College Boulevard – LOS E during the PM peak hour
- Intersection #16. SR-76 / Rancho Del Oro Drive – LOS E/F during the AM/PM peak hours
- Intersection #17. SR-76 / Old Grove Road – LOS E during the AM/PM peak hours
- Intersection #19. SR-76 / College Boulevard – LOS E/F during the AM/PM peak hours
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS E during the AM peak hour

Appendix H contains the peak hour intersection analysis worksheets for the Existing + Near-Term Cumulative Projects condition.

10.1.2 Daily Street Segment Operations

Table 10–2 summarizes the key segment operations in the study area for the Existing + Near-Term Cumulative Projects condition. As seen in *Table 10–2*, with the addition of cumulative projects traffic, the following street segments are calculated to operate at LOS E or F:

- Segment #5. North River Road: N. River Circle to Stallion Drive – LOS E
- Segment #9. Douglas Drive: SR 76 to El Camino Real – LOS E
- Segment #10. Douglas Drive: El Camino Real to N. River Road – LOS E
- Segment #11. College Boulevard: N. River Road to Adams St – LOS F
- Segment #12. College Boulevard: Adams St to SR-76 – LOS E

10.2 Existing + Near-Term Cumulative Projects + Project

10.2.1 Peak Hour Intersection Operations

Table 10–1 summarizes the peak hour intersection operations for Existing + Near-Term Cumulative Projects + Project conditions. As seen in *Table 10–1*, with the addition of cumulative projects and Project traffic, the following intersections are calculated to operate at LOS E or F:

- **Intersection #2. Vandegrift Boulevard / N. River Road – LOS F during the PM peak hour**

- **Intersection #11. N. River Road / College Boulevard – LOS E during the AM/PM peak hours**
- **Intersection #16. SR-76 / Rancho Del Oro Drive – LOS E/F during the AM/PM peak hours**
- Intersection #17. SR-76 / Old Grove Road – LOS E during the AM/PM peak hours
- **Intersection #19. SR-76 / College Boulevard – LOS F during the AM/PM peak hours**
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS E during the AM peak hour

Based on City of Oceanside significance criteria, **four (4) significant impacts** were calculated with the addition of Project traffic at the intersections **bolded** and underlined above since the Project adds greater than 2.0 seconds of delay to each location.

Appendix I contains the peak hour intersection analysis worksheets for the Existing + Near-Term Cumulative Projects + Project condition.

10.2.2 Daily Street Segment Operations

Table 10–2 summarizes the key segment operations in the study area for the Existing + Near-Term Cumulative Projects + Project conditions. As seen in Table 10–2, with the addition of cumulative projects and Project traffic, the following street segments are calculated to operate at LOS E or F:

- **Segment #5. North River Road: N. River Circle to Stallion Drive – LOS F**
- **Segment #6. North River Road: Stallion Drive to Wilshire Road – LOS F**
- **Segment #7. North River Road: Wilshire Road to Sleeping Indian Road – LOSE**
- **Segment #9. Douglas Drive: SR-76 to El Camino Real – LOS E**
- **Segment #10 Douglas Drive: El Camino Real to N. River Road – LOS E**
- **Segment #11. College Boulevard: N. River Road to Adams Street – LOS F**
- **Segment #12. College Boulevard: Adams Street to SR-76 – LOS F**

Based on City of Oceanside significance criteria, **seven (7) significant impacts** were calculated with the addition of Project traffic on the street segments **bolded** and underlined above since the Project increases the V/C by greater than 0.02 at each location.

TABLE 10-1
NEAR-TERM CUMULATIVE INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Delay Δ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Vandegrift Blvd / Douglas Dr	Signal	AM PM	18.5 17.6	B B	18.5 17.7	B B	0.0 0.1	No
2. Vandegrift Blvd / N. River Rd	Signal	AM PM	25.4 56.8	C E	38.3 148.1	D F	12.9 91.3	Yes
3. N. River Rd / North River Circle	Signal	AM PM	10.0 10.1	A B	10.2 10.9	B B	0.2 0.8	No
4. N. River Rd / Leon St	MSSC ^d	AM PM	16.5 16.7	C C	29.1 33.4	D D	12.6 16.7	No
5. N. River Rd / Stallion Dr	MSSC	AM PM	12.2 10.5	B B	16.6 12.3	C B	4.4 1.8	No
6. N. River Rd / Wilshire Rd	MSSC/ Roundabout. ^e	AM PM	16.4 13.1	C B	6.6 8.4	A A	(9.8) (4.7)	No
7. N. River Rd / Sleeping Indian Rd	MSSC	AM PM	13.2 13.5	B B	14.5 15.8	B C	1.3 2.3	No
8. N. River Rd / SR-76 (Mission Rd)	Signal	AM PM	31.0 23.8	C C	36.7 30.8	D C	5.7 7.0	No
9. Douglas Dr / N. River Rd	Signal	AM PM	42.7 27.9	D C	46.0 29.1	D C	3.3 1.2	No
10. N. River Rd / Avenida Descanso	Signal	AM PM	17.9 10.6	B B	18.7 10.6	B B	0.8 0.0	No
11. N. River Rd / College Blvd	Signal	AM PM	40.9 59.2	D E	64.3 79.3	E E	23.4 20.1	Yes
12. Douglas Dr / El Camino Real	Signal	AM PM	18.5 40.1	B D	19.8 44.1	B D	1.3 4.0	No
13. Mission Ave / El Camino Real	Signal	AM PM	22.0 35.8	C D	22.2 36.4	C D	0.2 0.6	No
14. Mission Ave / Douglas Dr	Signal	AM PM	34.3 39.8	C D	35.6 42.7	D D	1.3 2.9	No
15. SR-76 / Douglas Dr	Signal	AM PM	35.9 30.0	D C	37.4 33.8	D C	1.5 3.8	No
16. SR-76 / Rancho Del Oro Dr	Signal	AM PM	72.1 117.1	E F	77.1 123.7	E F	5.0 6.6	Yes
Continued on Next Page								

TABLE 10-1
NEAR-TERM CUMULATIVE INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Delay Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
Continued from Previous Page								
17. SR-76 / Old Grove Rd	Signal	AM	67.1	E	67.8	E	0.7	No
		PM	56.7	E	57.2	E	0.5	
18. SR-76 / Frazee Rd	Signal	AM	35.7	D	36.2	D	0.5	No
		PM	44.1	D	45.6	D	1.5	
19. SR-76 / College Blvd	Signal	AM	74.3	E	82.0	F	7.7	Yes
		PM	140.4	F	163.2	F	22.8	
20. SR-76 / N. Santa Fe Ave	Signal	AM	106.4	F	106.5	F	0.1	No
		PM	115.8	F	116.7	F	0.9	
21. SR-76 / Melrose Dr	Signal	AM	57.5	E	57.7	E	0.2	No
		PM	29.1	C	29.3	C	0.2	
22. SR-76 / E. Vista Way	Signal	AM	35.4	D	36.0	D	0.6	No
		PM	39.5	D	41.3	D	1.8	
23. College Blvd / Frazee Rd	Signal	AM	17.6	B	18.2	B	0.6	No
		PM	22.0	C	22.8	C	0.8	

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Δ denotes the increase in delay due to Project.
- d. MSSC = Minor Street Stop-Controlled intersection. Minor street left-turn delay reported.
- e. Delay decrease due to installation of roundabout at project access intersection as a project feature. See Section 13.0 for additional details.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and **shading** represents a significant direct impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 10-2
NEAR-TERM CUMULATIVE STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
Vandegrift Boulevard									
1. North River Rd to Douglas Dr	45,000	25,750	C	0.572	26,372	C	0.586	0.014	No
North River Road									
2. Douglas Dr to College Blvd	40,000	21,410	C	0.535	22,576	C	0.564	0.029	No
3. College Blvd to Vandegrift Blvd	45,000	34,400	C	0.764	39,451	D	0.877	0.113	No
4. Vandegrift Blvd to N. River Cir	40,000	13,550	A	0.339	19,223	B	0.481	0.142	No
5. N. River Cir to Stallion Dr	15,000	13,140	E	0.876	18,968	F	1.265	0.389	Yes
6. Stallion Dr to Wilshire Rd	12,500 ^f	9,880	D	0.790	15,708	F	1.257	0.467	Yes
7. Wilshire Rd to Sleeping Indian Rd	12,500 ^f	9,420	D	0.754	11,363	E	0.909	0.155	Yes
8. Sleeping Indian Rd to SR-76	12,500 ^f	7,960	C	0.637	9,670	D	0.774	0.137	No
Douglas Drive									
9. SR-76 to El Camino Real	30,000	25,890	E	0.863	26,589	E	0.886	0.023	Yes
10. El Camino Real to N. River Rd	40,000	36,950	E	0.924	38,116	E	0.953	0.029	Yes
College Boulevard									
11. N. River Rd to Adams St	40,000	47,390	F	1.185	51,276	F	1.282	0.097	Yes
12. Adams St to SR-76	50,000	47,350	E	0.947	51,002	F	1.020	0.073	Yes
13. SR-76 to Frazee Rd	40,000	30,400	D	0.760	31,876	D	0.797	0.037	No
El Camino Real									
14. Mission Ave to Douglas Dr	40,000	21,970	C	0.549	22,436	C	0.561	0.012	No
Mission Avenue									
15. El Camino Real to Douglas Dr	40,000	19,170	B	0.479	20,103	B	0.503	0.024	No
(Continued on Next Page)									

TABLE 10-2
NEAR-TERM CUMULATIVE STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E) ^a	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
(Continued from Previous Page)									
State Route 76									
16. Foussat Rd to Douglas Dr	60,000	45,390	C	0.757	46,460	C	0.774	0.033	No
17. Douglas Dr to Rancho Del Oro Dr	60,000	43,860	C	0.731	44,484	C	0.741	0.025	No
18. Rancho Del Oro Dr to Old Grove Rd	60,000	43,860	C	0.731	44,662	C	0.744	0.028	No
19. Old Grove Rd to Frazee Rd	60,000	43,860	C	0.731	44,751	C	0.746	0.029	No
20. Frazee Rd to College Blvd	60,000	44,370	C	0.740	45,440	C	0.757	0.032	No
21. College Blvd to N Santa Fe Ave	60,000	44,370	C	0.740	45,796	C	0.763	0.038	No
22. N Santa Fe Ave to Melrose Dr	60,000	48,450	C	0.808	48,985	C	0.816	0.025	No
23. Melrose Dr to E Vista Way	60,000	38,250	C	0.638	38,696	C	0.645	0.020	No
24. E Vista Way to North River Rd	60,000	37,740	C	0.629	39,077	C	0.651	0.035	No
25. N. River Rd to Via Montellano	60,000	43,350	C	0.723	44,509	C	0.742	0.033	No

Footnotes:

- a. Capacities based on City of Oceanside Roadway Classification & LOS table (See Appendix B).
- b. Average Daily Traffic.
- c. Level of Service.
- d. Volume to Capacity ratio.
- e. Δ denotes a Project-induced increase in the Volume to Capacity ratio.
- f. Given this 3.5-mile stretch of North River Road contains no traffic signals and has no property fronting the roadway, a modified LOS E capacity of 12,500 ADT was used in the analysis to account for the reduced friction along the roadway.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and **shading** indicates a significant impact.

11.0 YEAR 2035 MASTER TRANSPORTATION ROADWAY PLAN CONDITIONS

11.1 Year 2035 Master Transportation Roadway Plan Network Conditions

The Year 2035 network was developed as part of the 2030 Master Transportation Roadway Plan outlined in the Oceanside Circulation Element. The network changes described in the Master Transportation Roadway Plan provided in the Oceanside Circulation Element are included in the buildout analysis for roadway segments. The exception to this is that SR-76 remains a four-lane Expressway, as adequate funding is not identified to expand the roadway to six lanes. In addition, intersections are analyzed using existing geometries. The 2030 Master Transportation Roadway Plan represents the planned roadway system along with the classifications of those streets. There are several pieces of the transportation network that have changed from existing conditions to the 2030 Master Transportation Roadway Plan. The major changes to the circulation network included in the 2030 Master Transportation Roadway Plan and those assumed in the Year 2035 analysis are the following:

- SR-76 is four lanes (six-lane widening not planned or funded per Caltrans)
- Rancho Del Oro Road at SR-78 is an interchange
- College Boulevard is six-lanes between Old Grove Road and Vista Way
- College Boulevard is six-lanes over the San Luis Rey Bridge
- North River Road is four lanes between Vandegrift Boulevard to the City limits
- Pala Road is connected between Los Arbolitos Boulevard and Foussat Road
- Melrose Drive is connected between North River Road and SR-76
- Melrose Drive is connected between Spur Avenue and N. Santa Fe Avenue

11.1.1 North River Road General Plan Amendment

As previously mentioned, North River Road is classified on the Master Transportation Roadway Plan as a Four-Lane Major Road from Vandegrift Boulevard to the future Melrose Avenue extension location (approaching Sleeping Indian Road) and a Four-Lane Secondary Collector with TWLTL from the extension to the City Limits. At these classifications, the roadway would have an LOS E design capacity of 30,000 to 40,000 ADT. The Project proposes improvements to North River Road along the Project frontage (see *Section 13.0* for additional details). The Project will dedicate right-of-way along its frontage to Four-Lane Secondary Collector standards to accommodate an enhanced parkway for pedestrians and on-street bicycle facilities, but only two vehicular lanes (one in each direction) separated by a raised median are proposed. The roadway would be constructed to provide two 2021-foot travel lanes (1412-foot vehicle lanes with 5-foot bike lanes and 4-foot bike lane buffers) with an 1618-foot center median. ~~Ten-foot parkways would be provided on both sides of the roadway with an 8-foot naturally paved pedestrian path on one side of the road.~~

Approaching Sleeping Indian Road, east of the Project site, the roadway would also remain two lanes and an eastbound left-turn pocket is proposed at the intersection of North River Road at Sleeping Indian Road to provide a refuge for left-turning vehicles, thus improving the flow of

eastbound through traffic and reducing the potential for vehicular conflict due to the slowing of eastbound traffic behind a vehicle turning left onto Sleeping Indian Road.

The analysis of the intersections provided in this report along the segment of North River Road from Stallion Drive to Sleeping Indian Road show that with the proposed Project improvements, LOS D or better operations are calculated in the peak hours along this segment.

Given the above, the Project proposes a General Plan Amendment to reclassify North River Road from Stallion Drive to Sleeping Indian Road as a Four-Lane Secondary Collector.

Figure 11–1 depicts the Year 2035 Conditions Diagram for roadway segments within the study area with the Master Transportation Roadway Plan network. **Table 11–1** displays the Master Transportation Roadway Plan roadway classifications for study area street segments.

TABLE 11-1
MASTER TRANSPORTATION ROADWAY PLAN STREET SEGMENT CLASSIFICATIONS

Street Segments	Currently Built As	Master Transportation Roadway Plan Classification ^a
Vandegrift Boulevard		
1. North River Rd to Douglas Dr	5-Ln Major Arterial	5-Ln Major Arterial
North River Road		
2. Douglas Dr to College Blvd	4-Ln Major Arterial	4-Ln Major Arterial
3. College Blvd to Vandegrift Blvd	5-Ln Major Arterial	5-Ln Major Arterial
4. Vandegrift Blvd to North River Cir	4-Ln Major Arterial	4-Ln Major Arterial
5. North River Cir to Stallion Dr	2-Ln Collector w/ TWLTL	4-Ln Major Arterial
6. Stallion Dr to Wilshire Rd	2-Ln Collector	4-Ln Major Arterial <i>General Plan Amendment: 4-Ln Secondary Collector</i>
7. Wilshire Rd to Sleeping Indian Rd	2-Ln Collector	4-Ln Major Arterial <i>General Plan Amendment: 4-Ln Secondary Collector</i>
8. Sleeping Indian Rd to SR-76	2-Ln Collector	4-Ln Secondary Collector w/ TWLTL
Douglas Drive		
9. SR-76 to El Camino Real	4-Ln Secondary Collector	4-Ln Major Arterial
10. El Camino Real to N. River Rd	4-Ln Major Arterial	6-Ln Major Arterial
College Boulevard		
11. N. River Rd to Adams St	4-Ln Major Arterial	6-Ln Major Arterial
12. Adams St to SR-76	6-Ln Major Arterial	6-Ln Major Arterial
13. SR-76 to Frazee Rd	4-Ln Major Arterial	4-Ln Major Arterial
El Camino Real		
14. Mission Ave to Douglas Dr	4-Ln Major Arterial	4-Ln Major Arterial
Mission Avenue		
15. El Camino Real to Douglas DR	4-Ln Major Arterial	4-Ln Major Arterial
<i>(Continued on Next Page)</i>		

TABLE 11-1
MASTER TRANSPORTATION ROADWAY PLAN STREET SEGMENT CLASSIFICATIONS

Street Segments	Currently Built As	Master Transportation Roadway Plan Classification ^a
<i>(Continued from Previous Page)</i>		
SR-76 ^b		
16. Foussat Rd to Douglas Dr	4-Ln Expressway	4-Ln Expressway
17. Douglas Dr to Rancho Del Oro Dr	4-Ln Expressway	4-Ln Expressway
18. Rancho Del Oro Dr to Old Grove Rd	4-Ln Expressway	4-Ln Expressway
19. Old Grove Rd to Frazee Rd	4-Ln Expressway	4-Ln Expressway
20. Frazee Rd to College Blvd	4-Ln Expressway	4-Ln Expressway
21. College Blvd to N Santa Fe Ave	4-Ln Expressway	4-Ln Expressway
22. N Santa Fe Ave to Melrose Dr	4-Ln Expressway	4-Ln Expressway
23. Melrose Dr to E Vista Way	4-Ln Expressway	4-Ln Expressway
24. E Vista Way to North River Rd	4-Ln Expressway	4-Ln Expressway
25. North River Rd to Via Montellano	4-Ln Expressway	4-Ln Expressway

Footnotes:

- a. Classifications based on City of Oceanside *General Plan Circulation Element Master Transportation Roadway Plan*, September 2012.
- b. SR-76 assumed to remain a four-lane Expressway since Caltrans has no future plans to widen this roadway nor is there funding identified to complete the widening.

11.2 Year 2035 Traffic Volumes

A review of the Buildout (Year 2030) peak hour and daily traffic volumes from the City of Oceanside's Master Transportation Roadway Plan Traffic Impact Analysis Report (April 2012) was conducted. As previously mentioned, the City's Master Transportation Roadway Plan assumed SR-76 as a six-lane expressway which results in higher demand for this facility, thus reducing trips along City streets. . Therefore, in discussions with City staff, it was decided to use the SANDAG Series 12 Year 2035 forecast traffic model given SR-76 is modeled as a four-lane expressway.

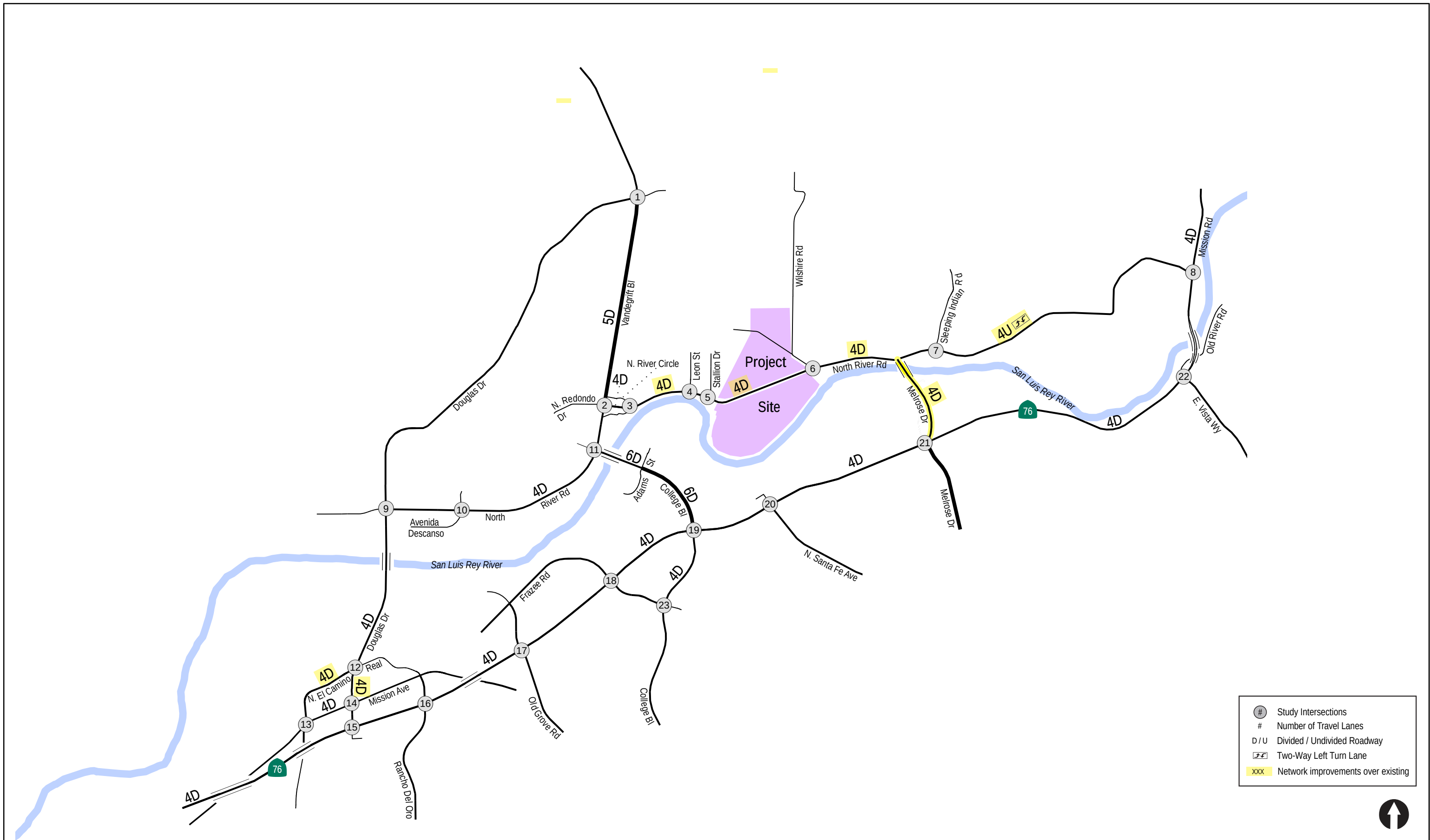
The peak hour turning movement volumes at an intersection were estimated from future ADT volumes using the relationship between existing peak hour turning movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future. Additional consideration was given to new network connections within the City.

As previously mentioned in *Section 7.2* of this report, the future connection of Melrose Drive between North River Road and SR-76 and Spur Avenue and S. Santa Fe Avenue is in close proximity to the Project site. The connection of Melrose Drive between its current terminus, north of SR-76 to North River Road would have a considerable effect on Project trip distribution. This connection would allow a substantial share of Project-related traffic to use Melrose Drive to access SR-76 and the regional street

system. With the connection of Melrose Drive, it would be expected that Project trips originating from and destined to the east would reroute along North River Road. Trips to/from east on North River Road to E. Vista Way and Mission Road would reroute to use Melrose Drive. Trips on College Boulevard would reroute to Melrose Drive to reach Melrose Drive (south), N. Santa Fe Avenue and College Boulevard (south). With the changes in distribution on North River Road with the connection of Melrose Drive, 61% of trips were distributed to/from the west and 39% to/from the east (a shift from the 75/25 split without Melrose Drive).

It should be noted that the Oceanside General Plan Land Use allows for the development of 92 residential units within the current Project boundary. Applying the SANDAG rate for “estate residential” where lot size is greater than one (1) to two (2) DU per acre, the adopted General Plan Land Use would be expected to generate 1,104 ADT in the future. A review of the SANDAG Series 12 Year 2035 traffic model shows approximately 1,800 ADT generated by the site and assigned to the street system. Therefore, the Year 2035 Without Project traffic volumes are representative of the allowed General Plan Land Use designation of 92 DU.

For purposes of providing a conservative analysis, the site was assuming to be vacant land in the future and the total site generation of 7,921 ADT by the proposed Project from *Table 7-1* provided earlier in this report was added to the baseline Year 2035 traffic volumes (already assuming the trips generated by 92 DU) to arrive at Year 2035 With Project traffic volumes. **Figure 11-2** depicts the Year 2035 Without Project traffic volumes. **Figure 11-3** depicts the Year 2035 Project Distribution (assuming buildout of the Master Transportation Roadway Plan). **Figure 11-4** displays the Year 2035 Project traffic volumes and **Figure 11-5** displays the Year 2035 With Project traffic volumes.



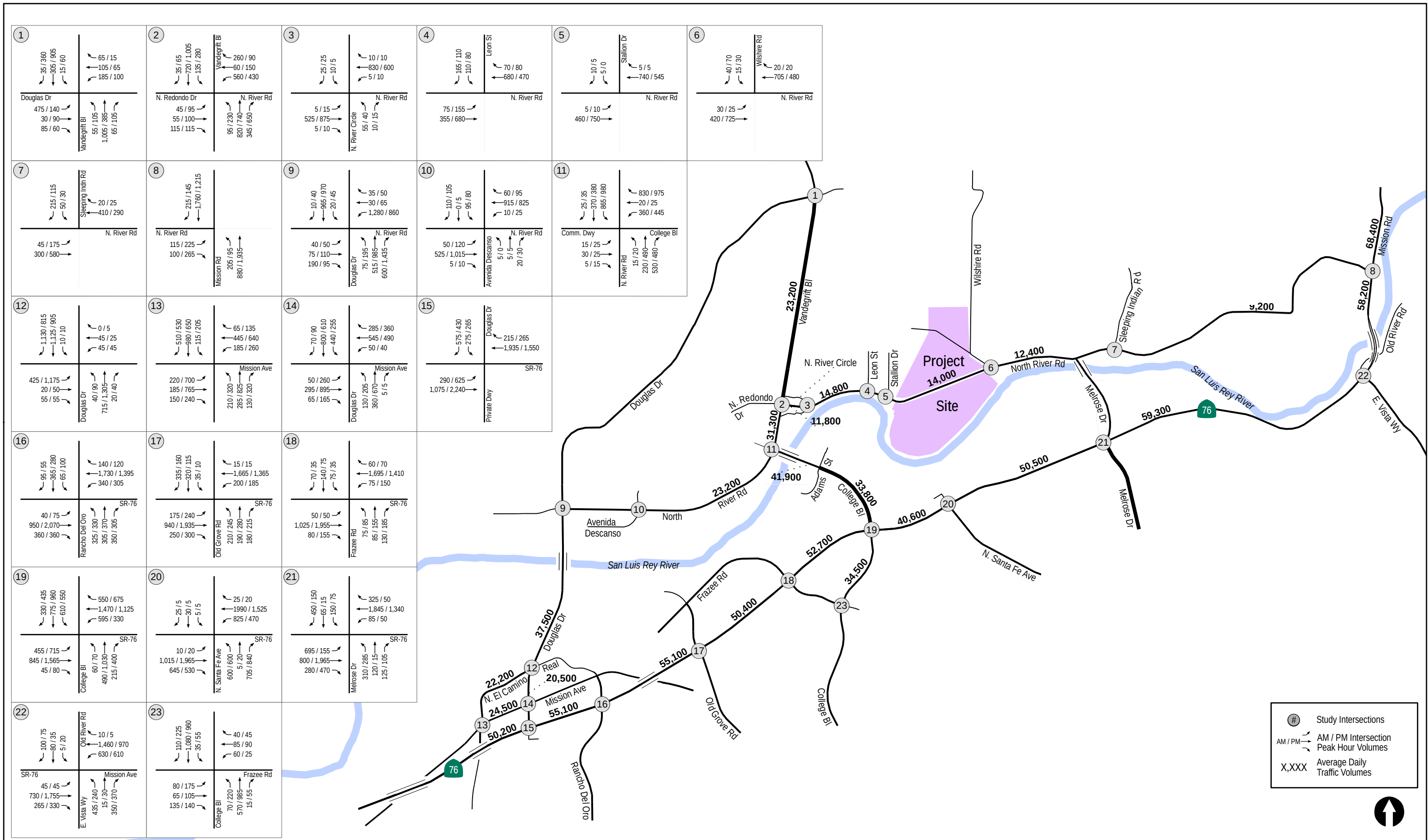


Figure 11-2

Year 2035 Without Project Traffic Volumes

NORTH RIVER FARMS

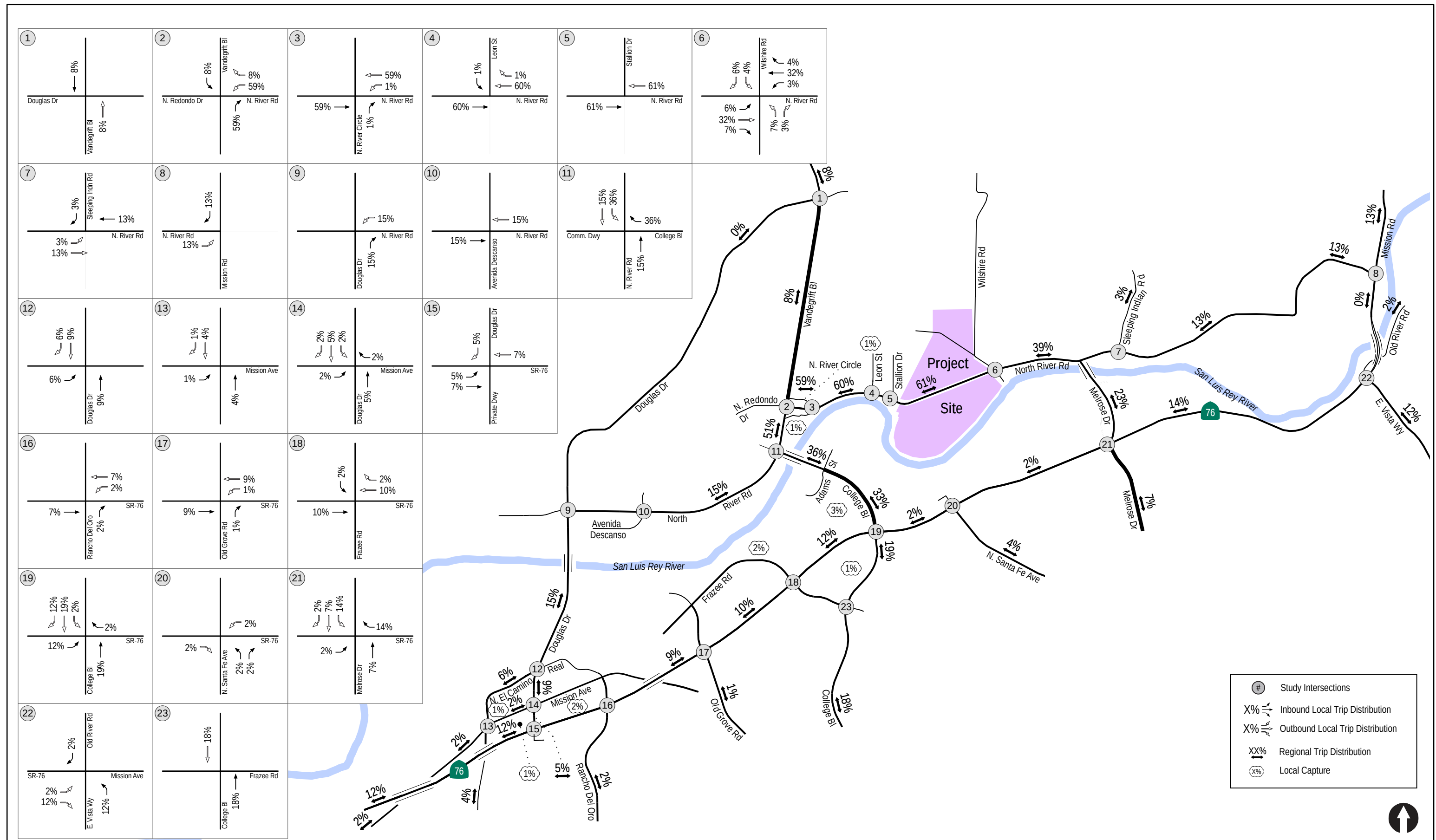
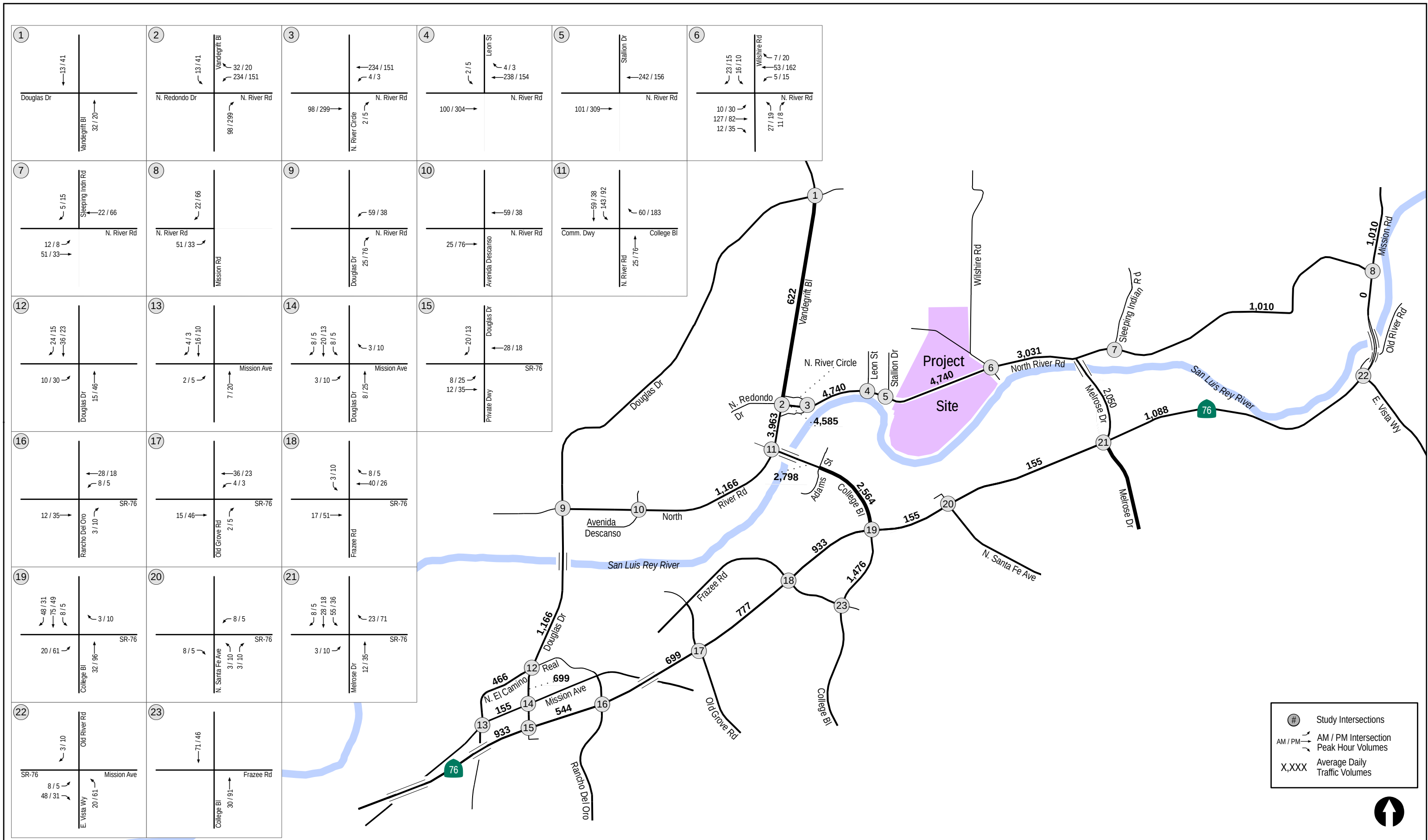


Figure 11-3

Year 2035 Project Traffic Distribution



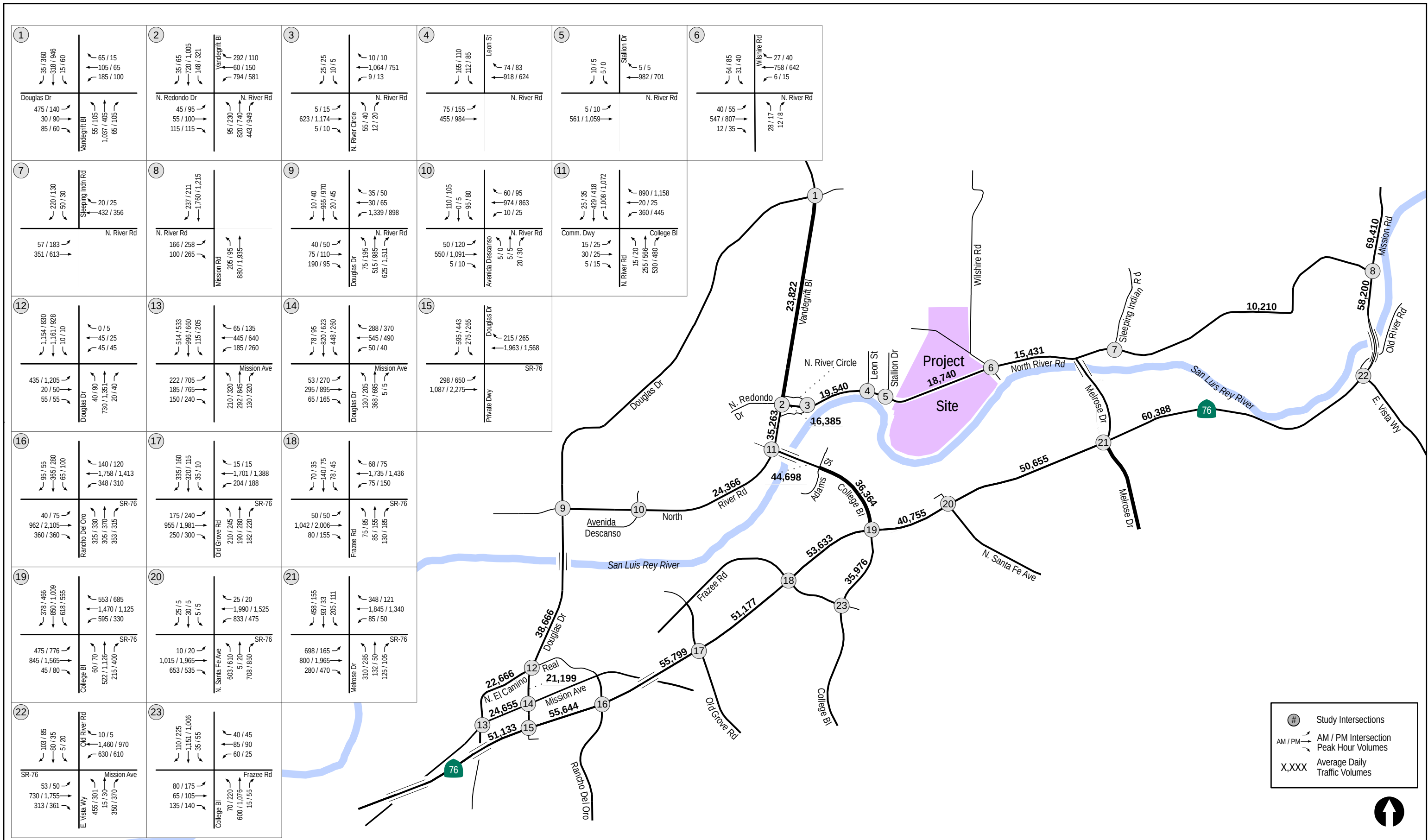


Figure 11-5

Year 2035 With Project Traffic Volumes

NORTH RIVER FARMS

12.0 ANALYSIS OF YEAR 2035 MASTER TRANSPORTATION ROADWAY PLAN SCENARIOS

This section provides an analysis of the Year 2035 assuming buildout of the Master Transportation Roadway Plan.

12.1 Year 2035 Without Project

12.1.1 Intersection Analysis

Table 12–1 summarizes the peak hour intersection operations for the Year 2035 Without Project (Master Transportation Roadway Plan) condition. As seen in *Table 12–1*, the following intersections are calculated to operate at LOS E or F:

- Intersection #2. Vandegrift Boulevard / N. River Road – LOS E during the PM peak hour
- Intersection #4. N. River Road / Leon Street – LOS F during the AM/PM peak hours
- Intersection #9. Douglas Drive / N. River Road – LOS E during the AM peak hour
- Intersection #11. N. River Road / College Boulevard – LOS E during the PM peak hour
- Intersection #13. Mission Ave / El Camino Real – LOS E during the PM peak hour
- Intersection #16. SR-76 / Rancho Del Oro Drive – LOS F during the AM/PM peak hours
- Intersection #17. SR-76 / Old Grove Road – LOS F/E during the AM/PM peak hours
- Intersection #18. SR-76 / Frazee Road – LOS E during the PM peak hour
- Intersection #19. SR-76 / College Boulevard – LOS F during the AM/PM peak hours
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS F during the AM peak hour

Appendix J contains the peak hour intersection analysis worksheets for the Year 2035 Without Project (Master Transportation Roadway Plan) condition.

12.1.2 Segment Operations

Table 12–2 summarizes the key segment operations in the study area for the Year 2035 Without Project (Master Transportation Roadway Plan) condition. As seen in *Table 12–2*, the following street segments are calculated to operate at LOS E or F:

- Segment #17. SR-76: Douglas Drive to Rancho Del Oro Drive – LOS F
- Segment #18. SR-76: Rancho Del Oro Drive to Old Grove Road – LOS E
- Segment #23. SR-76: Melrose Drive to E. Vista Way – LOS E
- Segment #24. SR-76: E. Vista Way to N. River Road – LOS E
- Segment #25. SR-76: N. River Road to Villa Montellano – LOS F

12.2 Year 2035 With Project (Master Transportation Roadway Plan)

12.2.1 Intersection Analysis

Table 12–1 summarizes the peak hour intersection operations for the Year 2035 With Project (Master Transportation Roadway Plan) condition. As seen in Table 12–1, with the net increase in traffic due to the change in land use, the following intersections are calculated to operate at LOS E or F:

- **Intersection #2. Vandegrift Boulevard / N. River Road – LOS F during the PM peak hour**
- **Intersection #4. N. River Road / Leon Street – LOS F during the AM/PM peak hours**
- **Intersection #9. Douglas Drive / N. River Road – LOS E during the AM peak hour**
- **Intersection #11. N. River Road / College Boulevard – LOS E during the AM/PM peak hours**
- Intersection #13. Mission Ave / El Camino Real – LOS E during the PM peak hour
- **Intersection #16. SR-76 / Rancho Del Oro Drive – LOS F during the AM/PM peak hours**
- **Intersection #17. SR-76 / Old Grove Road – LOS F during the AM/PM peak hours**
- **Intersection #18. SR-76 / Frazee Road – LOS E during the PM peak hour**
- **Intersection #19. SR-76 / College Boulevard – LOS F during the AM/PM peak hours**
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS F during the AM peak hour

Based on City of Oceanside significance criteria, **eight (8) significant impacts** were calculated with the addition of Project traffic at the intersections **bolded** and underlined above since the Project increases the delay by greater than 2.0 seconds at each location.

Appendix K contains the peak hour intersection analysis worksheets for the Year 2035 With Project condition.

12.2.2 Segment Operations

Table 12–2 summarizes the key segment operations in the study area for the Year 2035 With Project (Master Transportation Roadway Plan) condition. As seen in Table 12–2, with the net increase in traffic due to the change in land use, the following street segments are calculated to operate at LOS E or F:

- **Segment #13. College Boulevard: SR-76 to Frazee Road – LOS E**
- Segment #17. SR-76: Douglas Drive to Rancho Del Oro Drive – LOS E
- Segment #18. SR-76: Rancho Del Oro Drive to Old Grove Road – LOS E
- Segment #23. SR-76: Melrose Drive to E. Vista Way – LOS F
- Segment #24. SR-76: E. Vista Way to N. River Road – LOS E

- Segment #25. SR-76: N. River Road to Villa Montellano – LOS F

Based on City of Oceanside significance criteria, **one (1) significant impact** was calculated with the addition of Project traffic on the study area street segment **bolded** and **underlined** above since the Project degrades the LOS to unacceptable levels or increases the V/C by greater than 0.02 at each location already operating at LOS E or F.

TABLE 12-1
YEAR 2035 INTERSECTION OPERATIONS
(MASTER TRANSPORTATION ROADWAY PLAN)

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Delay Δ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Vandegrift Blvd / Douglas Dr	Signal	AM PM	19.8 20.0	B B	19.8 20.0	B B	0.0 0.0	No
2. Vandegrift Blvd / N. River Rd	Signal	AM PM	32.0 78.5	C E	52.5 166.0	D F	20.5 87.5	Yes
3. N. River Rd / North River Circle	Signal	AM PM	10.7 10.5	B B	12.0 12.3	B B	1.3 1.8	No
4. N. River Rd / Leon St	MSSC ^d	AM PM	55.5 59.9	F F	165.5 423.1	F F	110.0 363.2	Yes
5. N. River Rd / Stallion Dr	MSSC	AM PM	19.0 12.2	C B	27.8 14.0	D B	8.8 1.8	No
6. N. River Rd / Wilshire Rd	MSSC/ Roundabout ^e	AM PM	28.6 35.0	D D	10.5 13.3	B B	(18.1) (21.7)	No
7. N. River Rd / Sleeping Indian Rd	MSSC	AM PM	21.0 22.1	C C	24.5 28.3	C D	3.5 6.2	No
8. N. River Rd / SR-76 (Mission Rd)	Signal	AM PM	27.1 24.9	C C	30.2 25.1	C C	3.1 0.2	No
9. Douglas Dr / N. River Rd	Signal	AM PM	64.6 39.3	E D	69.7 40.8	E D	5.1 1.5	Yes
10. N. River Rd / Avenida Descanso	Signal	AM PM	19.6 11.2	B B	20.7 11.6	C B	1.1 0.4	No
11. N. River Rd / College Blvd	Signal	AM PM	41.9 57.1	D E	57.6 68.4	E E	15.7 11.3	Yes
12. Douglas Dr / El Camino Real	Signal	AM PM	16.6 48.2	B D	17.1 53.3	B D	0.5 5.1	No
13. Mission Ave / El Camino Real	Signal	AM PM	33.9 72.5	C E	34.3 73.3	C E	0.4 0.8	No
14. Mission Ave / Douglas Dr	Signal	AM PM	36.4 45.3	D D	37.8 48.3	D D	1.4 3.0	No
15. SR-76 / Douglas Dr	Signal	AM PM	36.7 37.1	D D	38.1 41.5	D D	1.4 4.4	No
16. SR-76 / Rancho Del Oro Dr	Signal	AM PM	118.3 167.0	F F	124.3 174.0	F F	6.0 7.0	Yes
Continued on Next Page								

TABLE 12-1
YEAR 2035 INTERSECTION OPERATIONS
(MASTER TRANSPORTATION ROADWAY PLAN)

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Delay Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
Continued from Previous Page								
17. SR-76 / Old Grove Rd	Signal	AM PM	97.1 75.5	F E	101.5 81.1	F F	4.4 5.6	Yes
18. SR-76 / Frazee Rd	Signal	AM PM	38.2 64.1	D E	39.2 71.9	D E	1.0 7.8	Yes
19. SR-76 / College Blvd	Signal	AM PM	84.7 158.8	F F	88.7 172.1	F F	4.0 13.3	Yes
20. SR-76 / N. Santa Fe Ave	Signal	AM PM	128.1 143.1	F F	129.2 144.7	F F	1.1 1.6	No
21. SR-76 / Melrose Dr	Signal	AM PM	123.6 35.9	F D	124.1 36.8	F D	0.5 0.9	No
22. SR-76 / E. Vista Way	Signal	AM PM	41.5 44.7	D D	43.2 46.6	D D	1.7 1.9	No
23. College Blvd / Frazee Rd	Signal	AM PM	18.7 23.5	B C	19.3 24.1	B C	0.6 0.6	No

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Δ denotes the increase in delay due to Project.
- d. MSSC = Minor Street Stop-Controlled intersection. Minor street left-turn delay reported.
- e. Delay decrease due to installation of roundabout at Project access intersection as a Project feature. See Section 14.5.1 for additional details.

General Notes:

1. Sig = Significant impact, yes or no.
2. **Bold** typeface and **shading** represents a significant direct impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 12-2
YEAR 2035 STREET SEGMENT OPERATIONS
(MASTER TRANSPORTATION ROADWAY PLAN)

Street Segment	MTP Capacity (LOS E) ^a	Year 2035 Without Project			Year 2035 With Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d		
Vandegrift Boulevard									
1. North River Rd to Douglas Dr	45,000	23,200	B	0.516	23,822	B	0.529	0.013	No
North River Road									
2. Douglas Dr to College Blvd	40,000	23,200	C	0.580	24,366	C	0.609	0.029	No
3. College Blvd to Vandegrift Blvd	45,000	31,300	C	0.696	35,263	D	0.784	0.088	No
4. Vandegrift Blvd to N. River Cir	40,000	11,800	A	0.295	16,385	B	0.410	0.115	No
5. N. River Cir to Stallion Dr	40,000	14,800	A	0.370	19,540	B	0.489	0.119	No
6. Stallion Dr to Wilshire Rd	40,000	14,000	A	0.350	18,740	B	0.469	0.119	No
7. Wilshire Rd to Sleeping Indian Rd	40,000	12,400	A	0.310	15,431	B	0.386	0.076	No
8. Sleeping Indian Rd to SR-76	30,000	9,200	A	0.307	10,210	B	0.340	0.033	No
Douglas Drive									
9. SR-76 to El Camino Real	40,000	20,500	B	0.513	21,199	C	0.530	0.017	No
10. El Camino Real to N. River Rd	50,000	37,500	C	0.750	38,666	C	0.773	0.023	No
College Boulevard									
11. N. River Rd to Adams St	50,000	41,900	D	0.838	44,698	D	0.894	0.056	No
12. Adams St to SR-76	50,000	33,800	C	0.676	36,364	C	0.727	0.051	No
13. SR-76 to Frazee Rd	40,000	34,500	D	0.863	35,976	E	0.899	0.036	Yes
El Camino Real									
14. Mission Ave to Douglas Dr	40,000	22,200	C	0.555	22,666	C	0.567	0.012	No
Mission Avenue									
15. El Camino Real to Douglas Dr	40,000	24,500	C	0.613	24,655	C	0.616	0.003	No
(Continued on Next Page)									

TABLE 12-2
YEAR 2035 STREET SEGMENT OPERATIONS
(MASTER TRANSPORTATION ROADWAY PLAN)

Street Segment	MTP Capacity (LOS E) ^a	Year 2035 Without Project			Year 2035 With Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d		
(Continued from Previous Page)									
State Route 76									
16. Foussat Rd to Douglas Dr	60,000	50,200	D	0.837	51,133	D	0.852	0.016	No
17. Douglas Dr to Rancho Del Oro Dr	60,000	55,100	E	0.918	55,644	E	0.927	0.009	No
18. Rancho Del Oro Dr to Old Grove Rd	60,000	55,100	E	0.918	55,799	E	0.930	0.012	No
19. Old Grove Rd to Frazee Rd	60,000	50,400	D	0.840	51,177	D	0.853	0.013	No
20. Frazee Rd to College Blvd	60,000	52,700	D	0.878	53,633	D	0.894	0.016	No
21. College Blvd to N Santa Fe Ave	60,000	40,600	C	0.677	40,755	C	0.679	0.003	No
22. N Santa Fe Ave to Melrose Dr	60,000	50,500	D	0.842	50,655	D	0.844	0.003	No
23. Melrose Dr to E Vista Way	60,000	59,300	E	0.988	60,388	F	1.006	0.018	No
24. E Vista Way to North River Rd	60,000	58,200	E	0.970	58,200	E	0.970	0.000	No
25. N. River Rd to Via Montellano	60,000	68,400	F	1.140	69,410	F	1.157	0.017	No

Footnotes:

- a. Capacities based on City of Oceanside Roadway Classification & LOS table (See *Appendix B*). Future classifications taken from the City of Oceanside Master Transportation Roadway Plan.
- b. Average Daily Traffic.
- c. Level of Service.
- d. Volume to Capacity ratio.
- e. Δ denotes a Project-induced increase in the Volume to Capacity ratio.

General Notes:

1. MTP = Master Plan Transportation
2. Sig = Significant impact, yes or no.
3. **Bold** typeface and **shading** indicates a significant impact.

13.0 ACCESS ASSESSMENT AND ON-SITE CIRCULATION

13.1 Access Assessment

13.1.1 Network Conditions

North River Road

The Project proposes improvements to North River Road along the Project frontage. The Project will dedicate right-of-way along its frontage to Four-Lane Secondary Collector standards to accommodate an enhanced parkway for pedestrians and on-street bicycle facilities, but only two vehicular lanes (one in each direction) separated by a TWLTL are needed to accommodate Project traffic. The roadway would be constructed to provide two 20-foot travel lanes (11-foot vehicle lanes with 5-foot bike lanes and 4-foot bike lane buffers) with a 16-foot center median. Ten-foot parkways would be provided on both sides of the roadway with an 8-foot naturally paved pedestrian path on one side of the road. An ADT threshold for North River Road has been included in the mitigation measures indicating the amount volume at which four lanes would be needed along the Project frontage.

Three (3) entry/exit points are proposed along North River Road, accessing the northern and southern portions of the Project site: A) North River Road/ Western Access; B) North River Road/ Main Access; and C) North River Road/ Eastern Access/Wilshire Road. Access A and C are being proposed as four-legged single-lane roundabouts, while a signal is proposed at the main Access B. Wilshire Road is proposed to be improved to be realigned to intersect North River Road at a 90-degree angle.

Roundabouts

The roundabouts along the Project frontage are proposed to be designed with 150-foot diameters and 55-foot radii. With the installation of roundabouts at Access A and C, it is recommended that they provide one 20-foot travel lane in each direction through the roundabout with a landscaped median centered in the middle. It should be noted that in the Year 2035 (Without Melrose Drive Extension), the westerly roundabout may require two lanes in each direction. Shown later on in *Section 14.5.1*, the potential for this change would occur should the total traffic volume on North River Road exceed 21,000 ADT. However, with the connection of the Melrose Drive extension per the adopted Master Transportation Roadway Plan, this roundabout operates at LOS C.

Bike lanes would terminate at the entrance to the roundabouts and merge with the flow of vehicular traffic until exiting the roundabouts. Pedestrian crosswalks would be painted within each roundabout. A copy of the Auto-Turn analysis is provided in **Appendix L** showing the roundabout design can accommodate an AASHTO WB-67 semi-trailer.

Traffic Signal

It is proposed to widen North River Road at the main signalized access point to provide two through lanes in each direction. The eastbound approach would provide one 100-foot left-turn lane with a 90-foot bay taper, two through lanes, and a 100-foot dedicated right-turn lane. The westbound approach would provide a 100-foot left-turn lane with one through lane and one shared through/right-turn

lane. The northbound approach would provide a dedicated left-turn lane and shared through/right-turn lane. The southbound approach would provide a dedicated right-turn lane and a shared through/left-turn lane.

Figure 13–1 provides a conceptual sketch of North River Road along the Project access. **Figure 13–2** shows the proposed Project Access Conditions Diagram for use in the analysis.

All figures are shown at the end of this section.

13.1.2 Traffic Volumes

Figure 7–1 provided earlier in this report shows the general distribution of Project trips on North River Road. Seventy-five percent (75%) of trips were distributed to/from the west and 25% to/from the east under existing and near-term conditions.

Access A primarily serves the residential uses within the site. Access B bisects the main spine road within the site and provides access to not only residential uses on-site, but also serves as the primary access to the non-residential uses proposed in the southern portion of the Project. Access C (Wilshire Road) will serve residential uses on-site while also providing access to the non-residential uses in the southern portion of the site, and includes the realigning of Wilshire Road which provides access to existing farm uses north of North River Road. It was assumed that the driveway distribution for the site is as follows:

Access ID	Location	Land Uses Served	Trip Distribution
Access A	Westernmost Access on North River Road	Primarily Residential	30% of Project Trips
Access B	Central Main Access on North River Road	Residential and Non-Residential	50% of Project Trips
Access C	Easternmost Access on North River Road intersecting Wilshire Road	Primarily Residential, Non-Residential, and Existing Farm Uses	20% of Project Trips

Figure 13–3 illustrates the driveway distribution at the Project access intersections under existing and near-term conditions.

As mentioned in *Section 7.1* of this report, pass-by trips are expected to occur at the Project driveways. Pass-by trips are trips already on the street system passing along the Project frontage (North River Road), and only appear as new trips in and out of the Project driveways. Per SANDAG guidelines, 10% of daily and PM peak hour commercial traffic is categorized as pass-by. These trips were included at the Project driveways (14 PM peak hour trips). **Appendix M** provides a graphic depicting the pass-by volumes at the Project driveways.

Figure 13–4 shows the total Project trips (including pass-by trips) at the three (3) Project driveways under existing and near-term conditions.

Figures 13–5 and **13–6** show the Existing + Project and Existing + Near-Term Cumulative Projects + Project traffic volumes at the Project driveways, respectively.

In the Year 2035, the Master Transportation Roadway Plan assumes a major network change in the Project vicinity: the extension of Melrose Drive between North River Road and SR-76. *Figure 11–3* provided earlier in this report shows the general distribution of Project trips on North River Road with the connection of the Melrose Drive extension. With the changes in distribution on North River Road with the connection of Melrose Drive, 61% of trips were distributed to/from the west and 39% to/from the east (a shift from the 75/25 split without Melrose Drive).

It should be noted that no changes were made to the distribution percentages using each of the three (3) driveways with the connection of the Melrose Drive extension: Access A = 30% of Project trips; Access B = 50% of Project trips; and Access C = 20% of Project trips.

Figures 13–7 and **13–8** show the Year 2035 Project Access Distribution (with the connection of the Melrose Drive extension) and the Year 2035 Project Only Access traffic volumes, respectively. **Figure 13–9** shows the Year 2035 With Project – Project Access traffic volumes.

13.1.3 Intersection Operations

Table 13–1 summarizes the results of the Project Access intersection analysis.

With the proposed network improvements to the Project access intersections, LOS C or better operations are calculated under all “Plus Project” scenarios. This further supports the design of North River Road to provide one travel lane in each direction along the Project frontage.

Appendix N contains the intersection analysis sheets for each of the “Plus Project” access analysis scenarios.

TABLE 13-1
ACCESS INTERSECTION OPERATIONS

Intersection	Proposed Control Type	Peak Hour	Existing + Project		Existing + Cumulative Projects + Project		Year 2035 With Project	
			Delay ^a	LOS ^b	Delay	LOS	Delay	LOS
A. Access A/ North River Road	Roundabout	AM	8.4	A	8.6	A	13.4	B
		PM	12.7	B	13.0	B	19.5	C
B. Access B/ North River Road	Signal	AM	8.4	A	8.4	A	8.7	A
		PM	8.6	A	8.6	A	8.9	A
C. Access C/ North River Road/ Wilshire Road (<i>Intersection #6.</i>)	Roundabout	AM	6.5	A	6.6	A	10.6	B
		PM	8.2	A	8.4	A	13.2	B

Footnotes:

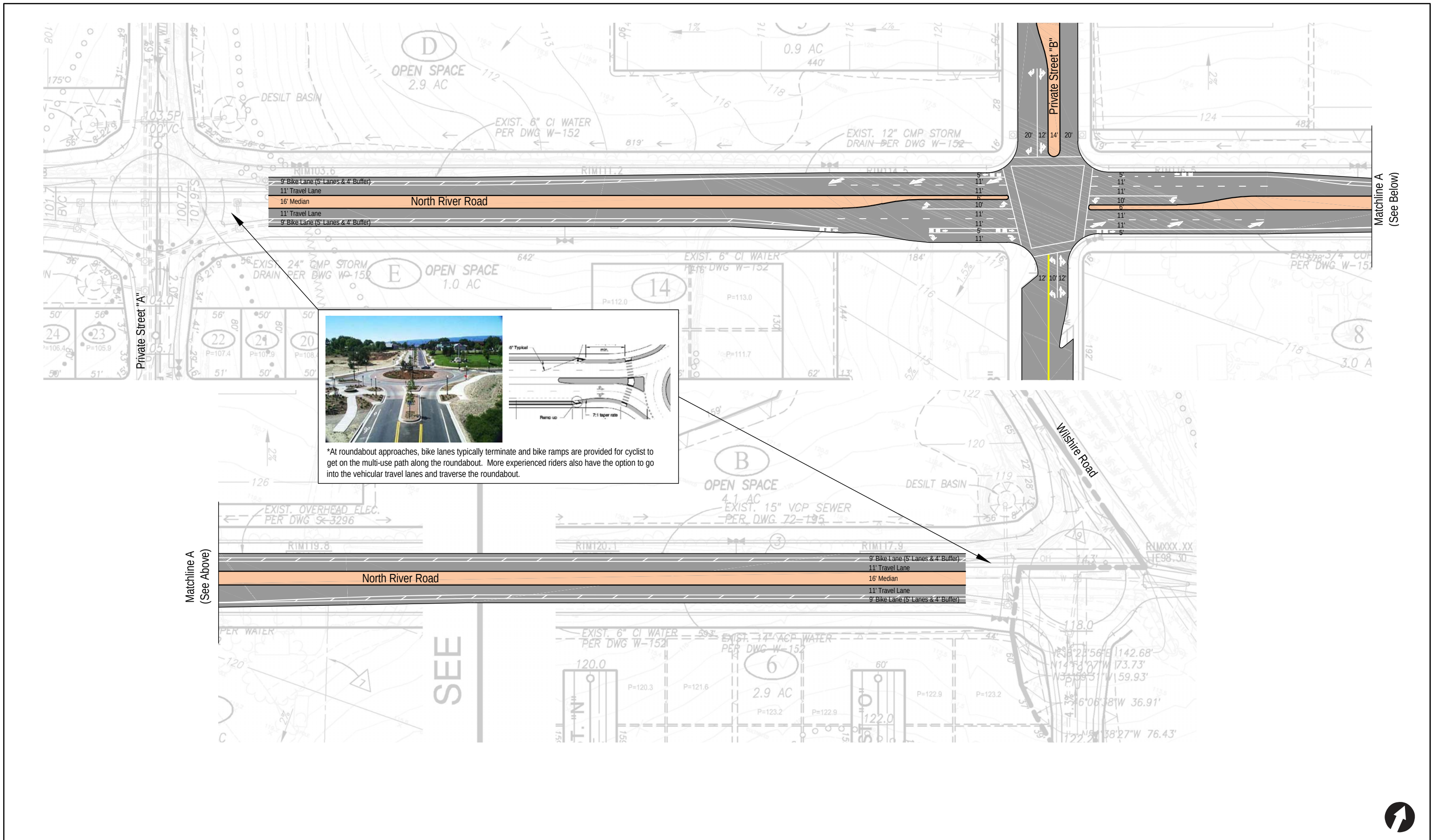
- a. Average delay expressed in seconds per vehicle.
- b. Level of Service

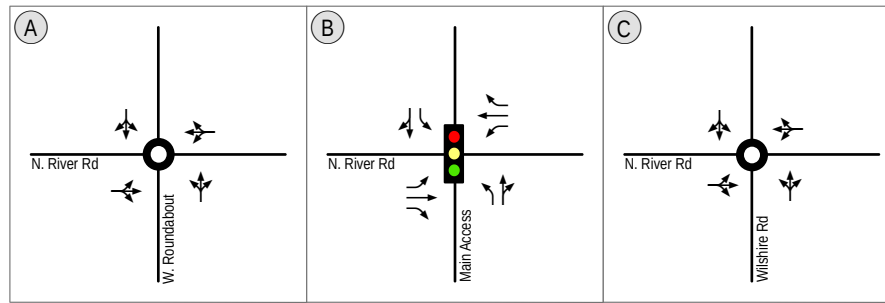
SIGNALIZED		ROUNDABOUT	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

13.2 On-Site Circulation

A detailed review of the conceptual site plan was conducted. The Project proposes various residential densities and non-residential land uses within the 177-acre site. Of the 689 residential units, 130 units are proposed at the highest density generating 780 gross ADT. A total of 250 units are proposed as medium density units generating 2,000 gross ADT. Lastly, 309 units are proposed at the lowest density generating 3,090 gross ADT. The Project also proposes non-residential uses which generate 2,460 gross trips. The total trips with the non-residential ADT and the mixed land use reduction totals 7,771 ADT.

The 7,771 ADT was distributed within the Project site based on the conceptual site plan. This site plan generally shows the main roadways proposed within the site. **Figure 13-10** shows the on-site traffic volumes for the proposed Project on the main on-site circulation system.





- # Study Intersections
- ↔ Turn Lane Configurations
- 🚦 Intersection Control
- Roundabout



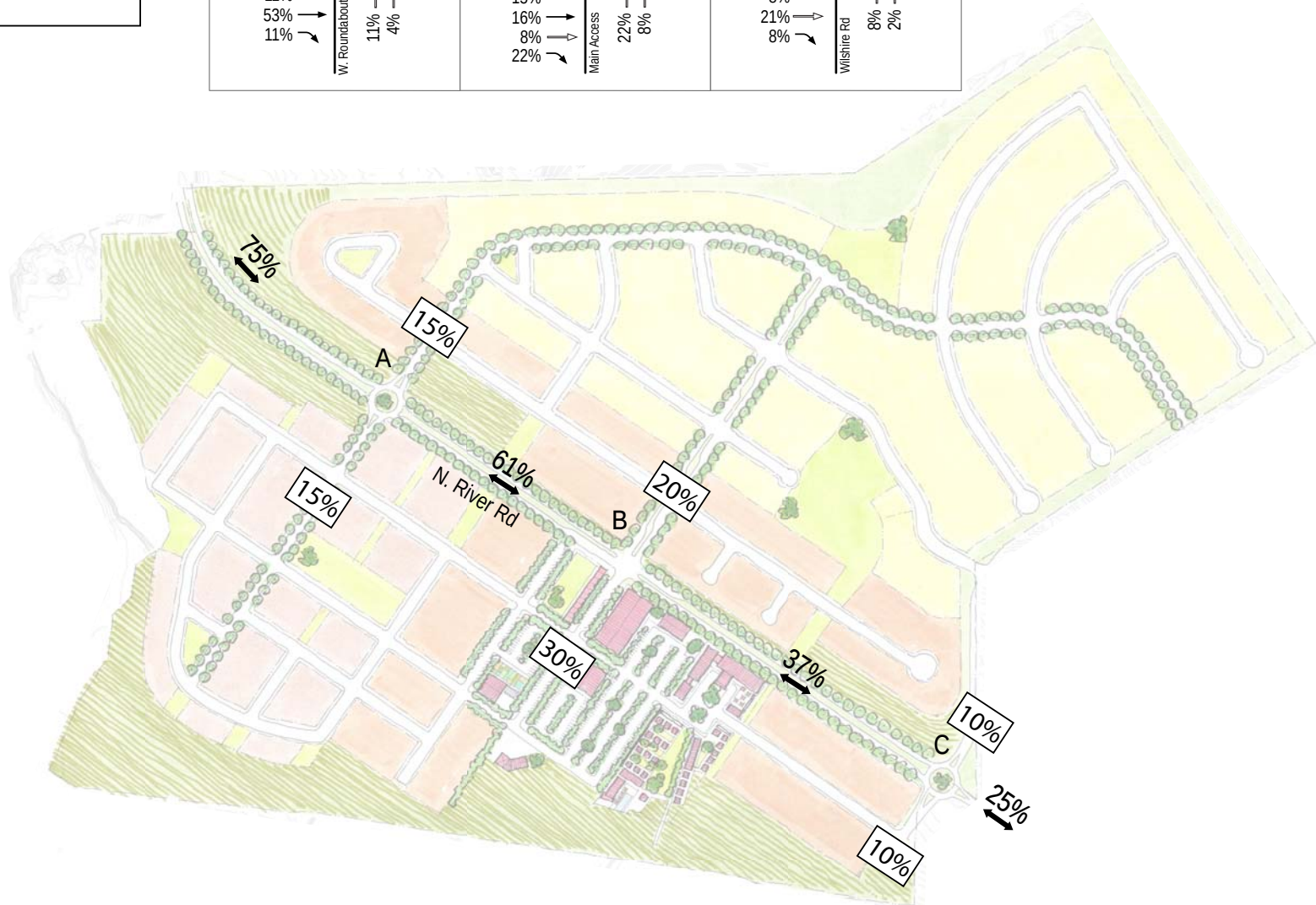
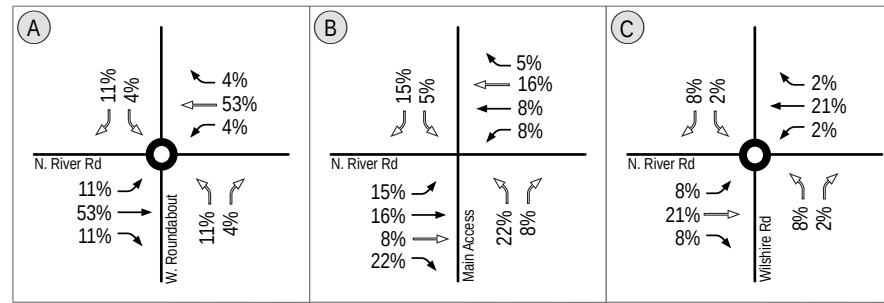
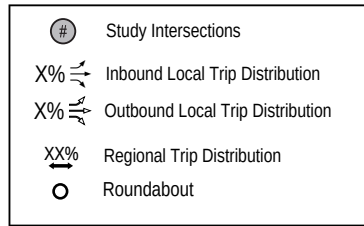
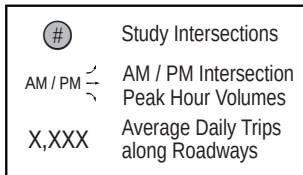
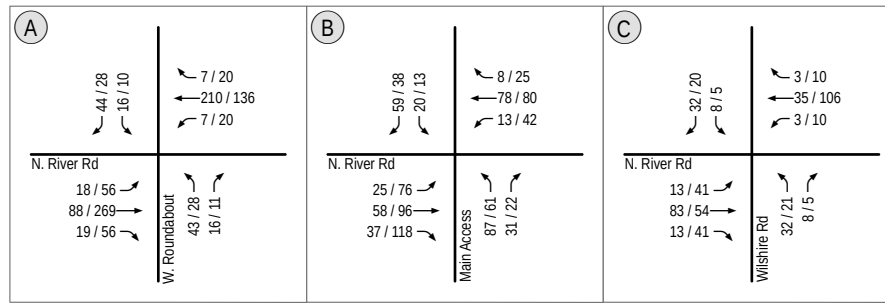
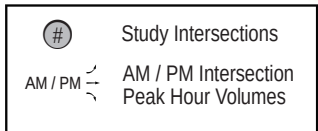
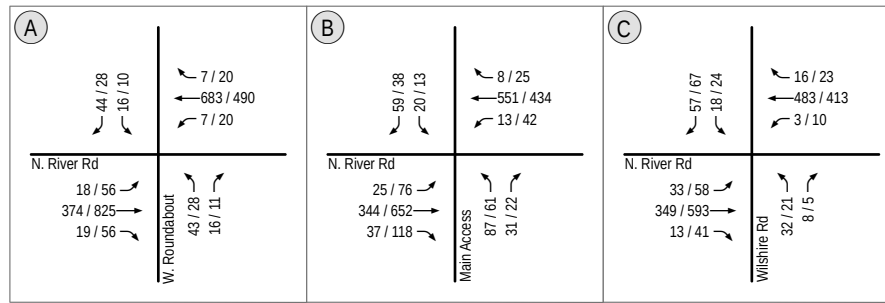


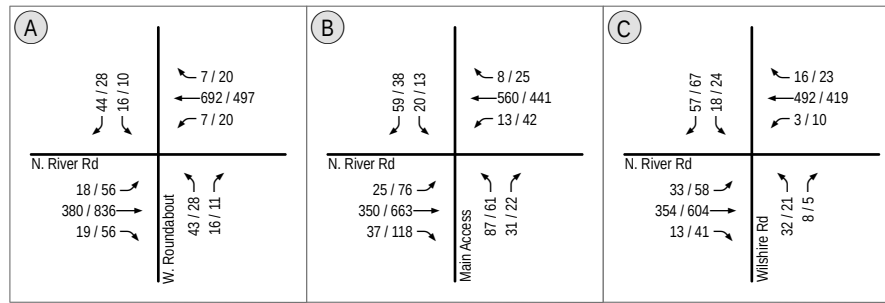
Figure 13-3

Project Access Distribution

NORTH RIVER FARMS

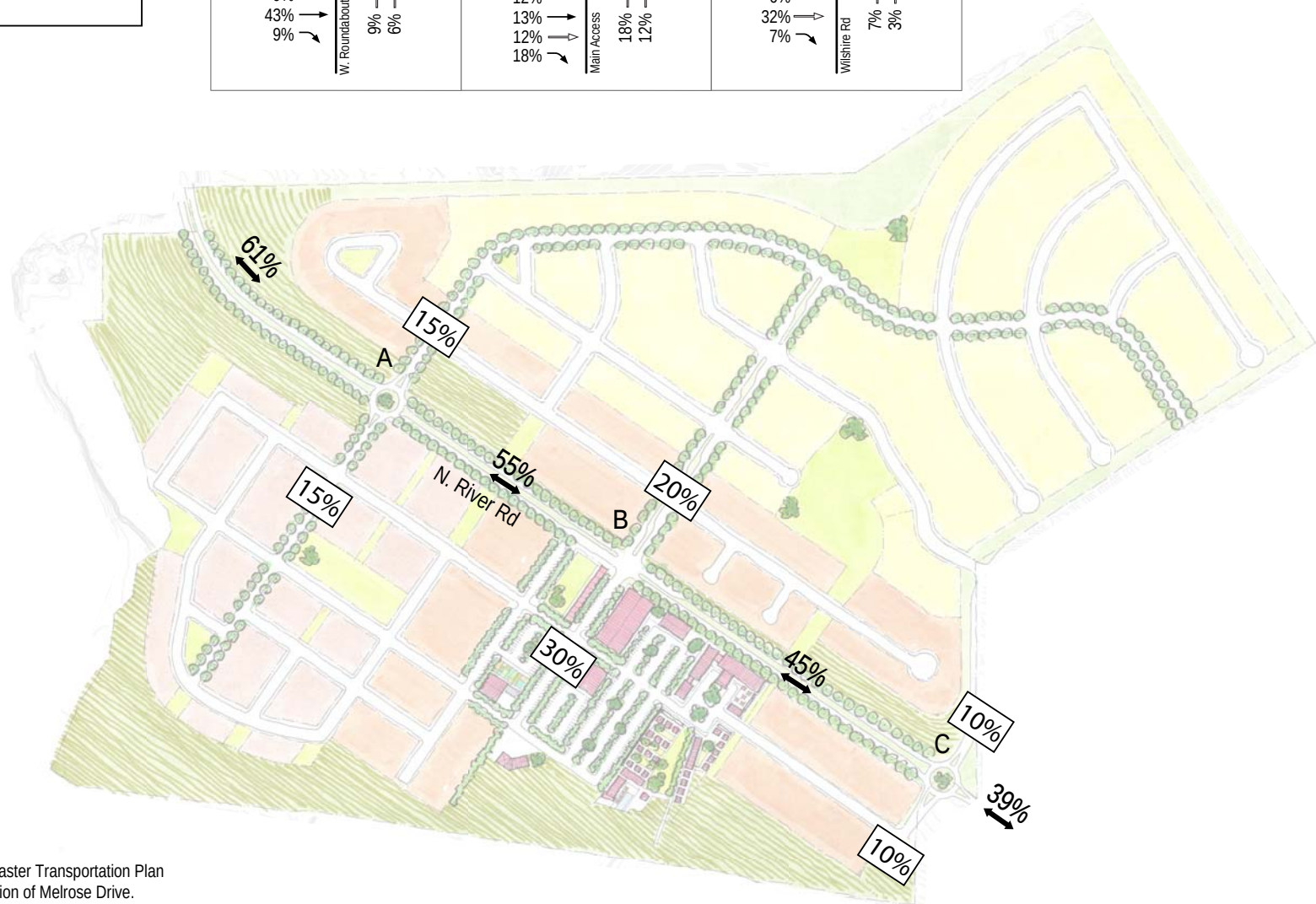
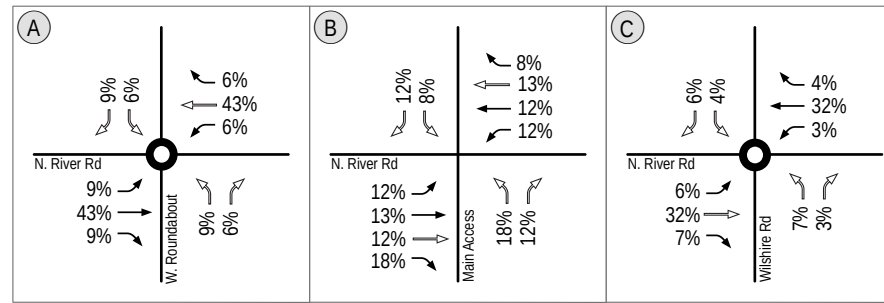
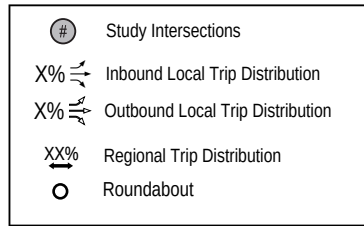






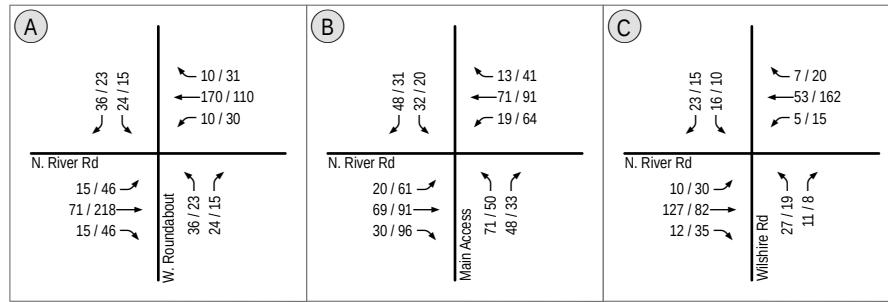
Study Intersections
AM / PM AM / PM Intersection Peak Hour Volumes





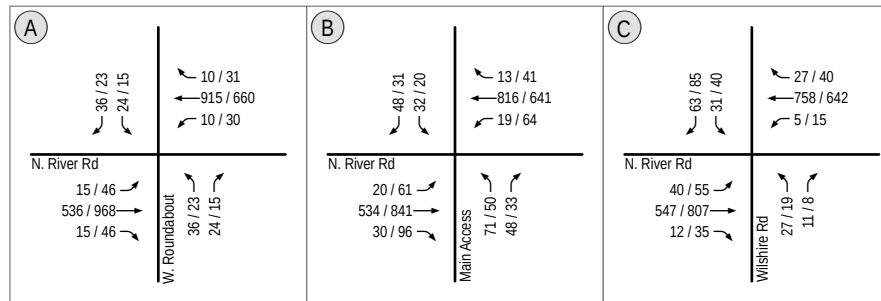
* Assumes buildout of the Master Transportation Plan including the future extension of Melrose Drive.

#	Study Intersections
AM / PM	AM / PM Intersection Peak Hour Volumes
X,XXX	Average Daily Trips along Roadways



* Assumes buildout of the Master Transportation Plan including the future extension of Melrose Drive.





Study Intersections
AM / PM Intersection Peak Hour Volumes





14.0 YEAR 2035 WITHOUT MELROSE DRIVE EXTENSION

A separate analysis has been prepared to analyze the effects on the street system based on a Year 2035 “Without Melrose Drive Extension” scenario.

14.1 Network Conditions

As discussed earlier in *Section 11.0*, the Year 2035 network was developed as part of the 2030 Master Transportation Roadway Plan outlined in the Oceanside Circulation Element. An alternative scenario was analyzed in the General Plan EIR Traffic Study, *Alternative 2*, which evaluated the street network with key changes to the ultimately adopted Master Transportation Roadway Plan.

The major changes to the circulation network within the study area included in *Alternative 2* to the Master Transportation Roadway Plan include the following:

- SR-76 is four lanes (six-lane widening not planned or funded per Caltrans)
- Rancho Del Oro Road at SR-78 is not an interchange
- College Boulevard is six-lanes between Avenida de la Plata and Olive Drive, and four-lanes between Olive Drive and Waring Road
- College Boulevard over the San Luis Rey River from North River Road to Adams Street remains a four-lane bridge
- Melrose Drive is not connected between North River Road and SR-76
- Melrose Drive is not connected between Spur Avenue and N. Santa Fe Avenue
- Pala Road is not connected between Los Arbolitos Boulevard and Foussat Road

Of particular importance within the Project study area is the exclusion of the Melrose Drive extension given its close proximity to the Project site. The construction of the Melrose Drive extension has been a contentious issue within the City for some time. It has been indicated that this connection may not occur due to significant environmental constraints to the river valley and lack of funding per the City’s Thoroughfare and Traffic Signal Fee Program Update Study. Additional details on this network change are provided below:

1. *Melrose Drive: North River Road to SR-76 Connection and N. Santa Fe Avenue to Spur Avenue:* Melrose Drive is shown on the City’s Master Transportation Roadway Plan to extend northward as a 4-Lane Major Arterial to connect with North River Road, east of the Project site. The effect of this connection in the future is that it relieves North River Road, Vandegrift Boulevard, and College Boulevard west of the Project site by allowing traffic destined to points south and east to cross the San Luis Rey River using a new bridge. The feasibility of this connection being constructed is contentious due to significant environmental constraints to the river valley and lack of funding per the City’s Thoroughfare and Traffic Signal Fee Program Update Study.

Because of the reasons listed above, a separate analysis has been prepared to analyze the effects on the street system without this major connection. For purposes of this report, the analysis is referred to as the Year 2035 “Without Melrose Drive Extension” scenario.

Figure 14–1 depicts the Year 2035 Conditions Diagram (Without Melrose Drive Extension).

14.2 Traffic Volumes

As previously mentioned in *Section 11.2* of this report, the SANDAG Series 12 Year 2035 traffic forecast was used to forecast future traffic volumes to account for SR-76 remaining a four-lane facility. The General Plan EIR Traffic Study included a complete set of traffic data for *Alternative 2*. A review of the change in traffic volumes with and without the connection of Melrose Drive was conducted between the adopted Master Transportation Roadway Plan Year 2035 traffic volumes and *Alternative 2*. This relationship was assumed to remain constant with the use of the SANDAG Series 12 Year 2035 traffic volumes. Therefore, the changes in traffic patterns between the two scenarios were carried over into the Year 2035 Without Project (Without Melrose Drive Extension) traffic volumes. **Appendix O** provides the documentation showing the change in travel patterns without and with the Melrose Drive Extension.

For purposes of this report, it was assumed SR-76 will continue as a four-lane Expressway, not a six-lane facility as shown in *Alternative 2*. In addition, although *Alternative 2* considers the College Boulevard bridge over the San Luis Rey river to be a six-lane bridge, this improvement project is not identified in the City’s Thoroughfare and Traffic Signal Fee Program Update Study and given lack of funding and environmental constraints over the river valley, it was assumed to remain in its current configuration as a four-lane facility in the “Without Melrose Drive Extension” alternative analysis.

Figure 14–2 shows the Year 2035 Without Project (Without Melrose Drive Extension) traffic volumes.

Project traffic volumes depicted earlier in this report on *Figure 7–1* were then assigned to the street system and added into the Year 2035 baseline to arrive at Year 2035 With Project (Without Melrose Drive Extension) traffic volumes, shown on **Figure 14–3**.



Figure 14-1
Year 2035 Conditions Diagram
(without Melrose Drive Extension)

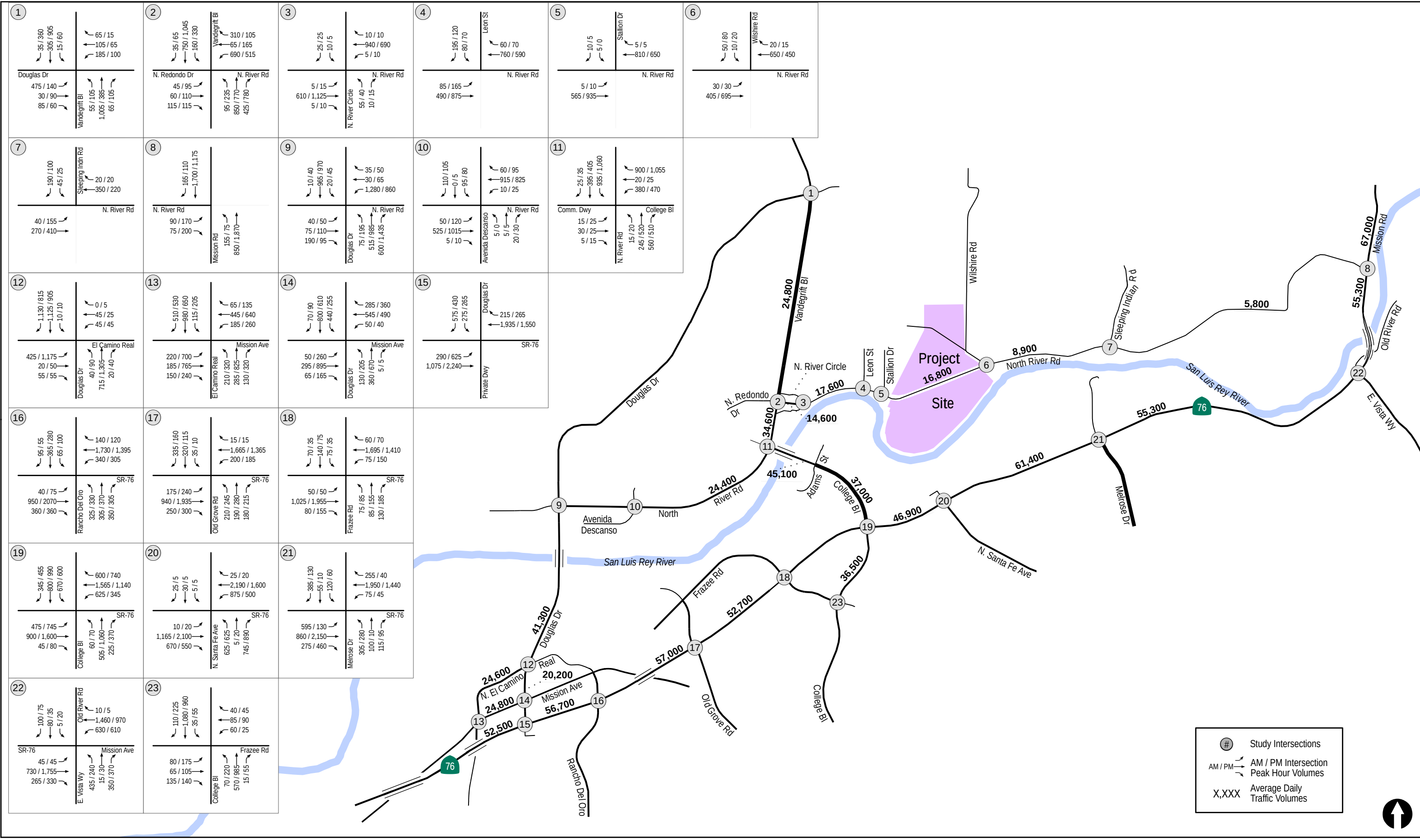


Figure 14-2
Year 2035 Without Project Traffic Volumes
(without Melrose Drive Extension)

14.3 Year 2035 Without Project (With Melrose Drive Extension) Analysis

14.3.1 Intersection Analysis

Table 14–1 summarizes the peak hour intersection operations for the Year 2035 Without Project (With Melrose Drive Extension) condition. As seen in *Table 14–1*, the following intersections are calculated to operate at LOS E or F:

- Intersection #2. Vandegrift Boulevard / N. River Road – LOS F during the PM peak hour
- Intersection #4. N. River Road / Leon Street – LOS F during the AM/PM peak hours
- Intersection #9. Douglas Drive / N. River Road – LOS E during the AM peak hour
- Intersection #11. N. River Road / College Boulevard – LOS E during the PM peak hour
- Intersection #13. Mission Ave / El Camino Real – LOS E during the PM peak hour
- Intersection #16. SR-76 / Rancho Del Oro Drive – LOS F during the AM/PM peak hours
- Intersection #17. SR-76 / Old Grove Road – LOS F/E during the AM/PM peak hours
- Intersection #18. SR-76 / Frazee Road – LOS E during the PM peak hour
- Intersection #19. SR-76 / College Boulevard – LOS F during the AM/PM peak hours
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS F during the AM peak hour

Appendix P contains the peak hour intersection analysis worksheets for the Year 2035 Without Project (Without Melrose Drive Extension) condition.

14.3.2 Segment Operations

Table 14–2 summarizes the key segment operations in the study area for the Year 2035 Without Project (Without Melrose Drive Extension) condition. As seen in *Table 14–2*, the following street segments are calculated to operate at LOS E or F:

- Segment #11. College Boulevard: North River Road to Adams Street – LOS F
- Segment #13. SR-76 to Frazee Road – LOS E
- Segment #17. SR-76: Douglas Drive to Rancho Del Oro Drive – LOS E
- Segment #18. SR-76: Rancho Del Oro Drive to Old Grove Road – LOS E
- Segment #22. SR-76: N. Santa Fe Avenue to Melrose Drive – LOS F
- Segment #23. SR-76: Melrose Drive to E. Vista Way – LOS E
- Segment #24. SR-76: E. Vista Way to N. River Road – LOS E
- Segment #25. SR-76: N. River Road to Villa Montellano – LOS F

14.4 Year 2035 With Project (Without Melrose Drive Extension) Analysis

14.4.1 Intersection Analysis

Table 14–1 summarizes the peak hour intersection operations for the Year 2035 With Project (Without Melrose Drive Extension) condition. As seen in Table 14–1, with the net increase in traffic due to the change in land use, the following intersections are calculated to operate at LOS E or F:

- **Intersection #2. Vandegrift Boulevard / N. River Road – LOS F during the AM/PM peak hours**
- **Intersection #4. N. River Road / Leon Street – LOS F during the AM/PM peak hours**
- **Intersection #9. Douglas Drive / N. River Road – LOS E during the AM peak hour**
- **Intersection #11. N. River Road / College Boulevard – LOS E/F during the AM/PM peak hours**
- Intersection #13. Mission Ave / El Camino Real – LOS E during the PM peak hour
- **Intersection #16. SR-76 / Rancho Del Oro Drive – LOS F during the AM/PM peak hours**
- **Intersection #17. SR-76 / Old Grove Road – LOS F during the AM/PM peak hours**
- **Intersection #18. SR-76 / Frazee Road – LOS E during the PM peak hour**
- **Intersection #19. SR-76 / College Boulevard – LOS F during the AM/PM peak hours**
- Intersection #20. SR-76 / N. Santa Fe Avenue – LOS F during the AM/PM peak hours
- Intersection #21. SR-76 / Melrose Drive – LOS F during the AM peak hour

Based on City of Oceanside significance criteria, **eight (8) significant impacts** were calculated with the addition of Project traffic at the intersections **bolded** and underlined above since the Project increases the delay by greater than 2.0 seconds at each location.

Appendix Q contains the peak hour intersection analysis worksheets for the Year 2035 With Project (Without Melrose Drive Extension) condition.

14.4.2 Segment Operations

Table 14–2 summarizes the key segment operations in the study area for the Year 2035 With Project (Without Melrose Drive Extension) condition. As seen in Table 14–2, with the net increase in traffic due to the change in land use, the following street segments are calculated to operate at LOS E or F:

- **Segment #11. College Boulevard: North River Road to Adams Street – LOS F**
- **Segment #13. College Boulevard: SR-76 to Frazee Road – LOS E**
- Segment #17. SR-76: Douglas Drive to Rancho Del Oro Drive – LOS E
- Segment #18. SR-76: Rancho Del Oro Drive to Old Grove Road – LOS E
- Segment #22. SR-76: N. Santa Fe Avenue to Melrose Drive – LOS F
- Segment #23. SR-76: Melrose Drive to E. Vista Way – LOS E
- Segment #24. SR-76: E. Vista Way to N. River Road – LOS E

- Segment #25. SR-76: N. River Road to Villa Montellano – LOS F

Based on City of Oceanside significance criteria, **two (2) significant impacts** were calculated with the addition of Project traffic on study area street segments **bolded** and underlined above since the Project degrades the LOS to unacceptable levels or increases the V/C by greater than 0.02 at each location already operating at LOS E or F.

TABLE 14-1
YEAR 2035 (WITHOUT MELROSE DRIVE EXTENSION)
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Delay Δ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Vandegrift Blvd / Douglas Dr	Signal	AM PM	19.8 20.0	B B	19.8 20.0	B B	0.0 0.0	No
2. Vandegrift Blvd / N. River Rd	Signal	AM PM	43.4 118.4	D F	84.8 230.3	F F	41.4 111.9	Yes
3. N. River Rd / North River Circle	Signal	AM PM	11.0 11.7	B B	14.1 23.4	B C	3.1 11.7	No
4. N. River Rd / Leon St	MSSC ^d	AM PM	77.8 217.8	F F	266.1 300.0	F F	188.3 82.2	Yes
5. N. River Rd / Stallion Dr	MSSC	AM PM	22.2 13.4	C B	31.9 16.1	D C	9.7 2.7	No
6. N. River Rd / Wilshire Rd	MSSC/ Roundabout ^e	AM PM	25.3 30.3	D D	9.2 11.3	A B	(16.1) (19.0)	No
7. N. River Rd / Sleeping Indian Rd	MSSC	AM PM	16.5 14.5	C B	19.5 18.4	C C	3.0 3.9	No
8. N. River Rd / SR-76 (Mission Rd)	Signal	AM PM	22.2 18.7	C B	28.0 24.3	C C	5.8 5.6	No
9. Douglas Dr / N. River Rd	Signal	AM PM	64.6 39.3	E D	69.7 40.8	E D	5.1 1.5	Yes
10. N. River Rd / Avenida Descanso	Signal	AM PM	19.6 11.2	B B	20.7 11.6	C B	1.1 0.4	No
11. N. River Rd / College Blvd	Signal	AM PM	49.9 69.2	D E	77.8 87.8	E F	27.9 18.6	Yes
12. Douglas Dr / El Camino Real	Signal	AM PM	16.6 48.2	B D	17.1 53.3	B D	0.5 5.1	No
13. Mission Ave / El Camino Real	Signal	AM PM	33.9 72.5	C E	34.3 73.3	C E	0.4 0.8	No
14. Mission Ave / Douglas Dr	Signal	AM PM	36.4 45.3	D D	37.8 48.3	D D	1.4 3.0	No
15. SR-76 / Douglas Dr	Signal	AM PM	36.7 37.1	D D	38.1 41.5	D D	1.4 4.4	No
16. SR-76 / Rancho Del Oro Dr	Signal	AM PM	118.3 167.0	F F	124.3 174.0	F F	6.0 7.0	Yes
Continued on Next Page								

TABLE 14-1
YEAR 2035 (WITHOUT MELROSE DRIVE EXTENSION)
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035 Without Project		Year 2035 With Project		Delay Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
Continued from Previous Page								
17. SR-76 / Old Grove Rd	Signal	AM PM	97.1 75.5	F E	101.5 81.1	F F	4.4 5.6	Yes
18. SR-76 / Frazee Rd	Signal	AM PM	38.2 64.1	D E	39.2 71.9	D E	1.0 7.8	Yes
19. SR-76 / College Blvd	Signal	AM PM	100.4 173.2	F F	110.9 196.3	F F	10.5 23.1	Yes
20. SR-76 / N. Santa Fe Ave	Signal	AM PM	164.6 166.2	F F	166.0 167.5	F F	1.4 1.3	No
21. SR-76 / Melrose Dr	Signal	AM PM	104.2 34.8	F C	104.8 35.2	F D	0.6 0.4	No
22. SR-76 / E. Vista Way	Signal	AM PM	41.5 44.7	D D	44.9 48.1	D D	3.4 3.4	No
23. College Blvd / Frazee Rd	Signal	AM PM	18.7 23.5	B C	19.3 24.1	B C	0.6 0.6	No

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service.
- Δ denotes the increase in delay due to Project.
- MSSC = Minor Street Stop-Controlled intersection. Minor street left-turn delay reported.
- Delay decrease due to installation of roundabout at Project access intersection as a Project feature. See Section 13.0 for additional details.

General Notes:

- Sig = Significant impact, yes or no.
- Bold** typeface and shading represents a significant direct impact.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 14-2
YEAR 2035 (WITHOUT MELROSE DRIVE EXTENSION)
STREET SEGMENT OPERATIONS

Street Segment	MTRP Capacity (LOS E) ^a	Year 2035 Without Project			Year 2035 With Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d		
Vandegrift Boulevard									
1. North River Rd to Douglas Dr	45,000	24,800	C	0.551	25,422	C	0.565	0.014	No
North River Road									
2. Douglas Dr to College Blvd	40,000	24,400	C	0.610	25,566	C	0.639	0.029	No
3. College Blvd to Vandegrift Blvd	45,000	34,600	C	0.769	39,651	D	0.881	0.112	No
4. Vandegrift Blvd to N. River Cir	40,000	14,600	A	0.365	20,273	B	0.507	0.142	No
5. N. River Cir to Stallion Dr	40,000	17,600	B	0.440	23,428	C	0.586	0.146	No
6. Stallion Dr to Wilshire Rd	40,000	16,800	B	0.420	22,628	C	0.566	0.146	No
7. Wilshire Rd to Sleeping Indian Rd	40,000	8,900	A	0.223	10,843	A	0.271	0.048	No
8. Sleeping Indian Rd to SR-76	30,000	5,800	A	0.193	7,510	A	0.250	0.057	No
Douglas Drive									
9. SR-76 to El Camino Real	40,000	20,200	B	0.505	20,899	B	0.522	0.017	No
10. El Camino Real to N. River Rd	50,000	41,300	D	0.826	42,466	D	0.849	0.023	No
College Boulevard									
11. N. River Rd to Adams St	40,000 ^f	45,100	F	1.128	48,986	F	1.225	0.097	Yes
12. Adams St to SR-76	50,000	37,000	C	0.740	40,652	D	0.813	0.073	No
13. SR-76 to Frazee Rd	40,000	36,500	E	0.913	37,976	E	0.949	0.036	Yes
El Camino Real									
14. Mission Ave to Douglas Dr	40,000	24,600	C	0.615	25,066	C	0.627	0.012	No
Mission Avenue									
15. El Camino Real to Douglas Dr	40,000	24,800	C	0.620	24,955	C	0.624	0.004	No
(Continued on Next Page)									

TABLE 14-2
YEAR 2035 (WITHOUT MELROSE DRIVE EXTENSION)
STREET SEGMENT OPERATIONS

Street Segment	MTRP Capacity (LOS E) ^a	Year 2035 Without Project			Year 2035 With Project			Δ ^e	Sig?
		ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d		
(Continued from Previous Page)									
State Route 76									
16. Foussat Rd to Douglas Dr	60,000	52,500	D	0.875	53,433	D	0.891	0.016	No
17. Douglas Dr to Rancho Del Oro Dr	60,000	56,700	E	0.945	57,244	E	0.954	0.009	No
18. Rancho Del Oro Dr to Old Grove Rd	60,000	57,000	E	0.950	57,699	E	0.962	0.012	No
19. Old Grove Rd to Frazee Rd	60,000	52,700	D	0.878	53,477	D	0.891	0.013	No
20. Frazee Rd to College Blvd	60,000	54,000	D	0.912	24,933	D	0.916	0.016	No
21. College Blvd to N Santa Fe Ave	60,000	46,900	C	0.782	48,143	C	0.802	0.021	No
22. N Santa Fe Ave to Melrose Dr	60,000	61,400	F	1.023	61,866	F	1.031	0.008	No
23. Melrose Dr to E Vista Way	60,000	55,300	E	0.922	55,689	E	0.928	0.006	No
24. E Vista Way to North River Rd	60,000	55,300	E	0.922	56,466	E	0.941	0.019	No
25. N. River Rd to Via Montellano	60,000	67,000	F	1.117	68,010	F	1.134	0.017	No

Footnotes:

- a. Capacities based on City of Oceanside Roadway Classification & LOS table (See *Appendix B*). Future classifications taken from the City of Oceanside Master Transportation Roadway Plan.
- b. Average Daily Traffic.
- c. Level of Service.
- d. Volume to Capacity ratio.
- e. Δ denotes a Project-induced increase in the Volume to Capacity ratio.
- f. The College Boulevard bridge over the San Luis Rey river is not identified in the City's Thoroughfare and Traffic Signal Fee Program Update Study and given lack of funding and environmental constraints over the river valley, it was assumed to remain in its current configuration as a four-lane facility in the "Without Melrose Drive Extension" alternative analysis.

General Notes:

1. MTRP = Master Transportation Roadway Plan
2. Sig = Significant impact, yes or no.
3. **Bold** typeface and **shading** indicates a significant impact.

14.5 Access Assessment

The Project distribution and traffic volumes at the driveways utilizes the information shown on *Figure 13–3* and *Figure 13–4* provided earlier in this report.

Figures 14–4 shows the Year 2035 With Project Traffic Volumes (Without Melrose Drive Extension) at the Project driveways.

14.5.1 Intersection Operations

Table 14–3 summarizes the results of the Project Access intersection analysis with the connection of the Melrose Drive Extension.

With the proposed network improvements to the Project access intersections, LOS B or better operations are calculated under the Year 2035 With Project (Without Melrose Drive Extension) scenario with one exception. The increase in ambient traffic on North River Road (without the connection of the Melrose Drive extension) results in LOS E operations at the westerly roundabout in the PM peak hour (Access A). It is therefore recommended that the westerly roundabout be constructed to allow a future conversion to a two-lane roundabout capable of accommodating the increase in growth along North River Road. The roundabout would require two lanes once future volumes on North River Road exceed 21,000 total ADT.

It should be noted that the near-term volumes with the Project are forecasted at 15,708 ADT along the Project frontage. The additional approximately 5,300 trips that would trigger the two-lane roundabout would need to result from approximately 34% of ambient growth on the street system in the future.

Appendix R contains the intersection analysis sheets for the Year 2035 With Project (Without Melrose Drive Extension) access analysis.

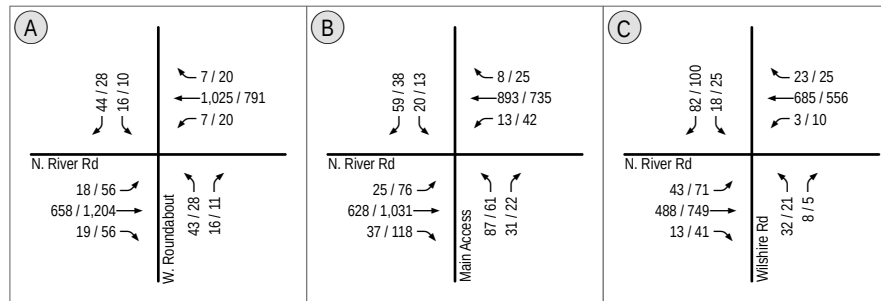
TABLE 14-3
YEAR 2035 WITH PROJECT (WITHOUT MELROSE DRIVE EXTENSION)
ACCESS INTERSECTION OPERATIONS

Intersection	Proposed Control Type	Peak Hour	Year 2035 With Project (Without Melrose Drive Extension)	
			Delay	LOS
A. Access A/ North River Road	Roundabout	AM	19.3	C
		PM	49.8	E
B. Access B/ North River Road	Signal	AM	8.6	A
		PM	8.8	A
C. Access C/ North River Road/ Wilshire Road (<i>Intersection #6.</i>)	Roundabout	AM	9.2	A
		PM	11.3	B

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service

SIGNALIZED		ROUNDBOUT	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F



15.0 SIGNAL WARRANT ANALYSIS

As shown earlier in this report, the intersection of North River Road at Leon Street is cumulatively impacted by the Project under Year 2035 conditions. The mitigation measures provided later on in *Section 16.2* of this report recommend the restriping of the southbound approach to provide a dedicated right-turn lane and dedicated left-turn lane in addition to the widening of North River Road for the street segment impact between North River Circle and Stallion Drive. The southbound dedicated turn lanes could be completed within the existing paved roadway width by removing on-street parking on the west side of the roadway for approximately 150 feet. This improvement would mitigate the Project's cumulative impact.

The Year 2035 conditions are forecasted at LOS F without the Project, and although the recommended improvements mitigate the Project's cumulative impact, LOS F operations would continue to be forecasted. To illustrate that traffic signal warrants are not met due to Project development alone, a signal warrant analysis was conducted using Year 2035 Without Project (Master Transportation Roadway Plan) traffic volumes. **Table 15–1** shows the Year 2035 operations with and without the proposed improvements to Leon Street. **Appendix S** contains the signalized intersection operations.

TABLE 15–1
NORTH RIVER ROAD/ LEON STREET INTERSECTION OPERATIONS

Intersection	Proposed Control Type	Peak Hour	Year 2035 Without Project (Master Transportation Roadway Plan)		Year 2035 With Project (Master Transportation Roadway Plan) With Mitigation ^d	
			Delay ^a	LOS ^b	Delay	LOS
Intersection #4. North River Road/ Leon Street	MSSC ^c	AM PM	55.5	F	27.3	D
			59.9	F	31.2	D
	Signal	AM PM	17.5	B	17.3	B
			12.1	B	8.5	A

Footnotes:

- Average delay expressed in seconds per vehicle.
- Level of Service
- Minor Street Stop-Controlled intersection. Minor street left-turn delay reported.
- "With Mitigation" includes dedicated southbound right-turn lane and left turn lane, as well as an additional through lane in the eastbound and westbound directions per the mitigation recommended along North River Road. See TRA-2 and TRA-9 in *Section 16.2*.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

As outlined in Chapter 4C, "Traffic Control Signal Needs Studies," of the *2012 California Manual on Uniform Traffic Control Devices* (California MUTCD), the peak hour warrant (Warrant 3) was

analyzed for the subject intersection to determine if a traffic signal would be warranted under the Year 2035 Without Project (Master Transportation Roadway Plan) conditions. It should be noted that since a signal is warranted under the lower, Year 2035 Without Project (Master Transportation Roadway Plan) conditions, the signal would also be warranted under the Year 2035 Without Project (Without Melrose Drive Extension) condition where traffic volumes through this intersection would be higher.

Table 15–2 below illustrates the two categories. Category A requires three (3) conditions to be met for the same one (1) hour of an average day: 1) minor street delay exceeding four (4) vehicles hours, 2) minor street volume exceeds 100 vehicles per hour, and 3) the total entering volume at the intersection exceeds 650 vehicles. Category B plots the AM and PM entering volumes on a linear graphic (Figure 4C-4 of the MUTCD) to determine if the volumes exceed the allowable thresholds. For the signal warrant to be met at this location, either Category A or B must be satisfied.

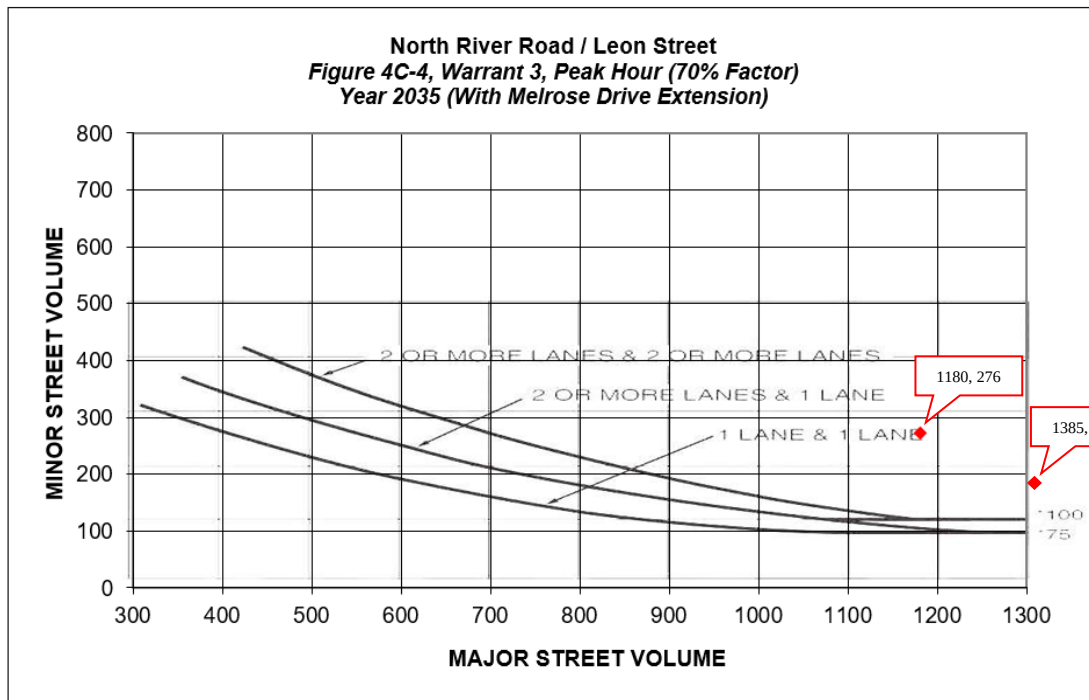
Appendix T contains signal warrant excerpts from the MUTCD and the complete details of the warrant analysis including Figure 4C-4.

As shown in *Table 15–2*, both Category A and Category B are satisfied. Therefore, according to Warrant 3, a traffic signal at the intersection of North River Road at Leon Street is warranted under Year 2035 Without Project conditions. Given the signal is warranted under pre-Project conditions, it can be concluded that the addition of Project traffic is not the primary factor causing the need for a signal at this location and thus, installation of a signal is not a requirement of the Project. As previously mentioned, the Project is able to mitigate its impact through the striping improvements to the southbound approach at Leon Street. Therefore, it is recommended that the Project improve the southbound approach at Leon Street to provide a dedicated right-turn lane and contribute a fair share toward a future traffic signal.

TABLE 15-2

WARRANT 3: PEAK HOUR – YEAR 2035 WITHOUT PROJECT (MASTER TRANSPORTATION ROADWAY PLAN)

Warrant 3 – Peak Hour		Category A <u>or</u> Category B Satisfied *		Yes	☒	No	☐
Category A		Satisfied *		Yes	☐	No	☒
(All Parts 1, 2, and 3 below must be satisfied)							
1. The total delay experienced for traffic on one minor-street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; <u>AND</u>				Yes	☐	No	☒
2. The volume on the same-minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>				Yes	☒	No	☐
3. The entering volume serviced during the hour equals or exceeds 800 vph for the intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches.				Yes	☒	No	☐
Category B		Satisfied *		Yes	☒	No	☐
Approach Lanes	One	Two	Warrant Volume	AM	PM		
Both Approaches -Major Street	X		See Figure 4C-4 below	1,180	1,385		
Highest Approach -Minor Street		X	See Figure 4C-4 below	275	190		
The plotted point falls below the applicable curve on Figure 4C-4.				Yes	☒	No	☐



16.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per City of Oceanside significance thresholds and the analysis methodology presented in this report, Project and cumulative traffic is calculated to result in 16 significant transportation impacts. *Direct* impacts were calculated where Project-added traffic resulted in a degradation in LOS from acceptable LOS D or better operations to below LOS D conditions. *Cumulative* impacts were calculated where Project-added traffic resulted in an increase in intersection delay or street segment volume-to-capacity ratios exceeding the allowable thresholds at locations with pre-existing LOS deficiencies (LOS E or F, see *Table 5-1*) and any impacts occurring in the Year 2035 scenarios. Year 2035 significant impacts are considered *cumulative* since traffic generated by existing development, future general growth, and other development projects are all included in the Year 2035 traffic volume projections. This is because for an impact to be termed *direct*, the project traffic must be the sole reason that the impact occurs.

Near-term impacts were calculated under Existing + Project and Existing + Cumulative Projects + Project conditions, assuming the existing on-the-ground street network at the time of data collection.

For the Year 2035, the baseline analysis assumed completion of the City's Adopted Circulation Element Master Transportation Roadway Plan. In addition, as previously mentioned throughout this report, an alternative scenario was analyzed in the General Plan EIR Traffic Study, *Alternative 2*, to evaluate the street network with key changes to the adopted Master Transportation Roadway Plan Circulation Element. Of particular importance within the proposed Project study area is the Melrose Drive Extension. Thus, the alternative scenario analyzed in this report was termed "Without Melrose Drive Extension". The construction of the Melrose Drive extension has been a contentious issue within the City for some time. It has been indicated that this connection may not occur due to significant environmental constraints to the river valley and lack of funding per the City's Thoroughfare and Traffic Signal Fee Program Update Study. Below is a summary of the differences between the Master Transportation Roadway Plan and *Alternative 2* network conditions:

Adopted Circulation Element Master Transportation Roadway Plan	Alternative 2 (Without Melrose Drive Extension)
SR-76 is six lanes ^a	SR-76 is six lanes*
Rancho Del Oro Road at SR78 is an interchange	Rancho Del Oro Road at SR78 is not an interchange
College Boulevard is six-lanes between Old Grove Road and Vista Way	College Boulevard is six-lanes between Avenida de la Plata and Olive Drive, and four-lanes between Olive Drive and Waring Road
College Boulevard is six-lanes over the San Luis Rey Bridge	College Boulevard is four lanes over the San Luis Rey Bridge ^b
North River Road is four lanes between Vandegrift Boulevard to the City limits	North River Road is four lanes between Vandegrift Boulevard to the City limits
Pala Road is connected between Los Arbolitos Boulevard and Foussat Road	Pala Road is not connected between Los Arbolitos Boulevard and Foussat Road
Melrose Drive is connected between North River Road and SR-76	Melrose Drive is not connected between North River Road and SR-76
Melrose Drive is connected between Spur Avenue and N. Santa Fe Avenue	Melrose Drive is not connected between Spur Avenue and N. Santa Fe Avenue

Footnotes:

- a. Regardless of the Circulation Element identifying SR-76 as a six-lane facility, it was analyzed as a four-lane facility since Caltrans does not have any planned improvements to widen to six lanes, nor is there any identified funding to implement the improvements.
- b. The College Boulevard bridge over the San Luis Rey River is not funded through the City's Thoroughfare and Traffic Signal Fee Program Update Study. Therefore, in the *Alternative 2* "Without Melrose Drive Extension" analysis, College Boulevard from North River Road to Adams Street was assumed a four-lane bridge.

For the Year 2035, impacts are identified in both the Master Transportation Roadway Plan scenario and the "Without Melrose Drive Extension" alternative. All impacts that are calculated in the Master Transportation Roadway Plan condition also occur without the connection of Melrose Drive. The one (1) exception is there is an impact to the College Avenue bridge over the San Luis Rey river under the four-lane configuration. Without the connection of Melrose Drive, congestion on College Avenue will continue to increase in the future without this alternative route over the river. Therefore, under the "Without Melrose Drive Extension" alternative analysis, this roadway is impacted in the Year 2035. It should be noted, however, that this impact also occurs under near-term cumulative conditions and mitigation is proposed by the Project to reduce this impact to the extent feasible.

The following section identifies the significance of impacts and recommended mitigation measures to address operating deficiencies.

16.1 Significance of Impacts

Based on the City of Oceanside significance criteria, the Project is calculated to have two (2) direct only impacts, four (4) direct and cumulative impacts, and 10 cumulative only impacts to study area intersections and street segments with the addition of Project traffic. **Table 16-1** lists the significantly impacted locations.

TABLE 16-1
SIGNIFICANT IMPACTS

MM#	ID	Location	Near-Term Direct and/or Cumulative		Year 2035	
			Direct	Cumulative	Master TRP	Without Melrose Drive Ext.
INTERSECTIONS						
TRA-1.	#2	Vandegrift Boulevard / North River Road	—	X	X	X
TRA-2.	#4	North River Road/ Leon Street	—	X	X	X
TRA-3.	#9	Douglas Drive/ North River Road	—	X	X	X
TRA-4.	#11	North River Road/ College Boulevard	X	X	X	X
TRA-5.	#16	SR-76 / Rancho Del Oro Drive	—	X	X	X
TRA-6.	#17	SR-76 / Old Grove Road	—	X	X	X
TRA-7.	#18	SR-76 / Frazee Road	—	X	X	X
TRA-8.	#19	SR-76 / College Boulevard	—	X	X	X
STREET SEGMENTS						
TRA-9.	#5	North River Road: North River Circle to Stallion Drive	X	X	—	—
TRA-10.	#6	North River Road: Stallion Drive to Wilshire Road	X	—	—	—
TRA-11.	#7	North River Road: Wilshire Road to Sleeping Indian Road	X	—	—	—
TRA-12.	#9	Douglas Avenue: SR-76 to El Camino Real	X	X	—	—
TRA-13.	#10	Douglas Avenue: El Camino Real to North River Road	—	X	—	—
TRA-14.	#11	College Boulevard: North River Road to Adams Street	—	X	—	X
TRA-15.	#12	College Boulevard: Adams Street to SR-76	—	X	—	—
TRA-16.	#13	College Boulevard: SR-76 to Frazee Road	—	X	X	X

General Notes:

1. MM = Mitigation measure
2. Master TRP = Master Transportation Roadway Plan

16.2 Mitigation Measures

The mitigation proposed in this section was developed to mitigate direct Project impacts, and also any cumulative impacts occurring under near-term and Year 2035 conditions. As previously mentioned, the majority of cumulative impacts in Year 2035 occur under both the Master Transportation Roadway Plan and the Without Melrose Drive Extension alternative. The mitigation proposed was identified to mitigate the Without Melrose Drive Extension alternative as this condition represents a more conservative assessment of the circulation network. The following mitigation measures presented in **Table 16–2** are recommended to mitigate the Project impacts:

TABLE 16–2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
INTERSECTIONS				
TRA-1.	#2	<u>Vandegrift Boulevard / North River Road</u> Currently, dual westbound left-turns are provided, but only a single northbound right-turn. No improvement plans are identified in the City’s Master Transportation Roadway Plan nor is there right-of-way available that would be feasible to obtain to widen this intersection. Three feasible options are proposed that would improve operations at this location. The applicant shall complete one of the following three options: Option 1) Rededicate the third northbound thru lane to be a shared thru/right-turn lane; Option 2) Provide a right-turn overlap phase for the northbound right-turn lane; or 3) Rededicate the third northbound thru lane to a second dedicated right-turn lane and provide an overlap phase. The improvements recommended in Options 1 and 2 above would partially mitigate the cumulative impact to this location. Option 3 would fully mitigate the cumulative impact. In addition, the Project shall conduct a traffic signal optimization study and implement the results along North River Road between Douglas Avenue and Vandegrift Boulevard. The purpose of this study is to update intersection signal timings in order to maximize intersection capacity, reduce driver delays, queues, and vehicle emissions, and improve the overall efficiency of traffic operations for the motoring public. The study will identify recommended adjustments to the signal timings, offsets, detection, and other parameters to improve intersection performance along the study corridor.	Direct & Cumulative	Partially (<i>Option 1</i>) Partially (<i>Option 2</i>) Fully (<i>Option 3</i>)
TRA-2.	#4	<u>North River Road / Leon Street</u> The applicant shall restripe the southbound approach to provide a dedicated right-turn lane and left-turn lane within the paved width. This would require the removal of on-street parking on the west side of the roadway for approximately 150 feet. As a part of mitigation for TRA-5, North River Road: North River Circle to Stallion Drive, additional through lanes would also be provided in the east/west direction. In addition, the Project shall pay a fair share contribution toward the future signalization of this intersection. Implementation of these improvements would mitigate the cumulative impact at this location.	Cumulative	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
TRA-3.	#9	<u>Douglas Drive/ North River Road</u> The City's Master Transportation Roadway Plan does not identify improvements for this intersection. Nor does the City's Thoroughfare and Traffic Signal Fee Program Update Study identify a funding mechanism for the Project to pay a fair share toward. Therefore, the Project applicant shall provide an eastbound right-turn overlap phase to mitigate the cumulative impact at this location.	Cumulative	Fully
TRA-4.	#11	<u>North River Road/ College Boulevard</u> This intersection is currently built with dual westbound to northbound right-turn lanes, and reciprocal southbound to eastbound left-turn lanes. Right-turn overlap (RTOL) phases are also provided to accommodate heavy right-turn movements. To fully mitigate the direct and cumulative impacts to below significant levels, additional lanes would be needed at this intersection. Right-of-way is constrained at this location and would be infeasible to obtain given the intersection is very proximate to the College Boulevard bridge across the San Luis Rey River. The City's Master Transportation Roadway Plan does indicate widening of the westbound (College Boulevard) approach to include an additional left-turn lane. However, the implementation of these planned improvements which would include widening of the bridge over the river by any one private development project would be economically infeasible. According to the City's Master Transportation Roadway Plan, this intersection is forecasted to operate at LOS E or F in the future. Per the adopted General Plan, this intersection is accepted at LOS F conditions. Although the City identifies improvements for this intersection, the City's Thoroughfare and Traffic Signal Fee Program Update Study does not provide a funding mechanism for the Project to pay a fair share toward. Therefore, the Project shall lengthen the southbound dual left-turn lanes by approximately 100 feet to provide additional storage for this heavy movement, thus removing turn vehicles from the southbound flow on North River Road. Implementation of this improvement would partially mitigate the direct and cumulative impacts at this intersection. In addition, the Project applicant shall conduct a traffic signal optimization study and implement the results along North River Road between Douglas Avenue and Vandegrift Boulevard. The purpose of this study is to update intersection signal timings in order to maximize intersection capacity, reduce driver delays, queues, and vehicle emissions, and improve the overall efficiency of traffic operations for the motoring public. The study will identify recommended adjustments to the signal timings, offsets, detection, and other parameters to improve intersection performance along the study corridor.	Direct & Cumulative	Partially
TRA-5.	#16	<u>SR-76 / Rancho Del Oro</u> One option to mitigate the impact would be to pay a fair share towards widening SR 76 to 6 lanes through this intersection. According to the City's Master Transportation Roadway Plan, SR-76 is proposed to be widened to six-lanes through this intersection in the future. Although the City identifies improvements for this intersection, right-of-way is not available to complete the widening, and the City's Thoroughfare and Traffic Signal Fee Program	Cumulative	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
		Update Study does not provide a funding mechanism for the widening for the Project to pay a fair share toward. Additionally, the intersection lies within Caltrans' jurisdiction. Caltrans does not have any plans/programs to fund and complete the widening that the Project could pay a fair share toward. Therefore, it is recommended that the Project applicant shall implement Adaptive Traffic Signal Controls on SR-76 within the study area to mitigate the cumulative impact along SR-76.		
TRA-6.	#17	<u>SR-76 / Old Grove Road</u> One option to mitigate the impact would be to pay a fair share towards widening SR 76 to 6 lanes through this intersection. According to the City's Master Transportation Roadway Plan, SR-76 is proposed to be widened to six-lanes through this intersection in the future. Although the City identifies improvements for this intersection, right-of-way is not available to complete the widening, and the City's Thoroughfare and Traffic Signal Fee Program Update Study does not provide a funding mechanism for the widening for the Project to pay a fair share toward. Additionally, the intersection lies within Caltrans' jurisdiction. Caltrans does not have any plans/programs to fund and complete the widening that the Project could pay a fair share toward. Therefore, it is recommended that the Project applicant shall implement Adaptive Traffic Signal Controls on SR-76 within the study area to mitigate the cumulative impact along SR-76.	Cumulative	Fully
TRA-7.	#18	<u>SR-76 / Frazee Road</u> One option to mitigate the impact would be to pay a fair share towards widening SR 76 to 6 lanes through this intersection. According to the City's Master Transportation Roadway Plan, SR-76 is proposed to be widened to six-lanes through this intersection in the future. Although the City identifies improvements for this intersection, right-of-way is not available to complete the widening, and the City's Thoroughfare and Traffic Signal Fee Program Update Study does not provide a funding mechanism for the widening for the Project to pay a fair share toward. Additionally, the intersection lies within Caltrans' jurisdiction. Caltrans does not have any plans/programs to fund and complete the widening that the Project could pay a fair share toward. Therefore, it is recommended that the Project applicant shall implement Adaptive Traffic Signal Controls on SR-76 within the study area to mitigate the cumulative impact along SR-76.	Cumulative	Fully
TRA-8.	#19	<u>SR-76 / College Boulevard</u> According to the City's Master Transportation Roadway Plan, this intersection is forecasted to operate at LOS E or F in the future. The SR-76/ College Boulevard intersection is proposed to be improved per the City Master Transportation Roadway Plan to provide an additional southbound thru lane and three northbound thru lanes with one dedicated right-turn lane with an overlap phase. It should be noted the Master Transportation Roadway Plan originally recommended dual northbound right-turn lanes, however, the design has been reconfigured to provide one right-turn lane. Per the adopted General Plan, this intersection is accepted at LOS E and F	Cumulative	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
		conditions with implementation of these improvements. The improvements to this intersection have been designed and a construction cost has been prepared. To mitigate the cumulative impact the Project applicant shall pay a fair share contribution toward the planned improvements based on the trips associated with the actual approved residential units using the formula provided in <i>Section 16.3</i> of this report.		
STREET SEGMENTS				
TRA-9.	#5	<u>North River Road: North River Circle to Stallion Drive</u> According to the City's Master Transportation Roadway Plan, this segment of North River Road is proposed to be widened to four lanes. To mitigate the Project's direct impact, the applicant shall complete one of the following two options: Option 1) The roadway is currently paved to Secondary Collector standards at 64 feet and provides approximately 84 feet of right-of-way, capable of accommodating four travel lanes and a two-way left-turn lane, per the City's roadway standards. It is currently striped to provide a 12-foot center turn lane, two 12-foot travel lanes, a 5-foot bike lane, 3-foot buffer, and 8-foot parking lane. Restriping this roadway to remove on-street parking and the bike lane buffer to provide four 11-foot lanes, maintain a 10-foot TWLTL, and maintain the 5-foot bike lanes would meet City Secondary Collector standards providing an LOS E capacity of 30,000 ADT would mitigate the cumulative impact along this roadway. A concept plan showing these improvements is provided on Figure 16-1. An example of this roadway design is the segment of Douglas Drive between Mission Avenue and El Camino Real. Option 2) The removal of on-street parking along this segment of North River Road may be an undesirable outcome of providing four travel lanes. The roadway could be restriped to provide two 11-foot eastbound travel lanes, an 11-foot TWLTL, one 11-foot westbound lane, 2-foot bike buffers, and 4-foot bike lanes in each direction while maintaining the 8-foot on-street parking on the north side of the roadway. This roadway design would provide an LOS E capacity of 20,000 ADT and would mitigate the cumulative impact along this roadway. A concept plan showing these improvements is provided on Figure 16-2.	Direct & Cumulative	Fully
TRA-10.	#6	<u>North River Road: Stallion Drive to Wilshire Road</u> According to the City's Master Transportation Roadway Plan, this segment of North River Road is proposed to be widened to four lanes. North River Road serves as the Project frontage road along this segment. The Master Transportation Roadway Plan identifies this segment as having a future classification of a Four-Lane Major Arterial. However, the Project proposes a General Plan Amendment to reclassify this roadway to Four-Lane Secondary Collector standards. Per the concept plan provided on Figure 13-1 of this report, the Project applicant shall dedicate right-of-way to Four-Lane Secondary Collector standards and construct two travel lanes separated by a raised median. Roundabouts shall be constructed at the westerly and easterly access intersections and a traffic signal shall be installed at the main access centered on the tentative map. In addition, the Project applicant shall widen North River Road at the main signalized access point to provide two through	Direct	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
		lanes in each direction. As shown in the analysis provided in <i>Section 13.1.3</i> of this report, LOS C or better operations are calculated at all Project access driveways with these planned improvements in the near-term. However, in the Year 2035 Without the Melrose Drive Extension the westerly roundabout is forecasted to operate at LOS F with a one-lane design. Improvements to widen this roundabout to two lanes would be needed once the traffic volumes amount to 21,900 total ADT. Therefore, the Project applicant shall construct a one-lane roundabout with a 150-foot radius, capable of accommodating two lanes in the future through median reconstruction and the Project applicant shall pay a fair share contribution toward the possible future two-lane roundabout improvements once the 21,900 ADT threshold has been met. The fair share contribution will be based on the trips associated with the actual approved residential units using the formula provided in <i>Section 16.3</i> of this report. It should be noted that the near-term volumes with the Project are forecasted at 15,708 ADT. The additional 5,300 trips that would trigger the two-lane roundabout would result from approximately 34% of ambient growth from other projects on the street system in the future.		
TRA-11.	#7	<u>North River Road: Wilshire Road to Sleeping Indian Road</u> According to the City's Master Transportation Roadway Plan, this segment of North River Road is proposed to be widened to four lanes. The Master Transportation Roadway Plan identifies this segment as having a future classification of a Four-Lane Major Arterial. However, the Project proposes a General Plan Amendment to reclassify this roadway to Four-Lane Secondary Arterial standards based on future volumes. This segment of North River Road exceeds the existing two-lane capacity by about 9%, triggering a cumulative impact. The Master Transportation Roadway Plan identifies this segment as having a future classification of a Four-Lane Major Arterial with an LOS E capacity of 40,000 ADT. However, future traffic volumes are expected to be less than one-half of the maximum capacity available on the roadway per this classification. Therefore, the Project applicant shall widen the North River Road/ Sleeping Indian Road intersection to provide ~~an~~ a 75-foot long eastbound dedicated left-turn lane. <u>The queue analysis shows a peak hour queue maximum of one vehicle in this lane.</u> Right-of-way acquisition may be required to complete this widening. The provision of this turn lane would provide a refuge lane for left-turning vehicles, thus improving the flow of eastbound thru traffic and reducing the potential for vehicular conflict due to the slowing of eastbound traffic. The improvements proposed at the easterly Project roundabout at Wilshire Road would also improve operations along this segment. The widening of this segment of North River Road to four lanes could potentially induce demand for drivers to use two-lane Sleeping Indian Road as a cut-through route through Bonsall and Fallbrook to/from I-15, which would be undesirable.	Direct	Fully
TRA-12.	#9	<u>Douglas Avenue: SR-76 to El Camino Real</u> According to the City's Master Transportation Roadway Plan, this segment of Douglas Avenue is identified as having a future classification of a Four-Lane Major Arterial. To mitigate the Project's potential direct and cumulative impacts, the Project applicant shall construct a raised median	Direct & Cumulative	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
		within the existing TWLTL to achieve a Four-Lane Major Road LOS E capacity of 40,000 ADT. Currently, a TWLTL is provided between Mission Avenue and El Camino Real. No driveways exist along this segment which would be constrained by a raised median. The intersection to the mobile home parks at Madra Lane would be accommodated by a break in the median providing left-turn pockets. Implementation of this improvement would mitigate the direct and cumulative impacts at this location.		
TRA-13.	#10	<u>Douglas Avenue: El Camino Real to North River Road</u> According to the City's Master Transportation Roadway Plan, this segment of Douglas Avenue is proposed to be widened to Six-Lane Major Arterial standards. Improvement plans and funding for this widening are included in the City's Thoroughfare and Traffic Signal Fee Program Update Study. Therefore, in order to mitigate the potential cumulative impact, the Project applicant shall pay a fair share contribution toward the widening of this segment of Douglas Avenue to Six-Lane Major Arterial Standards per the City's Master Transportation Roadway Plan based on the trips associated with the actual approved residential units using the formula provided in <i>Section 16.3</i> of this report. Since the widening of Douglas Avenue is funded by mandatory transportation impact fees, the Project should be credited any additional fair share contribution against those fees. It should be noted that with the connection of the Melrose Drive extension, no impact would occur along this street segment.	Cumulative	Fully
TRA-14.	#11	<u>College Boulevard: North River Road to Adams Street</u> To fully mitigate the cumulative impact to below significant levels, additional lanes would be needed along this roadway segment. According to the City's Master Transportation Roadway Plan, this segment of College Boulevard is proposed to be widened to six lanes. The Master Transportation Roadway Plan identifies this segment as having a future classification of a Six-Lane Major Arterial. However, no improvement plans are identified in the City's Thoroughfare and Traffic Signal Fee Program Update Study nor is a funding mechanism in place for the Project to pay a fair share toward. The widening of the roadway includes the College Boulevard Bridge over the San Luis Rey River which would require the acquisition of additional right-of-way, rendering this improvement economically infeasible for any one private development project. Therefore, the Project applicant shall conduct a traffic signal optimization study and implement the results along College Boulevard between North River Road and SR-76. The purpose of this study is to update intersection signal timings in order to maximize intersection capacity, reduce driver delays, queues, and vehicle emissions, and improve the overall efficiency of traffic operations for the motoring public. The study will identify recommended adjustments to the signal timings, offsets, detection, and other parameters to improve intersection performance along the study corridor. The improvements recommended would partially mitigate the cumulative impact to this segment of College Boulevard.	Cumulative	Partially
TRA-15.	#12	<u>College Boulevard: Adams Street to SR-76</u> According to the City's Master Transportation Roadway Plan, this segment	Cumulative	Fully

TABLE 16-2
IMPACT/MITIGATION SUMMARY

MM#	ID	Location	Impact Type	Mitigated to Below Significant Levels?
		of College Boulevard is built to its ultimate classification as a Six-Lane Major Arterial. According to the City's Master Transportation Roadway Plan, the SR-76/ College Boulevard intersection is proposed to be improved per the City Master Transportation Roadway Plan to provide an additional southbound thru lane and three northbound thru lanes with two dedicated right-turn lanes with an overlap phase. The mitigation recommended at the SR-76/ College Boulevard (TRA-8) intersection would improve operations along this roadway segment by improving a constrained intersection along the segment. The improvements recommended for the cumulative intersection impact would mitigate the cumulative impact to this segment of College Boulevard. It should also be noted that the Year 2035 volumes on this segment are forecasted to be lower than near-term volumes. Thus, a significant impact is not calculated under Year 2035 conditions.		
TRA-16.	#13	<u>College Boulevard: SR-76 to Frazee Road</u> According to the City's Master Transportation Roadway Plan, this segment of College Boulevard is built to its ultimate classification as a Six-Lane Major Arterial. According to the City's Master Transportation Roadway Plan, the SR-76/ College Boulevard intersection is proposed to be improved per the City Master Transportation Roadway Plan to provide an additional southbound thru lane and three northbound thru lanes with two dedicated right-turn lanes with an overlap phase. The mitigation recommended at the SR-76/ College Boulevard (TRA-8) intersection would improve operations along this roadway segment by improving a constrained intersection along the segment. The improvements recommended for the cumulative intersection impact would mitigate the cumulative impact to this segment of College Boulevard.	Cumulative	Fully

Footnotes:

- a. The max ADT/occupied unit threshold is tied only to the number of dwelling units, and does not include the non-residential portions of the Project. Hence, this location shows a dwelling unit amount greater than the proposed number of units.

General Notes:

1. MM# = Mitigation Measure number
2. ADT = Average daily trips
3. It should be noted that the mitigation represented in the table above would also mitigate the impacts calculated under the Year 2035 Master Transportation Roadway Plan condition.

16.3 Mitigation Phasing

An analysis was conducted at each of the impacted locations to determine the number of units that could be built before a significant Project impact would occur. The Project consists of various types of dwelling units and non-residential development. In order to determine the timing of when each mitigation measure is needed, the entire Project was converted to “Equivalent Dwelling Units” (EDU). A weighted average trip rate was determined. The Total External Project ADT / Total number of Residential Units equals weighted average trip rate:

i.e., 7,771 trips / 689 DU or, 11.28 trips per DU.

A trial and error exercise was conducted to determine the number of EDUs which could be built before each impact would occur. Many of the impacted locations occur under Existing + Project, Existing + Cumulative Projects + Project, and Year 2035 With Project conditions. The Existing + Cumulative Projects + Project scenario was selected for identifying the Project EDU “trigger”. This scenario was chosen since it would be most accurate to assume some ambient growth on the road network prior to opening day of the Project, but not quite the complete buildout of the General Plan land uses by Year 2035. For any impact that only occurs in the Year 2035, Year 2035 conditions were used in the EDU trigger analysis. Separate triggers were also identified for impacts occurring in Year 2035 only without the Melrose Drive extension alternative.

Table 16–3 summarizes the number of EDUs that may be built and occupied, before each mitigation measure is required at intersections and street segments.

TABLE 16-3
MITIGATION PHASING ANALYSIS

MM#	ID	Location	Near-Term		Year 2035 (Master Trans. Roadway Plan)		Year 2035 (Without Melrose Dr Ext)	
			Total Project ADT	EDU	Total Project ADT	EDU	Total Project ADT	EDU
INTERSECTIONS								
TRA-1.	#2	Vandegrift Boulevard / North River Road	233 ADT	21 EDU	—	—	—	—
TRA-2.	#4	North River Road/ Leon Street	—	—	1,010 ADT	90 EDU	78 ADT	7 EDU
TRA-3.	#9	Douglas Drive/ North River Road	—	—	3,264 ADT	289 EDU	3,476 ADT	289 EDU
TRA-4.	#11	North River Road/ College Boulevard	855 ADT	76 EDU	—	—	—	—
TRA-5.	#16	SR-76 / Rancho Del Oro Drive	1,943 ADT	172 EDU	—	—	—	—
TRA-6.	#17	SR-76 / Old Grove Road	—	—	4,041 ADT	358 EDU	4,457 ADT	371 EDU
TRA-7.	#18	SR-76 / Frazee Road	—	—	1,865 ADT	165 EDU	1,872 ADT	156 EDU
TRA-8.	#19	SR-76 / College Boulevard	699 ADT	62 EDU	—	—	—	—

TABLE 16-3
MITIGATION PHASING ANALYSIS

MM#	ID	Location	Near-Term		Year 2035 (Master Trans. Roadway Plan)		Year 2035 (Without Melrose Dr Ext)	
			Total Project ADT	EDU	Total Project ADT	EDU	Total Project ADT	EDU
STREET SEGMENTS								
TRA-9.	#5	North River Road: North River Circle to Stallion Drive	400 ADT	35 EDU	—	—	—	—
TRA-10.	#6	North River Road: Stallion Drive to Wilshire Road	Frontage Improvement		Roundabout Widening: 21,000 Total ADT on North River Road			
TRA-11.	#7	North River Road: Wilshire Road to Sleeping Indian Road	800 ADT	74 EDU	—	—	—	—
TRA-12.	#9	Douglas Avenue: SR-76 to El Camino Real	444 ADT	39 EDU	—	—	—	—
TRA-13.	#10	Douglas Avenue: El Camino Real to North River Road	5,333 ADT	473 EDU	—	—	—	—
TRA-14.	#11	College Boulevard: North River Road to Adams Street	1,600 ADT	142 EDU	—	—	—	—
TRA-15.	#12	College Boulevard: Adams Street to SR-76	2,128 ADT	189 EDU	—	—	—	—
TRA-16.	#13	College Boulevard: SR-76 to Frazee Road	4,316 ADT	383 EDU	—	—	—	—

Footnotes:

a. .

General Notes:

1. MM# = Mitigation Measure number
2. ADT = Average daily trips by the Project
3. EDU = Equivalent dwelling units calculated per Section 16.3.

16.4 Fair Share Calculations

Table 16–4 provides the fair share calculations. Fair share calculations were completed using the trips associated with the development of 689 DU and the Year 2035 With Project traffic volumes assuming both the Master Transportation Roadway Plan and the Without Melrose Drive Extension alternative. The formula used to calculate the fair share percentages is based on the regionally accepted standard:

$$\text{Fair Share \%} = \frac{\text{Project Traffic Volumes}}{\text{Buildout (With Project) Traffic Volumes} - \text{Existing Traffic Volumes}}$$

For intersections, the combined AM + PM peak hour volumes were used to calculate the fair share percentages, and for street segments, the ADT volumes were used.

The fair share percentages are shown to decrease without the connection of the Melrose Drive extension. This occurs as a result of both the increases in the Project trips to the impacted locations, and the increase in the Year 2035 baseline buildout volumes without this connection.

TABLE 16–4
FAIR SHARE CALCULATIONS

MM#	Location	Master Transportation Roadway Plan		Without Melrose Drive Extension	
		Formula	Fair Share % ^a	Formula	Fair Share % ^a
TRA-2	Intersection #4. North River Road/ Leon Street	$\frac{810}{(3,840-1,995)} =$	43.9%	$\frac{994}{(4,554-1,995)} =$	38.8%
TRA-5	Intersection #16. SR-76/ Rancho Del Oro Drive	$\frac{119}{(10,949-8,655)} =$	5.2%	$\frac{119}{(10,949-8,655)} =$	5.2%
TRA-6	Intersection #17. SR-76/ Old Grove Road	$\frac{134}{(9,714-8,047)} =$	8.0%	$\frac{134}{(9,714-8,047)} =$	8.0%
TRA-7	Intersection #18. SR-76/ Frazee Road	$\frac{160}{(8,080-6,927)} =$	13.9%	$\frac{160}{(8,080-6,927)} =$	13.9%
TRA-8	Intersection #19. SR-76/ College Boulevard	$\frac{438}{(14,813-12,983)} =$	23.9%	$\frac{624}{(15,634-12,983)} =$	23.5%
TRA-10	Segment #6. North River Road: Stallion Drive to Wilshire Road (North River Road/Westerly Roundabout)	$\frac{4,740}{(18,740-9,690)} =$	54.2%	$\frac{5,828}{(22,628-9,690)} =$	45.0%

TABLE 16-4
FAIR SHARE CALCULATIONS

MM#	Location	Master Transportation Roadway Plan		Without Melrose Drive Extension	
		Formula	Fair Share % ^a	Formula	Fair Share % ^a
TRA-15	Segment #10. Douglas Avenue: El Camino Real to North River Road	$\frac{1,166}{(38,666-35,050)} =$	32.2%	$\frac{1,166}{(42,466-35,050)} =$	15.7%

16.5 Post-Mitigation Operations

Table 16-5 and **Table 16-6** provide a summary of the impacted study area intersections and street segments, the proposed mitigation measures for each location, and the post-mitigation analysis results, respectively. Many of the impacted locations occur under Existing + Project, Existing + Cumulative Projects + Project, and Year 2035 With Project conditions. The Existing + Cumulative Projects + Project scenario was selected for depicting the near-term pre- and post-mitigation operations. This scenario was chosen since it would be most accurate to assume some ambient growth on the road network prior to opening day of the Project, but not quite the complete buildout of the General Plan land uses by Year 2035. For any impact that only occurs in the Year 2035, pre- and post-mitigation operations were shown for both the Master Transportation Roadway Plan and Without Melrose Drive Extension scenarios.

Appendix U contains the mitigated intersection analysis worksheets.

TABLE 16–5
POST-MITIGATION ANALYSIS
INTERSECTIONS

MM#	Intersection	Peak Hour	Near-Term Pre-Mitigation Operations				Post Mitigation		Year 2035 (Master Trans. Roadway Plan) Pre-Mitigation Operations ^a				Post Mitigation		Year 2035 (Without Melrose Drive Extension) Pre-Mitigation Operations ^a				Post Mitigation		Mitigated to Below a Level of Significance?
			Without Project		With Project				Without Project		With Project				Without Project		With Project				
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
TRA-1	2. Vandegrift Blvd/ North River Rd	AM	—	—	—	—	—	—	—	—	—	—	—	—	43.4	D	84.8	F	50.6	D	Fully <i>(Option 3 from Table 16–1)</i>
		PM	56.8	E	148.1	F	49.0	D	78.5	E	166.0	F	54.4	D	118.4	F	230.3	F	69.1	E	
TRA-2	4. North River Rd/ Leon St ^b	AM	—	—	—	—	—	—	55.5	F	165.5	F	27.3	D	77.8	F	266.1	F	30.7	D	Yes
		PM	—	—	—	—	—	—	59.9	F	423.1	F	31.2	D	217.8	F	300.0	F	62.0	F	
TRA-3	9. Douglas Dr/ North River Rd	AM	—	—	—	—	—	—	64.6	E	69.7	E	63.0	E	64.6	E	69.7	E	63.0	E	Yes
		PM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TRA-4	11. North River Rd/ College Blvd	AM	40.9	D	64.3	E	c	c	41.9	D	57.6	E	c	c	49.9	D	77.8	F	c	c	Partially
		PM	59.2	E	79.3	E			57.1	E	68.4	E			69.2	E	87.8	F			
TRA-5	16. SR-76/ Rancho Del Oro Dr	AM	72.1	E	77.1	E	c	c	118.3	F	124.3	F	c	c	118.3	F	124.3	F	c	c	Yes
		PM	117.1	F	123.7	F			167.0	F	174.0	F			167.0	F	174.0	F			
TRA-6	17. SR-76/ Old Grove Rd	AM	—	—	—	—	—	—	97.1	F	101.5	F	c	c	97.1	F	101.5	F	c	c	Yes
		PM	—	—	—	—	—	—	75.5	E	81.1	F			75.5	E	81.1	F			
TRA-7	18. SR-76/ Frazee Rd	AM	—	—	—	—	—	—	—	—	—	—	c	c	—	—	—	—	c	c	Yes
		PM	—	—	—	—	—	—	64.1	E	71.9	E			64.1	E	71.9	E			
TRA-8	19. SR-76/ College Blvd	AM	74.3	E	82.0	F	73.7	E	84.7	F	88.7	F	76.3	E	100.4	F	110.9	F	80.0	F	Yes
		PM	140.4	F	163.2	F	95.2	F	158.8	F	172.1	F	93.2	F	173.2	F	196.3	F	112.7	F	

Footnotes:

a. For locations where impacts occur in the near-term and Year 2035 scenario, Year 2035 LOS is provided. For impacts only occurring in near-term, near-term LOS is provided.

b. A traffic signal is not warranted by the Project. In the Year 2035, ambient growth on the system would warrant a signal See *Section 15.0* of this report for more details. Therefore, the post-mitigation analysis shows the proposed southbound dedicated right-turn lane and left-turn lane operations. See TRA-2 in *Table 16–1*.

c. Adaptive Signal Timing

General Notes:

1. MM# = Mitigation measure number.

2. Sig = Significant impact post-mitigation.

3. Mitigation provided for locations currently operating at LOS E or F are required to improve operations to better than or equal to pre-project conditions only.

TABLE 16–6
POST-MITIGATION ANALYSIS
STREET SEGMENTS

MM#	Street Segment	Capacity	Near-Term Pre-Mitigation Operations				Post Mitigation		Year 2035 (Master Trans. Roadway Plan) Pre-Mitigation Operations ^a				Post Mitigation		Year 2035 (Without Melrose Drive Extension) Pre-Mitigation Operations ^a				Post Mitigation		Mitigated to Below a Level of Significance
			Without Project		With Project				Without Project		With Project				Without Project		With Project				
			ADT	LOS	ADT	LOS	Capacity	LOS	ADT	LOS	ADT	LOS	Capacity	LOS	ADT	LOS	ADT	LOS	Capacity	LOS	
TRA-9	5. North River Rd: North River Cir to Stallion Dr	15,000	13,140	E	18,968	F	4-lane 30,000	C	14,800	—	19,540	—	4-lane 30,000	—	17,600	—	23,428	—	4-lane 30,000	—	Yes ^a
							3-lane 20,000	E		—		—	3-lane 20,000	—		—		3-lane 20,000	—	Yes ^a	
TRA-10	6. North River Rd: Stallion Dr to Wilshire Rd	10,000	9,880	E	15,708	F	—	—	14,000	—	18,740	—	—	—	16,800	—	22,628	—	—	—	Yes ^b
TRA-11	7. North River Rd: Wilshire Rd to Sleeping Indian Road	10,000	9,420	E	11,363	E	—	—	12,400	—	15,431	—	—	—	8,900	—	10,843	—	—	—	Yes ^c
TRA-12	9. Douglas Ave: SR-76 to El Camino Real	30,000	25,890	E	26,589	E	40,000	C	—	—	—	—	—	—	—	—	—	—	—	—	Yes
TRA-13	10. Douglas Ave: El Camino Real to North River Rd	40,000	36,950	E	38,116	E	50,000	C	—	—	—	—	—	—	—	—	—	—	—	—	Yes
TRA-14	11. College Blvd: North River Rd to Adams St	40,000	47,390	F	51,276	F	—	—	—	—	—	—	—	—	45,100	E	48,986	E	—	—	Partially ^d
TRA-15	12. College Blvd: Adams St to SR-76	50,000	47,350	E	51,002	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Yes ^e
TRA-16	13. College Blvd: SR-76 to Frazee Rd	40,000	—	—	—	—	—	—	34,500	D	35,976	E	—	—	36,500	E	37,976	E	—	—	Yes ^e

Footnotes:

- a. Implementation of a three-lane concept would reduce the impact to below significant levels along this roadway by reducing the V/C to pre-project conditions.
- b. Implementation of the frontage improvements recommended in *Table 16–1* mitigates the impact along this segment resulting in LOS C or better results during the peak hours along this corridor.
- c. Implementation of the intersection improvements recommended in *Table 16–1* mitigates the impact along this segment resulting in LOS D or better results during the peak hours along this corridor.
- d. Implementation of the signal optimization study results would partially mitigate the impact along this segment.
- e. Implementation of TRA-8 would mitigate the impact along this segment.

General Notes:

- 1. MM# = Mitigation measure number.
- 2. Sig = Significant impact post-mitigation.
- 3. Mitigation provided for locations currently operating at LOS E or F are required to improve operations to better than or equal to pre-project conditions only.



REV. 4/25/2018
N:\2596\Concept\LLG2596-16-1.dwg

LINSCOTT
LAW &
GREENSPAN
engineers



Figure 16-1
Conceptual Improvement
Four-lane North River Road
Vandegrift Boulevard to Stallion Drive
NORTH RIVER FARMS



End of Report

TECHNICAL APPENDICES
NORTH RIVER FARMS

Oceanside, California
~~June 27~~July 23, 2018

LLG Ref. 3-16-2596

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APPENDICES

APPENDIX

- A. Intersection and Segment Count Sheets, Caltrans Traffic Data
- B. City of Oceanside Roadway Classification Table
- C. Intersection Analysis Worksheets – Existing
- D. SANDAG Select Zone Assignment
- E. Intersection Analysis Worksheets – Existing + Project
- F. Historical Caltrans SR-76 Traffic Volumes
- G. Near-Term Cumulative Projects Assignment
- H. Intersection Analysis Worksheets – Existing + Near-Term Cumulative Projects
- I. Intersection Analysis Worksheets – Existing + Near-Term Cumulative Projects + Project
- J. Intersection Analysis Worksheets – Year 2035 Without Project
- K. Intersection Analysis Worksheets – Year 2035 With Project
- L. Roundabout Truck Turning Analysis
- M. Project Driveway Traffic Volumes – Pass-By Trips
- N. Intersection Analysis Worksheets – Project Access Intersections
- O. Melrose Drive Extension Documentation
- P. Intersection Analysis Worksheets – Year 2035 Without Project (Without Melrose Drive Extension)
- Q. Intersection Analysis Worksheets – Year 2035 With Project (Without Melrose Drive Extension)
- R. Intersection Analysis Worksheets – Year 2035 With Project (Without Melrose Drive Extension) – Project Access Intersections
- S. Intersection Analysis Worksheets – North River Road/ Leon Road (Signalized)
- T. Signal Warrant Analysis
- U. Intersection Analysis Worksheets – Post-Mitigation

APPENDIX A

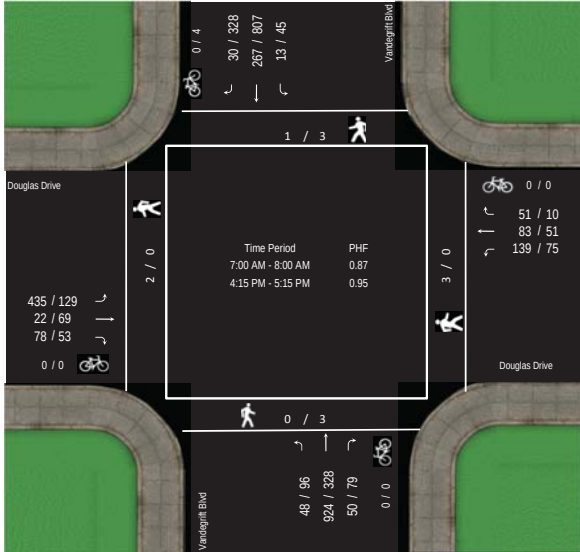
INTERSECTION & STREET SEGMENT COUNT SHEETS, CALTRANS TRAFFIC DATA

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Douglas Drive @ Vandegrift Blvd
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503

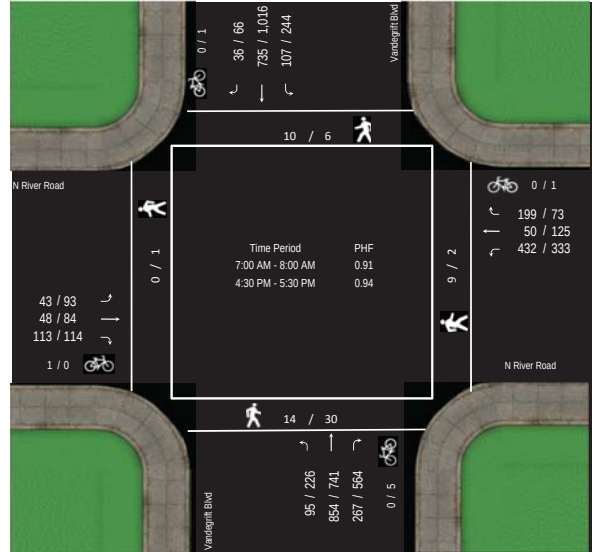


Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: N River Road @ Vandegrift Blvd
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Douglas Drive @ Vandegrift Blvd

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	6	58	6	19	13	33	11	273	8	25	4	130
7:15 AM	9	69	2	13	24	43	9	274	10	20	7	134
7:30 AM	7	66	3	13	22	39	7	203	13	16	6	86
7:45 AM	8	74	2	6	24	24	23	174	17	17	5	85
8:00 AM	4	45	2	10	19	21	31	108	18	14	9	27
8:15 AM	5	53	4	4	22	24	14	86	8	23	12	26
8:30 AM	5	46	2	5	21	23	16	94	12	14	7	23
8:45 AM	8	47	4	4	16	16	10	49	15	18	11	31
Total	52	458	25	74	161	223	121	1,261	101	147	61	542
AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.87												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	30	267	13	51	83	139	50	924	48	78	22	435
PHF	0.83	0.90	0.54	0.67	0.86	0.81	0.54	0.84	0.71	0.78	0.79	0.81
Movement PHF	0.92			0.85			0.87			0.83		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	74	205	7	4	6	19	13	53	24	14	10	24
4:15 PM	78	213	16	0	7	15	22	92	28	9	14	31
4:30 PM	99	207	11	2	17	22	24	68	20	17	22	34
4:45 PM	67	195	7	5	16	16	13	82	22	11	22	27
5:00 PM	84	192	11	3	11	22	20	86	26	16	11	37
5:15 PM	61	156	14	2	15	19	22	97	21	22	25	28
5:30 PM	50	150	8	2	16	23	25	72	34	19	18	35
5:45 PM	32	109	9	4	16	19	32	97	23	27	16	28
Total	545	1,427	83	22	104	155	171	647	198	135	138	244
PM Intersection Peak Hour : 4:15 PM - 5:15 PM Intersection PHF : 0.95												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	328	807	45	10	51	75	79	328	96	53	69	129
PHF	0.83	0.947	0.703	0.5	0.75	0.852	0.823	0.891	0.857	0.779	0.784	0.872
Movement PHF	0.93			0.83			0.89			0.86		

Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: N River Road @ Vandegrift Blvd

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	9	220	24	61	12	118	37	222	27	42	11	18
7:15 AM	7	206	41	53	15	102	66	242	29	38	8	7
7:30 AM	10	136	18	42	8	88	70	210	13	15	11	8
7:45 AM	10	173	24	43	15	124	94	180	26	18	18	10
8:00 AM	17	188	16	29	15	144	132	146	24	32	16	12
8:15 AM	7	172	19	38	10	93	45	125	23	23	6	9
8:30 AM	4	123	13	21	10	60	46	101	24	14	11	3
8:45 AM	7	152	18	15	6	71	47	124	23	21	5	12
Total	71	1,370	173	302	91	800	537	1,350	189	203	86	79
AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.91												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	36	735	107	199	50	432	267	854	95	113	48	43
PHF	0.90	0.84	0.65	0.82	0.83	0.87	0.71	0.88	0.82	0.67	0.67	0.60
Movement PHF	0.86			0.89			0.90			0.72		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	18	243	60	25	14	85	103	156	45	25	22	32
4:15 PM	16	277	74	16	19	75	126	181	58	24	14	17
4:30 PM	16	232	76	15	33	94	124	165	43	28	26	15
4:45 PM	24	291	70	32	27	70	148	190	62	29	20	15
5:00 PM	6	244	49	11	37	92	145	182	62	36	16	33
5:15 PM	20	249	49	15	28	77	147	204	59	21	22	30
5:30 PM	14	220	36	15	29	84	134	190	47	29	21	14
5:45 PM	18	216	38	18	21	72	138	217	69	38	18	33
Total	132	1,972	452	147	208	649	1,065	1,485	445	230	159	189
PM Intersection Peak Hour : 4:30 PM - 5:30 PM Intersection PHF : 0.94												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	66	1,016	244	73	125	333	564	741	226	114	84	93
PHF	0.69	0.873	0.803	0.57	0.845	0.886	0.953	0.908	0.911	0.792	0.808	0.705
Movement PHF	0.86			0.93			0.93			0.86		

Location: North River Road @ Los Morros Way/Waterview Way
Date of Count: Wednesday, April 20, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0508



Location: N River Road @ Leon Street
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 15-0503



Location: North River Road @ Los Morros Way/Waterview Way

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	10	0	1	0	155	1	2	0	9	0	63	0
7:15 AM	9	0	0	0	127	1	0	0	17	0	92	1
7:30 AM	5	0	2	0	135	0	2	0	9	0	100	0
7:45 AM	3	0	0	1	150	0	2	0	10	1	123	2
8:00 AM	9	0	1	1	181	3	2	0	4	1	99	1
8:15 AM	8	0	1	0	110	0	1	0	7	0	66	1
8:30 AM	3	0	0	0	79	0	0	0	7	1	62	2
8:45 AM	4	0	1	0	57	1	1	0	4	1	50	1
Total	51	0	6	2	994	6	10	0	67	4	655	8
AM Intersection Peak Hour : 7:15 AM - 8:15 AM Intersection PHF : 0.91												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	26	0	3	2	593	4	6	0	40	2	414	4
PHF	0.72	0.38	0.38	0.50	0.82	0.33	0.75	0.59	0.59	0.50	0.84	0.50
Movement PHF	0.73			0.81			0.68			0.83		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	6	0	0	0	75	0	4	0	6	2	150	2
4:15 PM	3	1	0	0	82	1	4	1	6	5	184	3
4:30 PM	3	0	0	2	106	0	2	0	8	2	161	5
4:45 PM	5	0	3	1	83	3	4	0	8	4	169	3
5:00 PM	9	0	0	2	109	1	1	0	8	1	167	4
5:15 PM	7	0	2	0	93	1	4	0	6	4	186	6
5:30 PM	3	1	2	1	129	3	3	0	8	2	147	3
5:45 PM	7	0	1	1	105	2	2	0	6	0	162	2
Total	43	2	8	7	782	11	24	1	56	20	1,326	28
PM Intersection Peak Hour : 5:00 PM - 6:00 PM Intersection PHF : 0.97												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	26	1	5	4	436	7	10	0	28	7	662	15
PHF	0.72	0.25	0.625	0.5	0.845	0.583	0.625	0.875	0.875	0.438	0.89	0.625
Movement PHF	0.89			0.84			0.86			0.87		

Location: N River Road @ Leon Street

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Eastbound			TOTAL		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	41	18	4	108						48	8	227
7:15 AM	26	20	9	111						63	13	242
7:30 AM	20	15	14	126						52	10	237
7:45 AM	14	12	14	93						60	15	208
8:00 AM	29	17	5	72						48	23	194
8:15 AM	20	11	6	66						52	6	161
8:30 AM	22	8	1	57						44	12	144
8:45 AM	11	6	5	46						38	6	112
Total	183	107	58	679						405	93	1,525
AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.94												
	Southbound			Westbound			Eastbound			TOTAL		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	101	65	41	438						223	46	914
PHF	0.62	0.81	0.73	0.87						0.88	0.77	0.94
Movement PHF	0.70			0.86			0.88			0.94		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Eastbound			TOTAL		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	17	13	12	83						110	25	260
4:15 PM	12	12	12	71						131	20	258
4:30 PM	16	10	15	85						133	29	288
4:45 PM	21	12	8	72						141	21	275
5:00 PM	12	10	8	77						100	25	232
5:15 PM	22	14	12	67						101	24	240
5:30 PM	24	7	12	73						100	32	248
5:45 PM	14	5	17	70						72	24	202
Total	138	83	96	598						888	200	2,003
PM Intersection Peak Hour : 4:00 PM - 5:00 PM Intersection PHF : 0.94												
	Southbound			Westbound			Eastbound			TOTAL		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	66	47	47	311						515	95	1081
PHF	0.79	0.904	0.783	0.915						0.913	0.819	0.94
Movement PHF	0.86			0.90			0.94			0.94		

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: N River Road @ Stallion Drive

Date of Count: Thursday, April 14, 2016

Analysts: LVCD

Weather: Sunny

AVC Proj No: 15-0503



Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Wilshire Road @ N River Road

Date of Count: Thursday, April 14, 2016

Analysts: LVCD

Weather: Sunny

AVC Proj No: 16-0503



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: N River Road @ Stallion Drive

AM Period (7:00 AM - 9:00 AM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
7:00 AM	0	0	0	112		66	0	178	
7:15 AM	2	0	1	118		83	0	204	
7:30 AM	3	0	0	137		65	2	207	
7:45 AM	2	1	0	105		71	1	180	
8:00 AM	0	1	1	77		65	0	144	
8:15 AM	1	0	0	71		63	0	135	
8:30 AM	1	1	0	57		52	0	111	
8:45 AM	1	1	0	50		43	1	96	
Total	10	4	2	727		508	4	1,255	

AM Intersection Peak Hour : 7:00 AM - 8:00 AM					Intersection PHF : 0.93				
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	7	1	1	472		285	3	769	
PHF	0.58	0.25	0.25	0.86		0.86	0.38	0.93	
Movement PHF	0.67		0.86			0.87		0.93	

PM Period (4:00 PM - 6:00 PM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
4:00 PM	2	0	0	93		123	0	218	
4:15 PM	1	0	0	82		141	2	226	
4:30 PM	1	0	0	99		143	0	243	
4:45 PM	1	0	1	79		149	4	234	
5:00 PM	0	0	0	85		110	0	195	
5:15 PM	0	0	0	79		113	2	194	
5:30 PM	0	0	1	85		105	2	193	
5:45 PM	2	1	0	85		72	5	165	
Total	7	1	2	687		956	15	1,668	

PM Intersection Peak Hour : 4:00 PM - 5:00 PM					Intersection PHF : 0.95				
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	5	0	1	353		556	6	921	
PHF	0.63	0.00	0.25	0.891		0.933	0.375	0.95	
Movement PHF	0.63		0.89			0.92		0.95	

Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Wilshire Road @ N River Road

AM Period (7:00 AM - 9:00 AM)									
	Southbound		Westbound			Northbound		Eastbound	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	9	0	1	2	103	0	0	0	63
7:15 AM	1	0	3	2	118	0	0	0	77
7:30 AM	9	0	4	6	128	0	0	0	61
7:45 AM	6	0	2	3	99	0	0	0	65
8:00 AM	4	0	3	3	74	0	0	0	60
8:15 AM	4	0	3	1	67	0	0	0	54
8:30 AM	7	0	2	8	50	0	0	0	48
8:45 AM	6	0	7	4	44	0	0	0	37
Total	46	0	25	29	683	0	0	0	465

AM Intersection Peak Hour : 7:00 AM - 8:00 AM					Intersection PHF : 0.92				
	Southbound		Westbound			Northbound		Eastbound	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	25	0	10	13	448	0	0	0	266
PHF	0.69	0.00	0.63	0.54	0.88	0.00	0.00	0.86	0.71
Movement PHF	0.67		0.86		#DIV/0!		0.86		0.92

PM Period (4:00 PM - 6:00 PM)									
	Southbound		Westbound			Northbound		Eastbound	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	16	0	5	2	77	0	0	0	118
4:15 PM	8	0	2	1	74	0	0	0	138
4:30 PM	18	0	7	3	81	0	0	0	140
4:45 PM	5	0	5	7	75	0	0	0	143
5:00 PM	13	0	7	0	72	0	0	0	102
5:15 PM	9	0	4	3	70	0	0	0	107
5:30 PM	21	0	11	3	65	0	0	0	100
5:45 PM	17	0	7	2	68	0	0	0	69
Total	107	0	48	21	582	0	0	0	917

PM Intersection Peak Hour : 4:00 PM - 5:00 PM					Intersection PHF : 0.93				
	Southbound		Westbound			Northbound		Eastbound	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	47	0	19	13	307	0	0	0	539
PHF	0.65	0.00	0.679	0.464	0.948	0.00	0.00	0.942	0.708
Movement PHF	0.66		0.95		#DIV/0!		0.93		0.93



Location: N River Road @ Sleeping Indian Road
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 15-0503



Location: N River Road @ Hwy 76/Mission Ave
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Location: N River Road @ Sleeping Indian Road

AM Period (7:00 AM - 9:00 AM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
7:00 AM	24	10	2	81		56	3	176	
7:15 AM	28	7	2	95		78	5	215	
7:30 AM	29	3	3	101		64	6	206	
7:45 AM	25	4	2	72		59	9	171	
8:00 AM	24	1	7	55		56	6	149	
8:15 AM	12	2	0	55		51	7	127	
8:30 AM	19	2	2	34		46	5	108	
8:45 AM	18	0	1	34		40	4	97	
Total	179	29	19	527		450	45	1,249	

AM Intersection Peak Hour : 7:00 AM - 8:00 AM					Intersection PHF : 0.89				
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	106	24	9	349		257	23	768	
PHF	0.91	0.60	0.75	0.86		0.82	0.64	0.89	
Movement PHF	0.93		0.86			0.84		0.89	

PM Period (4:00 PM - 6:00 PM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
4:00 PM	16	4	4	62		115	16	217	
4:15 PM	16	3	2	62		127	15	225	
4:30 PM	14	6	4	68		124	30	246	
4:45 PM	11	3	3	59		133	26	235	
5:00 PM	13	5	3	62		99	20	202	
5:15 PM	8	7	7	67		84	21	194	
5:30 PM	11	3	3	47		88	20	172	
5:45 PM	13	6	2	51		67	19	158	
Total	102	37	28	478		837	167	1,649	

PM Intersection Peak Hour : 4:00 PM - 5:00 PM					Intersection PHF : 0.94				
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	57	16	13	251		499	87	923	
PHF	0.89	0.667	0.813	0.923		0.938	0.725	0.94	
Movement PHF	0.91		0.92			0.92		0.94	



Location: N River Road @ Hwy 76/Mission Ave

AM Period (7:00 AM - 9:00 AM)									
	Southbound		Northbound			Eastbound			
	Right	Thru	Thru	Left		Right	Left	TOTAL	
7:00 AM	25	465	178	12		11	15	706	
7:15 AM	33	476	185	28		14	28	764	
7:30 AM	33	517	269	19		20	14	872	
7:45 AM	48	379	199	58		28	34	746	
8:00 AM	57	438	189	46		18	33	781	
8:15 AM	74	374	176	79		32	30	765	
8:30 AM	57	348	174	42		23	23	667	
8:45 AM	69	351	223	29		45	44	761	
Total	396	3,348	1,593	313		191	221	6,062	

AM Intersection Peak Hour : 7:30 AM - 8:30 AM					Intersection PHF : 0.91				
	Southbound		Northbound			Eastbound			
	Right	Thru	Thru	Left		Right	Left	TOTAL	
Volume	212	1,708	833	202		98	111	3,164	
PHF	0.72	0.83	0.77	0.64		0.77	0.82	0.91	
Movement PHF	0.87		0.90			0.84		0.91	

PM Period (4:00 PM - 6:00 PM)									
	Southbound		Northbound			Eastbound			
	Right	Thru	Thru	Left		Right	Left	TOTAL	
4:00 PM	27	289	410	19		23	21	789	
4:15 PM	30	332	406	15		40	33	856	
4:30 PM	27	310	437	23		27	30	854	
4:45 PM	24	315	416	22		38	47	862	
5:00 PM	26	304	433	24		46	58	891	
5:15 PM	35	265	519	24		83	58	984	
5:30 PM	41	309	454	22		55	49	930	
5:45 PM	41	266	462	23		78	55	925	
Total	251	2,390	3,537	172		390	351	7,091	

PM Intersection Peak Hour : 5:00 PM - 6:00 PM					Intersection PHF : 0.95				
	Southbound		Northbound			Eastbound			
	Right	Thru	Thru	Left		Right	Left	TOTAL	
Volume	143	1,144	1,868	93		262	220	3,730	
PHF	0.87	0.926	0.9	0.969		0.789	0.948	0.95	
Movement PHF	0.92		0.90			0.85		0.95	

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: N River Road @ Douglas Drive

Date of Count: Thursday, April 14, 2016

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 16-0503



Turn Count Summary

Accurate Video Counts Inc
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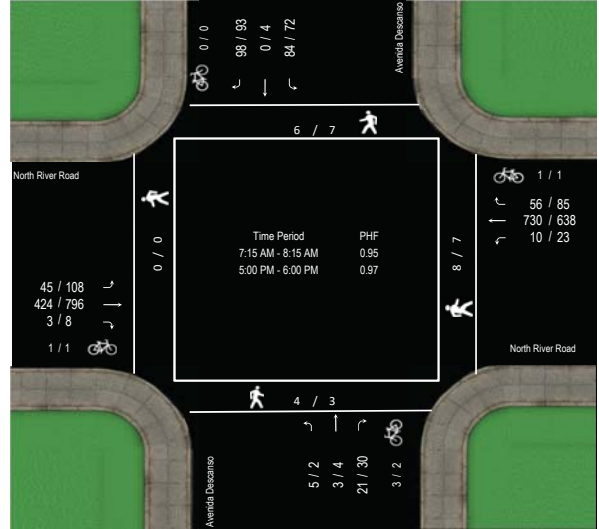
Location: North River Road @ Avenida Descanso

Date of Count: Tuesday, October 25, 2016

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 16-0584



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: N River Road @ Douglas Drive

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	3	222	3	7	4	284	85	110	12	64	19	13
7:15 AM	2	193	5	8	5	253	114	115	16	33	19	15
7:30 AM	3	170	5	8	14	251	162	104	26	46	15	5
7:45 AM	0	201	2	8	6	235	121	91	18	41	16	5
8:00 AM	7	169	7	7	15	237	107	76	33	45	21	6
8:15 AM	3	211	4	10	17	211	74	107	29	30	18	6
8:30 AM	4	219	16	12	10	214	92	67	45	35	16	8
8:45 AM	4	165	16	12	7	183	72	92	13	29	15	11
Total	26	1,550	58	72	78	1,868	827	762	192	323	139	69

AM Intersection Peak Hour : 7:00 AM - 8:00 AM												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	8	786	15	31	29	1,023	482	420	72	184	69	38
PHF	0.67	0.89	0.75	0.97	0.52	0.90	0.74	0.91	0.69	0.72	0.91	0.63
Movement PHF		0.89			0.92			0.83			0.76	

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	11	130	7	9	10	175	203	122	27	26	35	14
4:15 PM	17	208	14	14	20	171	267	174	30	21	22	11
4:30 PM	12	190	10	11	8	187	269	177	38	16	26	7
4:45 PM	21	167	9	8	21	163	197	169	30	18	32	17
5:00 PM	8	166	9	4	22	171	284	182	37	20	27	12
5:15 PM	13	219	12	7	14	169	297	212	54	26	27	9
5:30 PM	10	198	11	11	9	152	289	192	38	21	29	13
5:45 PM	6	180	6	19	14	167	262	190	59	22	21	13
Total	98	1,458	78	83	118	1,355	2,068	1,418	313	170	219	96

PM Intersection Peak Hour : 5:00 PM - 6:00 PM												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	37	763	38	41	59	659	1,132	776	188	89	104	47
PHF	0.71	0.871	0.792	0.539	0.67	0.963	0.953	0.915	0.797	0.856	0.897	0.904
Movement PHF		0.86			0.95			0.93			0.95	

Vehicular Count

Accurate Video Counts Inc
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Location: North River Road @ Avenida Descanso

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	39	2	31	2	166	1	4	0	0	2	107	11
7:15 AM	31	0	19	8	162	2	2	0	1	0	92	24
7:30 AM	26	0	25	15	159	3	4	1	2	1	119	9
7:45 AM	25	0	19	13	190	2	11	2	1	1	123	4
8:00 AM	16	0	21	20	219	3	4	0	1	1	90	8
8:15 AM	27	0	8	20	168	4	4	0	0	0	64	7
8:30 AM	22	0	16	25	129	2	4	2	1	1	67	7
8:45 AM	21	1	15	10	95	8	7	0	2	1	72	10
Total	207	3	154	113	1,288	25	40	5	8	7	764	80

AM Intersection Peak Hour : 7:15 AM - 8:15 AM												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	98	0	84	56	730	10	21	3	5	3	424	45
PHF	0.79	0.84	0.84	0.70	0.83	0.83	0.48	0.38	0.63	0.75	0.86	0.47
Movement PHF		0.89			0.82			0.52			0.91	

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	18	0	15	11	132	8	3	0	1	0	188	30
4:15 PM	13	2	11	21	134	12	4	1	1	3	188	24
4:30 PM	14	0	12	22	145	14	5	1	2	2	154	25
4:45 PM	11	0	15	24	148	5	10	2	0	2	144	24
5:00 PM	17	1	23	11	161	3	9	1	1	2	196	27
5:15 PM	23	1	17	31	152	5	9	1	1	1	196	31
5:30 PM	28	2	10	23	177	9	8	2	0	2	192	29
5:45 PM	25	0	22	20	148	6	4	0	0	3	212	21
Total	149	6	125	163	1,197	62	52	8	6	15	1,470	211

PM Intersection Peak Hour : 5:00 PM - 6:00 PM												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	93	4	72	83	638	23	30	4	2	8	796	108
PHF	0.83	0.5	0.783	0.685	0.901	0.639	0.833	0.5	0.5	0.667	0.939	0.871
Movement PHF		0.90			0.89			0.82			0.97	



Location: College Blvd @ N River Road
Date of Count: Thursday, April 14, 2016
Analysts: LV/CD
Weather: Sunny
AVC Proj No: 16-0503



Location: El Camino Real @ Douglas Drive
Date of Count: Tuesday, October 25, 2016
Analysts: LV/CD
Weather: Sunny
AVC Proj No: 16-0584



Location: College Blvd @ N River Road

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	9	88	279	209	7	69	157	38	5	0	11	5
7:15 AM	7	71	246	244	5	80	120	38	7	1	12	3
7:30 AM	5	70	182	218	8	86	108	63	2	1	4	6
7:45 AM	6	79	208	209	2	90	90	57	2	1	2	3
8:00 AM	3	75	226	168	13	62	108	67	1	0	5	3
8:15 AM	11	77	189	122	5	69	114	43	2	1	11	3
8:30 AM	5	53	152	139	4	51	97	38	3	6	8	9
8:45 AM	5	58	129	105	3	51	76	42	2	0	6	7
Total	51	571	1,611	1,414	47	558	870	386	24	10	59	39

AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.92

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	27	308	915	880	22	325	475	196	16	3	29	17
PHF	0.75	0.88	0.82	0.90	0.69	0.90	0.76	0.78	0.57	0.75	0.60	0.71
Movement PHF		0.83			0.93			0.86			0.77	
TOTAL												

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	6	62	279	192	6	99	88	63	6	1	8	6
4:15 PM	6	85	301	212	2	96	99	80	4	0	3	5
4:30 PM	2	65	256	223	8	98	107	116	5	0	8	5
4:45 PM	7	72	259	218	8	131	90	84	4	0	12	11
5:00 PM	8	81	284	249	7	105	98	108	2	1	7	6
5:15 PM	3	68	261	235	3	99	100	111	5	0	3	6
5:30 PM	7	54	258	268	3	107	125	88	7	0	12	6
5:45 PM	15	92	232	281	11	90	108	90	4	16	5	8
Total	54	579	2,130	1,878	48	825	815	740	37	18	58	53

PM Intersection Peak Hour : 5:00 PM - 6:00 PM Intersection PHF : 0.98

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	33	295	1035	1033	24	401	431	397	18	17	27	26
PHF	0.55	0.802	0.911	0.919	0.545	0.937	0.862	0.894	0.643	0.266	0.563	0.813
Movement PHF		0.91			0.95			0.96			0.60	
TOTAL												

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Mission Avenue @ El Camino Real

Date of Count: Tuesday, October 25, 2016

Analysts: LVCD

Weather: Sunny

AVC Proj No: 16-0584



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Mission Avenue @ El Camino Real

	AM Period (7:00 AM - 9:00 AM)											
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	116	223	35	9	64	35	18	50	26	16	28	33
7:15 AM	103	259	19	13	69	50	31	74	35	33	15	32
7:30 AM	91	200	29	18	81	44	20	58	31	28	37	62
7:45 AM	74	198	24	19	53	26	32	68	29	28	26	35
8:00 AM	78	169	26	15	88	39	18	45	34	34	42	32
8:15 AM	68	211	24	20	75	31	18	37	30	29	22	32
8:30 AM	71	185	32	15	46	34	26	39	48	36	34	28
8:45 AM	62	133	24	14	66	27	25	51	30	30	46	18
Total	663	1,578	213	123	542	286	188	422	263	234	250	272

AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.92

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	384	880	107	59	267	155	101	250	121	105	106	162
PHF	0.83	0.85	0.76	0.78	0.82	0.78	0.79	0.84	0.86	0.80	0.72	0.65
Movement PHF	0.90			0.84			0.84			0.73		

	PM Period (4:00 PM - 6:00 PM)											
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	39	116	40	23	90	42	42	146	52	43	109	122
4:15 PM	44	140	40	31	74	31	57	187	48	37	77	108
4:30 PM	58	136	38	41	83	45	55	137	54	42	100	128
4:45 PM	93	143	52	38	86	56	49	199	37	40	83	135
5:00 PM	81	137	47	26	84	67	73	209	35	34	137	151
5:15 PM	70	165	44	32	94	52	68	209	60	27	96	104
5:30 PM	78	116	42	36	103	46	64	150	48	28	129	126
5:45 PM	110	159	55	29	74	47	66	171	42	25	119	122
Total	573	1112	358	256	688	386	474	1,408	376	276	850	996

PM Intersection Peak Hour : 5:00 PM - 6:00 PM Intersection PHF : 0.95

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	339	577	188	123	355	212	271	739	185	114	481	503
PHF	0.77	0.874	0.855	0.854	0.862	0.791	0.928	0.884	0.771	0.838	0.878	0.833
Movement PHF	0.85			0.93			0.89			0.85		

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Mission Road @ Douglas Drive

Date of Count: Wednesday, April 20, 2016

Analysts: LVCD

Weather: Sunny

AVC Proj No: 16-0508



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Mission Road @ Douglas Drive

	AM Period (7:00 AM - 9:00 AM)											
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	14	211	152	58	100	5	0	124	22	15	74	8
7:15 AM	3	242	125	89	104	15	5	87	37	11	61	3
7:30 AM	9	185	89	70	106	13	0	81	35	19	53	9
7:45 AM	10	149	71	58	113	15	1	59	24	12	54	13
8:00 AM	14	178	76	49	83	9	2	59	44	22	52	11
8:15 AM	8	157	65	38	96	16	3	60	46	12	68	15
8:30 AM	15	169	79	26	89	15	1	27	43	17	41	9
8:45 AM	10	119	26	39	127	19	0	40	36	18	58	20
Total	83	1,410	683	427	818	107	12	537	287	126	461	88

AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.90

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	36	787	437	275	423	48	6	351	118	57	242	33
PHF	0.64	0.81	0.72	0.77	0.94	0.80	0.30	0.71	0.80	0.75	0.82	0.63
Movement PHF	0.84			0.90			0.81			0.86		

	PM Period (4:00 PM - 6:00 PM)											
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	11	103	55	72	85	10	7	156	38	53	117	61
4:15 PM	7	79	61	69	81	11	5	133	35	34	153	55
4:30 PM	2	130	85	92	64	10	4	149	45	47	142	40
4:45 PM	8	135	61	79	97	6	0	130	43	30	159	56
5:00 PM	7	144	67	72	71	14	1	163	37	41	182	41
5:15 PM	12	104	57	105	88	10	0	134	43	31	208	60
5:30 PM	4	140	61	98	83	8	3	169	59	38	160	46
5:45 PM	10	91	52	67	58	15	1	127	40	37	140	36
Total	61	926	499	654	627	84	21	1,161	340	311	1,261	395

PM Intersection Peak Hour : 4:45 PM - 5:45 PM Intersection PHF : 0.97

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	31	523	246	354	339	38	4	596	182	140	709	203
PHF	0.65	0.908	0.918	0.843	0.874	0.679	0.333	0.882	0.771	0.854	0.852	0.846
Movement PHF	0.92			0.90			0.85			0.88		



Location: SR 76 @ Douglas Drive
Date of Count: Wednesday, April 20, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0508



Location: Hwy 76 @ Rancho Del Oro Drive
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Location: SR 76 @ Douglas Drive

AM Period (7:00 AM - 9:00 AM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
7:00 AM	115	79	48	460		215	79	996	
7:15 AM	129	74	57	433		198	74	965	
7:30 AM	175	68	64	380		191	74	952	
7:45 AM	130	51	36	376		220	48	861	
8:00 AM	107	59	39	344		201	66	816	
8:15 AM	124	54	47	403		212	63	903	
8:30 AM	117	64	62	418		176	63	900	
8:45 AM	106	61	35	315		210	70	797	
Total	1,003	510	388	3,129		1,623	537	7,190	

AM Intersection Peak Hour : 7:00 AM - 8:00 AM									
Intersection PHF : 0.95									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	549	272	205	1,649		824	275	3,774	
PHF	0.78	0.86	0.80	0.90		0.94	0.87	0.95	
Movement PHF	0.84		0.91			0.93		0.95	

PM Period (4:00 PM - 6:00 PM)									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
4:00 PM	72	78	41	284		412	132	1,019	
4:15 PM	69	60	58	352		484	148	1,171	
4:30 PM	90	70	69	270		449	143	1,091	
4:45 PM	95	60	71	323		433	134	1,116	
5:00 PM	88	47	34	314		496	134	1,113	
5:15 PM	80	70	53	294		382	201	1,080	
5:30 PM	66	89	62	315		454	135	1,121	
5:45 PM	73	70	47	265		370	125	950	
Total	633	544	435	2,417		3,480	1,152	8,661	

PM Intersection Peak Hour : 4:15 PM - 5:15 PM									
Intersection PHF : 0.96									
	Southbound		Westbound			Eastbound			
	Right	Left	Right	Thru		Thru	Left	TOTAL	
Volume	342	237	232	1,259		1,862	559	4,491	
PHF	0.90	0.846	0.817	0.894		0.939	0.944	0.96	
Movement PHF	0.90		0.91			0.96		0.96	



Location: Hwy 76 @ Rancho Del Oro Drive

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
7:00 AM	10	116	8	28	357	72	92	70	74	119	207	4	1,157
7:15 AM	13	95	8	43	334	76	104	96	68	73	186	7	1,103
7:30 AM	15	42	6	39	398	74	68	64	59	55	192	5	1,017
7:45 AM	17	32	15	22	381	73	35	26	42	50	215	10	918
8:00 AM	14	49	7	37	356	72	34	24	35	42	149	8	827
8:15 AM	15	42	23	32	357	79	27	34	36	73	172	11	901
8:30 AM	17	44	13	33	395	72	23	32	40	46	189	6	910
8:45 AM	17	39	13	22	289	71	34	37	52	46	195	7	822
Total	118	459	93	256	2,867	589	417	383	406	504	1,505	58	7,655

AM Intersection Peak Hour : 7:00 AM - 8:00 AM													
Intersection PHF : 0.91													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
Volume	55	285	37	132	1,470	295	299	256	243	297	800	26	4,195
PHF	0.81	0.61	0.62	0.77	0.92	0.97	0.72	0.67	0.82	0.62	0.93	0.65	0.91
Movement PHF	0.70			0.93			0.74			0.85			0.91

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
4:00 PM	9	52	34	18	207	56	71	68	57	53	338	4	967
4:15 PM	9	47	20	23	234	45	69	56	46	74	398	5	1,026
4:30 PM	7	48	21	19	228	50	64	44	44	76	448	5	1,054
4:45 PM	12	64	32	24	294	41	57	61	49	71	371	4	1,080
5:00 PM	15	57	27	19	270	61	58	63	73	55	430	7	1,135
5:15 PM	11	48	25	25	253	46	64	51	38	58	455	8	1,082
5:30 PM	8	56	15	17	253	55	68	83	56	75	427	7	1,120
5:45 PM	4	39	20	30	294	75	56	63	55	56	423	8	1,123
Total	75	411	194	175	2,033	429	507	489	418	518	3,290	48	8,587

PM Intersection Peak Hour : 5:00 PM - 6:00 PM													
Intersection PHF : 0.98													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
Volume	38	200	87	91	1,070	237	246	260	222	244	1,735	30	4,460
PHF	0.63	0.877	0.806	0.758	0.91	0.79	0.904	0.783	0.76	0.813	0.953	0.938	0.98
Movement PHF	0.82			0.88			0.88			0.96			0.98



Location: Hwy 76 @ Old Grove Road
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Location: Hwy 76 @ Old Grove Road

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	89	95	11	0	326	35	27	21	42	51	225	31
7:15 AM	81	63	6	9	326	73	44	38	46	60	201	37
7:30 AM	68	47	8	2	408	44	30	54	35	51	165	50
7:45 AM	57	89	8	3	377	29	35	60	42	27	202	36
8:00 AM	73	81	6	3	354	42	30	52	38	35	125	30
8:15 AM	49	50	12	2	365	33	35	25	54	46	154	22
8:30 AM	43	37	1	1	411	25	29	29	46	31	179	15
8:45 AM	32	27	0	3	311	23	26	24	39	33	188	21
Total	492	489	52	23	2,878	304	256	303	342	334	1,439	242
AM Intersection Peak Hour : 7:00 AM - 8:00 AM												Intersection PHF : 0.98
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	295	294	33	14	1,437	181	136	173	165	189	793	154
PHF	0.83	0.77	0.75	0.39	0.88	0.62	0.77	0.72	0.90	0.79	0.88	0.77
Movement PHF	0.80			0.90			0.86			0.93		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	38	23	4	4	202	39	44	54	41	55	355	33
4:15 PM	34	33	1	3	241	52	51	51	27	75	371	41
4:30 PM	39	47	6	6	221	42	43	50	37	74	406	53
4:45 PM	35	26	6	14	295	43	44	48	29	43	365	52
5:00 PM	31	23	1	4	282	35	42	59	37	56	408	51
5:15 PM	32	26	3	5	249	35	39	69	43	52	438	54
5:30 PM	36	28	5	4	250	36	55	71	39	61	405	44
5:45 PM	32	30	1	1	335	35	49	61	32	57	384	58
Total	277	236	27	41	2,075	317	367	463	285	473	3,132	386
PM Intersection Peak Hour : 5:00 PM - 6:00 PM												Intersection PHF : 0.97
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	131	107	10	14	1,116	141	185	260	151	226	1,635	207
PHF	0.91	0.892	0.5	0.7	0.833	0.979	0.841	0.915	0.878	0.926	0.933	0.892
Movement PHF	0.90			0.86			0.90			0.95		



Location: Hwy 76 @ Frazee Road
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Location: Hwy 76 @ Frazee Road

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	24	55	22	18	311	18	33	25	26	12	227	24
7:15 AM	21	40	27	21	372	19	32	24	15	13	225	13
7:30 AM	16	22	15	6	433	19	30	15	5	15	184	4
7:45 AM	10	25	18	17	380	12	27	25	19	14	226	5
8:00 AM	12	27	17	20	364	16	28	19	23	21	137	3
8:15 AM	7	12	13	5	378	11	29	17	15	21	177	3
8:30 AM	8	18	12	6	409	19	27	18	20	14	193	2
8:45 AM	4	15	12	7	314	25	25	11	19	17	191	6
Total	102	214	136	100	2,961	139	231	154	142	127	1,560	60
AM Intersection Peak Hour : 7:00 AM - 8:00 AM												Intersection PHF : 0.96
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	71	142	82	62	1,496	68	122	89	65	54	862	46
PHF	0.74	0.65	0.76	0.74	0.86	0.89	0.92	0.89	0.63	0.90	0.95	0.48
Movement PHF	0.73			0.89			0.82			0.91		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	10	15	5	18	227	25	42	30	8	43	349	11
4:15 PM	9	22	13	17	269	28	31	34	18	38	359	26
4:30 PM	10	10	17	18	249	27	44	38	10	54	383	18
4:45 PM	6	18	10	18	327	36	38	39	19	47	356	12
5:00 PM	7	15	10	23	301	37	23	34	13	24	419	8
5:15 PM	3	21	9	16	277	34	53	37	9	37	424	19
5:30 PM	13	18	12	16	262	29	52	47	15	32	420	13
5:45 PM	9	25	8	20	338	41	44	43	24	41	383	10
Total	67	144	84	146	2,250	257	327	302	116	316	3,093	117
PM Intersection Peak Hour : 5:00 PM - 6:00 PM												Intersection PHF : 0.96
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	32	79	39	75	1,178	141	172	161	61	134	1,646	50
PHF	0.62	0.79	0.813	0.815	0.871	0.86	0.811	0.856	0.635	0.817	0.971	0.658
Movement PHF	0.87			0.87			0.86			0.95		

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ College Blvd
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ N Santa Fe Ave
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ College Blvd

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	60	165	117	104	312	98	38	144	4	4	176	79
7:15 AM	97	259	197	114	320	98	71	132	11	9	204	114
7:30 AM	68	178	127	142	342	150	42	142	10	3	139	138
7:45 AM	79	150	127	157	263	120	46	117	21	8	176	104
8:00 AM	71	163	130	106	346	141	29	88	13	15	133	82
8:15 AM	101	208	125	102	323	118	52	139	19	8	190	51
8:30 AM	88	174	132	120	288	94	37	120	10	7	178	95
8:45 AM	77	112	84	81	300	67	35	102	13	8	172	98
Total	641	1,409	1,039	926	2,494	886	350	984	101	62	1,368	761
AM Intersection Peak Hour : 7:15 AM - 8:15 AM Intersection PHF : 0.89												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	315	750	581	519	1,271	509	188	479	55	35	652	438
PHF	0.81	0.72	0.74	0.83	0.92	0.85	0.66	0.84	0.65	0.58	0.80	0.79
Movement PHF	0.74			0.91			0.84			0.86		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	88	178	165	173	250	84	74	184	28	16	293	180
4:15 PM	122	197	133	164	212	86	82	177	11	19	304	176
4:30 PM	99	218	115	159	228	72	125	164	12	16	325	181
4:45 PM	93	248	144	156	240	69	107	235	10	12	322	168
5:00 PM	112	218	124	160	210	54	83	242	14	19	341	137
5:15 PM	115	264	136	147	227	78	75	270	17	17	367	189
5:30 PM	86	210	116	178	246	81	57	252	20	23	305	197
5:45 PM	78	166	171	166	243	80	70	228	19	7	327	191
Total	793	1,699	1,104	1,303	1,856	604	673	1,752	131	129	2,584	1,419
PM Intersection Peak Hour : 4:45 PM - 5:45 PM Intersection PHF : 0.95												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	406	940	520	641	923	282	322	999	61	71	1,335	691
PHF	0.88	0.89	0.903	0.9	0.938	0.87	0.752	0.925	0.763	0.772	0.909	0.877
Movement PHF	0.91			0.91			0.95			0.91		

Vehicular Count

Accurate Video Counts Inc
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(619) 987-5136



Location: Hwy 76 @ N Santa Fe Ave

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	4	9	2	0	394	137	119	1	116	151	179	1
7:15 AM	5	6	1	2	425	146	179	1	102	146	326	0
7:30 AM	5	7	1	5	497	191	180	1	132	142	163	3
7:45 AM	6	8	1	7	398	197	147	2	136	139	207	3
8:00 AM	7	8	1	9	447	203	114	3	139	136	153	3
8:15 AM	7	7	0	2	394	152	83	0	142	121	242	4
8:30 AM	3	7	2	1	385	151	99	4	114	154	192	1
8:45 AM	5	7	1	7	342	137	70	5	101	153	137	1
Total	42	59	9	33	3,282	1,314	991	17	982	1,142	1,599	16
AM Intersection Peak Hour : 7:15 AM - 8:15 AM Intersection PHF : 0.96												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	23	29	4	23	1,767	737	620	7	509	563	849	9
PHF	0.82	0.91	1.00	0.64	0.89	0.91	0.86	0.58	0.92	0.96	0.65	0.75
Movement PHF	0.88			0.91			0.91			0.75		

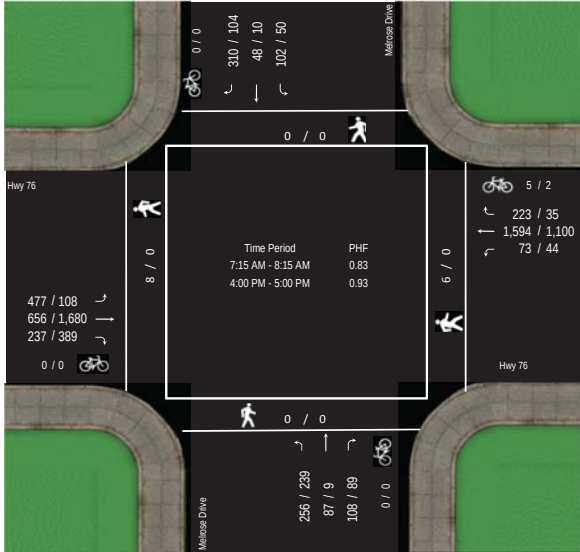
PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	2	1	2	13	377	98	202	3	128	115	413	4
4:15 PM	2	2	0	5	335	127	201	8	125	88	428	3
4:30 PM	0	0	3	2	327	87	151	5	132	100	458	7
4:45 PM	2	1	1	0	325	94	198	5	138	136	433	4
5:00 PM	4	3	1	2	310	94	199	2	110	97	447	4
5:15 PM	4	3	0	2	306	96	203	9	142	99	470	9
5:30 PM	4	0	1	2	341	102	201	24	160	90	378	10
5:45 PM	4	8	1	5	359	102	175	8	126	197	365	6
Total	22	18	9	31	2,680	800	1,530	64	1,061	922	3,392	47
PM Intersection Peak Hour : 4:00 PM - 5:00 PM Intersection PHF : 0.97												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	6	4	6	20	1,364	406	752	21	523	439	1,732	18
PHF	0.75	0.5	0.5	0.385	0.905	0.799	0.931	0.656	0.947	0.807	0.945	0.643
Movement PHF	0.80			0.92			0.95			0.96		

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ Melrose Drive
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ E Vista Way
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Vehicular Count

Accurate Video Counts Inc
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(619) 987-5136



Location: Hwy 76 @ Melrose Drive

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	59	1	14	48	345	13	20	8	87	24	162	106
7:15 AM	93	9	27	122	319	11	22	30	75	21	167	241
7:30 AM	89	12	31	91	473	17	23	49	33	71	147	226
7:45 AM	87	19	27	5	359	16	27	6	65	56	197	10
8:00 AM	41	8	17	5	443	29	36	2	83	89	145	0
8:15 AM	39	0	22	2	328	57	49	8	104	17	206	4
8:30 AM	44	0	17	2	312	13	31	4	95	36	180	12
8:45 AM	47	0	9	5	277	13	28	1	71	35	166	10
Total	499	49	164	280	2,856	169	236	108	613	349	1,370	609
AM Intersection Peak Hour :	7:15 AM - 8:15 AM									Intersection PHF :		
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	310	48	102	223	1,594	73	108	87	256	237	656	477
PHF	0.83	0.63	0.82	0.46	0.84	0.63	0.75	0.44	0.77	0.67	0.83	0.49
Movement PHF	0.86			0.81			0.89			0.77		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	39	5	20	13	305	17	18	0	50	113	370	43
4:15 PM	22	0	11	13	295	10	26	4	86	96	442	28
4:30 PM	27	1	8	5	250	11	16	2	48	89	445	19
4:45 PM	16	4	11	4	250	6	29	3	55	91	423	18
5:00 PM	16	1	5	11	233	21	16	2	72	83	448	18
5:15 PM	28	1	11	7	234	7	18	0	42	53	523	20
5:30 PM	33	0	5	3	264	21	18	0	64	84	389	18
5:45 PM	14	0	11	6	293	10	27	0	63	124	465	12
Total	195	12	82	62	2,124	103	168	11	480	733	3,505	176
PM Intersection Peak Hour :	4:30 PM - 5:00 PM									Intersection PHF :		
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	104	10	50	35	1,100	44	89	9	239	389	1,680	108
PHF	0.67	0.5	0.625	0.673	0.902	0.647	0.767	0.563	0.695	0.861	0.944	0.628
Movement PHF	0.64			0.88			0.73			0.96		

Vehicular Count

Accurate Video Counts Inc
info@accuratevideocontrols.com
(619) 987-5136



Location: Hwy 76 @ E Vista Way

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	20	15	0	4	320	173	59	3	82	53	131	4
7:15 AM	27	16	1	2	331	180	60	4	116	55	152	8
7:30 AM	22	21	2	2	444	118	78	5	61	35	208	12
7:45 AM	19	15	3	2	291	132	75	2	53	35	179	13
8:00 AM	24	19	2	1	344	126	81	3	51	46	152	4
8:15 AM	17	4	0	2	274	110	49	3	70	61	206	8
8:30 AM	11	3	0	1	269	77	52	2	49	82	164	1
8:45 AM	7	7	0	0	276	97	59	1	43	42	193	5
Total	147	100	8	14	2,549	1,013	513	23	525	409	1,385	55
AM Intersection Peak Hour :	7:00 AM - 8:00 AM									Intersection PHF :		
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	88	67	6	10	1,386	603	272	14	312	178	670	37
PHF	0.81	0.80	0.50	0.63	0.78	0.84	0.87	0.70	0.67	0.81	0.81	0.71
Movement PHF	0.89			0.89			0.83			0.87		

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	9	6	1	0	234	101	58	3	39	71	370	14
4:15 PM	7	10	1	5	265	121	46	6	29	56	374	5
4:30 PM	7	12	3	3	238	116	58	4	24	61	399	14
4:45 PM	12	9	9	4	214	150	71	1	28	45	358	14
5:00 PM	13	7	5	1	232	160	80	4	26	60	372	8
5:15 PM	18	9	6	3	228	138	82	9	34	54	455	7
5:30 PM	21	8	3	1	229	158	70	4	39	53	403	12
5:45 PM	11	7	2	1	197	128	56	9	45	52	427	10
Total	98	68	30	18	1,837	1,072	521	40	264	452	3,158	84
PM Intersection Peak Hour :	5:00 PM - 6:00 PM									Intersection PHF :		
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	63	31	16	6	886	584	288	26	144	219	1,657	37
PHF	0.75	0.861	0.667	0.5	0.955	0.913	0.878	0.722	0.8	0.913	0.91	0.771
Movement PHF	0.83			0.94			0.92			0.93		



Location: Frazee Road @ College Blvd
Date of Count: Thursday, April 14, 2016
Analysts: LVCD
Weather: Sunny
AVC Proj No: 16-0503



Location: Frazee Road @ College Blvd

AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
7:00 AM	20	217	2	6	18	12	3	142	18	35	8	20
7:15 AM	25	276	4	9	20	11	2	144	13	26	15	21
7:30 AM	24	263	3	13	16	14	2	117	13	35	7	19
7:45 AM	22	217	10	7	21	12	6	128	15	34	15	17
8:00 AM	32	221	13	6	19	17	5	122	22	24	17	19
8:15 AM	23	234	12	21	24	21	5	120	17	18	9	27
8:30 AM	21	221	13	29	27	25	4	107	25	26	11	19
8:45 AM	18	148	8	20	18	24	2	98	15	15	15	18
Total	185	1,797	65	111	163	136	29	978	138	213	97	160

AM Intersection Peak Hour : 7:15 AM - 8:15 AM Intersection PHF : 0.93

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	103	977	30	35	76	54	15	511	63	119	54	76
PHF	0.80	0.88	0.58	0.67	0.90	0.79	0.63	0.89	0.72	0.85	0.79	0.90
Movement PHF		0.91			0.96			0.93			0.94	

PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
4:00 PM	51	192	8	7	14	11	5	219	38	21	17	30
4:15 PM	39	223	7	14	12	10	8	209	34	29	19	26
4:30 PM	43	213	18	9	21	4	12	218	48	32	21	34
4:45 PM	61	222	7	8	10	8	11	223	55	37	22	33
5:00 PM	51	207	13	12	24	6	15	203	49	20	22	42
5:15 PM	51	226	11	11	22	3	10	223	44	36	28	54
5:30 PM	58	199	13	4	11	2	11	199	39	32	20	36
5:45 PM	49	168	13	8	15	9	8	204	43	38	25	35
Total	403	1,650	90	73	129	53	80	1,698	350	245	174	290

PM Intersection Peak Hour : 4:30 PM - 5:30 PM Intersection PHF : 0.96

	Southbound			Westbound			Northbound			Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Volume	206	868	49	40	77	21	48	867	196	125	93	163
PHF	0.84	0.96	0.681	0.833	0.802	0.656	0.8	0.972	0.891	0.845	0.83	0.755
Movement PHF		0.97			0.82			0.96			0.81	

24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideo counts.com
(619) 987-5136



Location: 1. Vandegriff Blvd, N River Road to Douglas Drive

Orientation: North-South

Date of Count: Thursday, April 14, 2016

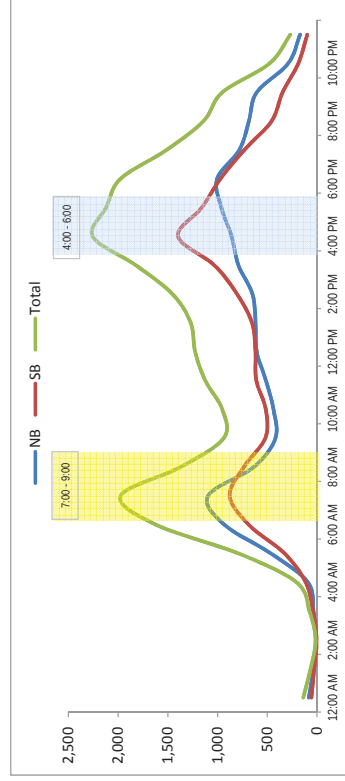
Analysts: DASH

Weather: Sunny

AVC Proj. No: 16-0503

24 Hour Segment Volume							25,746
Time		Hourly Volume			Time		Total
		NB	SB	Total			
12:00 AM - 1:00 AM	82	56	138	1,226	12:00 PM - 1:00 PM	606	620
1:00 AM - 2:00 AM	37	28	65	1,270	1:00 PM - 2:00 PM	617	653
2:00 AM - 3:00 AM	10	4	14	1,453	2:00 PM - 3:00 PM	649	804
3:00 AM - 4:00 AM	36	40	76	1,822	3:00 PM - 4:00 PM	790	1,032
4:00 AM - 5:00 AM	92	114	206	2,256	4:00 PM - 5:00 PM	859	1,397
5:00 AM - 6:00 AM	463	326	789	2,121	5:00 PM - 6:00 PM	962	1,159
6:00 AM - 7:00 AM	933	688	1,621	1,976	6:00 PM - 7:00 PM	1,005	971
7:00 AM - 8:00 AM	1,096	878	1,974	1,513	7:00 PM - 8:00 PM	781	732
8:00 AM - 9:00 AM	635	736	1,371	1,142	8:00 PM - 9:00 PM	685	457
9:00 AM - 10:00 AM	418	520	938	952	9:00 PM - 10:00 PM	606	346
10:00 AM - 11:00 AM	438	515	953	478	10:00 PM - 11:00 PM	290	188
11:00 AM - 12:00 PM	514	610	1,124	268	11:00 PM - 12:00 AM	170	98
Total		4,754	4,515	9,269	Total	8,020	8,457
							16,477

24-Hour	NB	Volume	12,774	24-Hour	SB	Volume	12,972



24 Hour Segment Count

Accurate Video Counts Inc
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Location: 3. N River Road, Douglas Drive to College Blvd

Orientation: East-West

Date of Count: Thursday, April 14, 2016

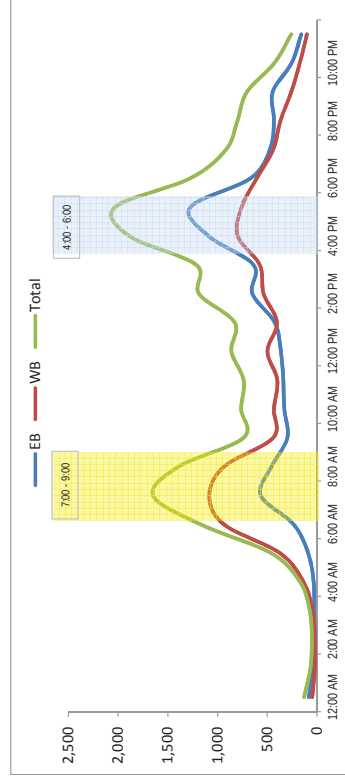
Analysts: DASH

Weather: Sunny

AVC Proj. No: 16-0503

24 Hour Segment Volume							19,806
Time		Hourly Volume			Time		Total
		EB	WB	Total			
12:00 AM - 1:00 AM	82	48	130	498	12:00 PM - 1:00 PM	363	861
1:00 AM - 2:00 AM	45	22	67	425	1:00 PM - 2:00 PM	425	403
2:00 AM - 3:00 AM	26	25	51	537	2:00 PM - 3:00 PM	650	1,187
3:00 AM - 4:00 AM	29	44	73	638	3:00 PM - 4:00 PM	638	1,214
4:00 AM - 5:00 AM	34	136	170	797	4:00 PM - 5:00 PM	1,091	1,888
5:00 AM - 6:00 AM	89	373	462	1,274	5:00 PM - 6:00 PM	1,274	2,033
6:00 AM - 7:00 AM	236	938	1,174	1,277	6:00 PM - 7:00 PM	670	1,277
7:00 AM - 8:00 AM	566	1,083	1,649	441	7:00 PM - 8:00 PM	474	915
8:00 AM - 9:00 AM	458	935	1,393	368	8:00 PM - 9:00 PM	433	801
9:00 AM - 10:00 AM	298	441	739	446	9:00 PM - 10:00 PM	446	259
10:00 AM - 11:00 AM	329	434	763	256	10:00 PM - 11:00 PM	256	173
11:00 AM - 12:00 PM	339	399	738	158	11:00 PM - 12:00 AM	158	259
Total		2,531	4,878	7,409	Total	6,878	12,397

24-Hour	EB	Volume	9,409	24-Hour	WB	Volume	10,397



24 Hour Segment Count

Accurate Video Counts Inc
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Location: 2. N River Road btw Station Drive to Wilshire Road

Orientation: East-West

Date of Count: Tuesday, October 17, 2017

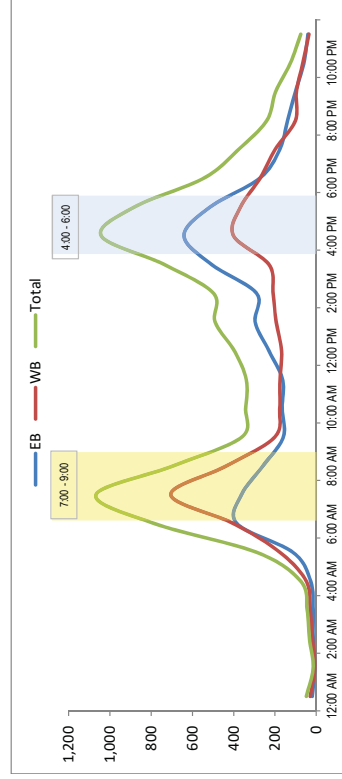
Analysts: DASH

Weather: Sunny

AVC Proj. No: 17-0771

24 Hour Segment Volume							9,694
Time		Hourly Volume			Time		Total
		EB	WB	Total			
12:00 AM - 1:00 AM	1:00 PM - 2:00 PM	19	29	48	12:00 PM - 1:00 PM	168	397
1:00 AM - 2:00 AM	2:00 PM - 3:00 PM	8	7	15	1:00 PM - 2:00 PM	296	490
2:00 AM - 3:00 AM	3:00 PM - 4:00 PM	15	18	33	2:00 PM - 3:00 PM	289	498
3:00 AM - 4:00 AM	4:00 PM - 5:00 PM	15	29	44	3:00 PM - 4:00 PM	507	736
4:00 AM - 5:00 AM	5:00 PM - 6:00 PM	27	48	75	4:00 PM - 5:00 PM	641	1,042
5:00 AM - 6:00 AM	6:00 PM - 7:00 PM	112	175	287	5:00 PM - 6:00 PM	514	881
6:00 AM - 7:00 AM	7:00 PM - 8:00 PM	384	399	783	6:00 PM - 7:00 PM	272	545
7:00 AM - 8:00 AM	8:00 PM - 9:00 PM	363	705	1,068	7:00 PM - 8:00 PM	177	376
8:00 AM - 9:00 AM	9:00 PM - 10:00 PM	259	437	696	8:00 PM - 9:00 PM	139	240
9:00 AM - 10:00 AM	10:00 PM - 11:00 PM	160	202	362	9:00 PM - 10:00 PM	101	197
10:00 AM - 11:00 AM	11:00 PM - 12:00 AM	165	177	342	10:00 PM - 11:00 PM	60	125
11:00 AM - 12:00 PM		163	176	339	11:00 PM - 12:00 AM	40	75
Total		1,690	2,402	4,092	Total	3,266	5,602

24-Hour	EB	Volume	24-Hour	WB	Volume	4,738



24 Hour Segment Count

Accurate Video Counts Inc
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(619) 987-5136



Location: 3. N River Road btw Wilshire Road to Sleeping Indian Road

Orientation: East-West

Date of Count: Tuesday, October 17, 2017

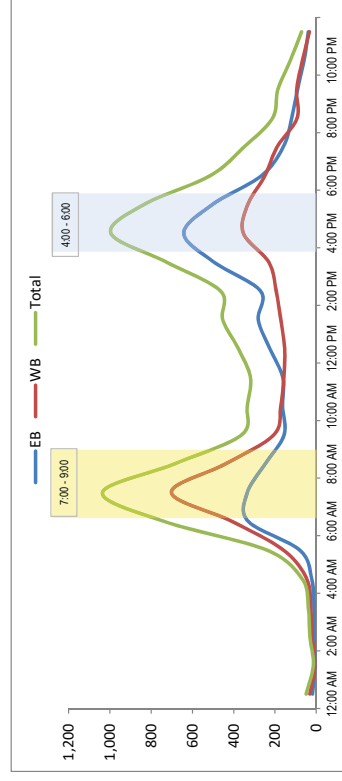
Analysts: DASH

Weather: Sunny

AVC Proj. No: 17-0771

24 Hour Segment Volume							9,226
Time		Hourly Volume			Time		Total
		EB	WB	Total			
12:00 AM - 1:00 AM	1:00 PM - 2:00 PM	18	31	49	12:00 PM - 1:00 PM	225	378
1:00 AM - 2:00 AM	2:00 PM - 3:00 PM	7	7	14	1:00 PM - 2:00 PM	281	453
2:00 AM - 3:00 AM	3:00 PM - 4:00 PM	11	20	31	2:00 PM - 3:00 PM	270	464
3:00 AM - 4:00 AM	4:00 PM - 5:00 PM	11	27	38	3:00 PM - 4:00 PM	495	725
4:00 AM - 5:00 AM	5:00 PM - 6:00 PM	22	46	68	4:00 PM - 5:00 PM	642	995
5:00 AM - 6:00 AM	6:00 PM - 7:00 PM	80	159	239	5:00 PM - 6:00 PM	504	836
6:00 AM - 7:00 AM	7:00 PM - 8:00 PM	330	409	739	6:00 PM - 7:00 PM	266	515
7:00 AM - 8:00 AM	8:00 PM - 9:00 PM	334	702	1,036	7:00 PM - 8:00 PM	160	350
8:00 AM - 9:00 AM	9:00 PM - 10:00 PM	247	438	685	8:00 PM - 9:00 PM	119	212
9:00 AM - 10:00 AM	10:00 PM - 11:00 PM	156	206	362	9:00 PM - 10:00 PM	91	186
10:00 AM - 11:00 AM	11:00 PM - 12:00 AM	163	172	335	10:00 PM - 11:00 PM	59	126
11:00 AM - 12:00 PM		162	157	319	11:00 PM - 12:00 AM	38	71
Total		1,541	2,374	3,915	Total	3,150	5,311

24-Hour	EB	Volume	24-Hour	WB	Volume	4,535



24 Hour Segment Count

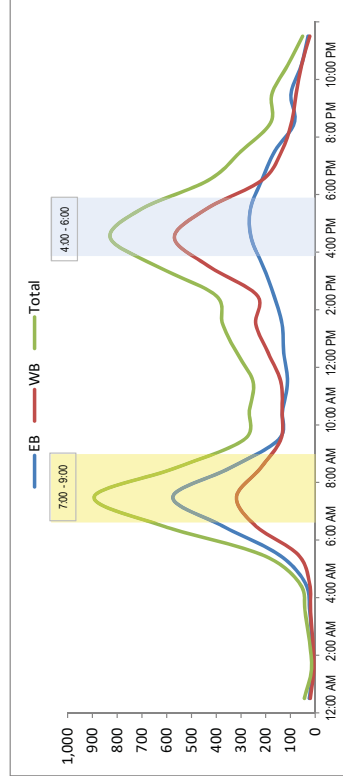
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Location: 4. N River Road btw Sleeping Indian Road to Hwy 76
Orientation: East-West
Date of Count: Tuesday, October 17, 2017
Analysts: DASH
Weather: Sunny
AVC Proj. No: 17-0771

24 Hour Segment Volume						7,795	
Time		Hourly Volume		Time		Hourly Volume	
		EB	WB			EB	WB
12:00 AM	- 1:00 AM	24	20	12:00 PM	- 1:00 PM	127	190
1:00 AM	- 2:00 AM	9	6	1:00 PM	- 2:00 PM	134	240
2:00 AM	- 3:00 AM	14	10	2:00 PM	- 3:00 PM	167	235
3:00 AM	- 4:00 AM	22	19	3:00 PM	- 4:00 PM	210	428
4:00 AM	- 5:00 AM	40	23	4:00 PM	- 5:00 PM	259	569
5:00 AM	- 6:00 AM	148	70	5:00 PM	- 6:00 PM	262	440
6:00 AM	- 7:00 AM	377	242	6:00 PM	- 7:00 PM	216	215
7:00 AM	- 8:00 AM	575	318	7:00 PM	- 8:00 PM	164	136
8:00 AM	- 9:00 AM	345	221	8:00 PM	- 9:00 PM	84	96
9:00 AM	- 10:00 AM	147	139	9:00 PM	- 10:00 PM	98	77
10:00 AM	- 11:00 AM	132	134	10:00 PM	- 11:00 PM	56	55
11:00 AM	- 12:00 PM	112	139	11:00 PM	- 12:00 AM	29	22
Total		1,945	1,341	Total		1,806	2,703
		3,286				4,509	

24-Hour	EB	Volume	WB	Volume	4,044



24 Hour Segment Count

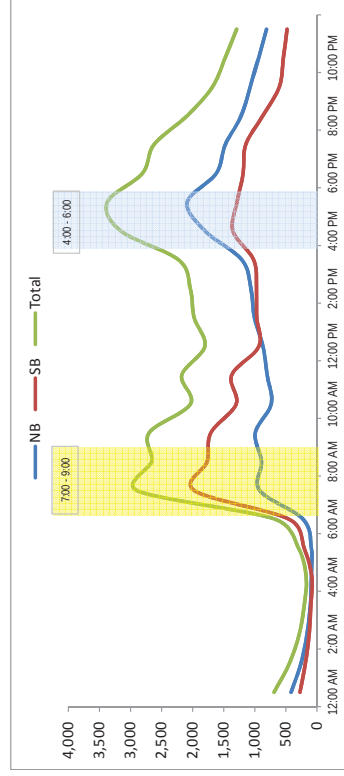
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(619) 987-5136



Location: 9. Hwy 76 / Mission Road, North of N River Road
Orientation: North-South
Date of Count: Thursday, April 14, 2016
Analysts: DASH
Weather: Sunny
AVC Proj. No: 16-0503

24 Hour Segment Volume						41,800	
Time		Hourly Volume		Time		Hourly Volume	
		NB	SB			NB	SB
12:00 AM	- 1:00 AM	417	274	12:00 PM	- 1:00 PM	870	935
1:00 AM	- 2:00 AM	257	187	1:00 PM	- 2:00 PM	1,008	970
2:00 AM	- 3:00 AM	162	126	2:00 PM	- 3:00 PM	1,063	975
3:00 AM	- 4:00 AM	107	99	3:00 PM	- 4:00 PM	1,208	1,019
4:00 AM	- 5:00 AM	91	83	4:00 PM	- 5:00 PM	1,354	1,227
5:00 AM	- 6:00 AM	91	207	5:00 PM	- 6:00 PM	1,800	1,354
6:00 AM	- 7:00 AM	223	447	6:00 PM	- 7:00 PM	2,088	1,287
7:00 AM	- 8:00 AM	922	1,976	7:00 PM	- 8:00 PM	1,621	1,189
8:00 AM	- 9:00 AM	892	1,768	8:00 PM	- 9:00 PM	1,476	1,147
9:00 AM	- 10:00 AM	993	1,709	9:00 PM	- 10:00 PM	1,219	871
10:00 AM	- 11:00 AM	736	1,300	10:00 PM	- 11:00 PM	1,076	607
11:00 AM	- 12:00 PM	802	1,374	11:00 PM	- 12:00 AM	812	541
Total		5,693	9,550	Total		15,181	11,376
		15,243				26,557	

24-Hour	NB	Volume	SB	Volume	20,926





24 Hour Segment Count

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Location: 2. Douglas Drive, South of N River Road

Orientation: North-South

Date of Count: Thursday, April 14, 2016

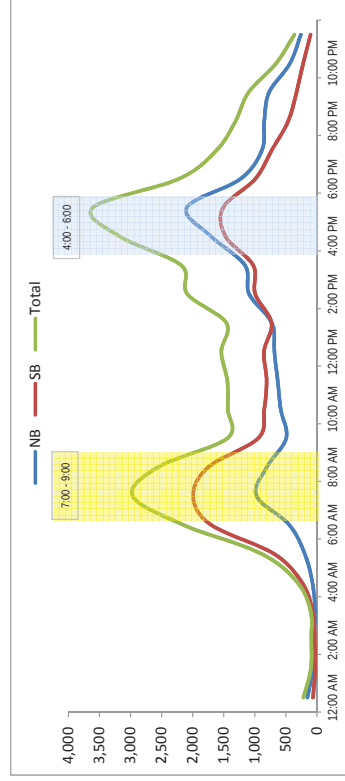
Analysts: DASH

Weather: Sunny

AVC Proj. No: 16-0603

24 Hour Segment Volume							35,053		
Time		Hourly Volume			Time		Hourly Volume		
		NB	SB	Total			NB	SB	Total
12:00 AM	- 1:00 AM	154	65	219	12:00 PM	- 1:00 PM	686	854	1,540
1:00 AM	- 2:00 AM	69	30	99	1:00 PM	- 2:00 PM	728	731	1,459
2:00 AM	- 3:00 AM	56	36	92	2:00 PM	- 3:00 PM	1,092	994	2,086
3:00 AM	- 4:00 AM	32	71	103	3:00 PM	- 4:00 PM	1,160	1,027	2,187
4:00 AM	- 5:00 AM	75	243	318	4:00 PM	- 5:00 PM	1,703	1,472	3,175
5:00 AM	- 6:00 AM	200	701	901	5:00 PM	- 6:00 PM	2,096	1,511	3,607
6:00 AM	- 7:00 AM	449	1,710	2,159	6:00 PM	- 7:00 PM	1,228	992	2,220
7:00 AM	- 8:00 AM	974	1,993	2,967	7:00 PM	- 8:00 PM	885	727	1,612
8:00 AM	- 9:00 AM	807	1,748	2,555	8:00 PM	- 9:00 PM	849	463	1,312
9:00 AM	- 10:00 AM	495	945	1,440	9:00 PM	- 10:00 PM	771	330	1,101
10:00 AM	- 11:00 AM	584	850	1,434	10:00 PM	- 11:00 PM	436	223	659
11:00 AM	- 12:00 PM	634	810	1,444	11:00 PM	- 12:00 AM	260	104	364
Total		4,529	9,202	13,731	Total		11,894	9,428	21,322

24-Hour	NB	Volume	16,423	24-Hour	SB	Volume	18,630



24 Hour Segment Count

Accurate Video Counts Inc
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(619) 987-5136



Location: 10. College Blvd, N River Road to Hwy 76

Orientation: North-South

Date of Count: Thursday, April 14, 2016

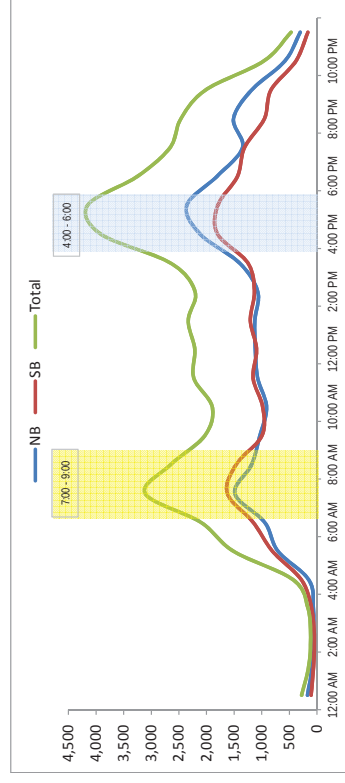
Analysts: DASH

Weather: Sunny

AVC Proj. No: 16-0603

24 Hour Segment Volume							45,980		
Time		Hourly Volume			Time		Hourly Volume		
		NB	SB	Total			NB	SB	Total
12:00 AM	- 1:00 AM	173	106	279	12:00 PM	- 1:00 PM	1,118	1,084	2,212
1:00 AM	- 2:00 AM	88	62	150	1:00 PM	- 2:00 PM	1,125	1,207	2,332
2:00 AM	- 3:00 AM	68	48	116	2:00 PM	- 3:00 PM	1,073	1,134	2,207
3:00 AM	- 4:00 AM	65	97	162	3:00 PM	- 4:00 PM	1,404	1,252	2,656
4:00 AM	- 5:00 AM	146	281	427	4:00 PM	- 5:00 PM	2,117	1,800	3,917
5:00 AM	- 6:00 AM	708	808	1,516	5:00 PM	- 6:00 PM	2,357	1,796	4,153
6:00 AM	- 7:00 AM	948	1,156	2,104	6:00 PM	- 7:00 PM	1,812	1,440	3,252
7:00 AM	- 8:00 AM	1,487	1,624	3,111	7:00 PM	- 8:00 PM	1,348	1,313	2,661
8:00 AM	- 9:00 AM	1,184	1,465	2,649	8:00 PM	- 9:00 PM	1,512	953	2,465
9:00 AM	- 10:00 AM	1,035	998	2,033	9:00 PM	- 10:00 PM	1,183	833	2,016
10:00 AM	- 11:00 AM	913	983	1,896	10:00 PM	- 11:00 PM	583	383	966
11:00 AM	- 12:00 PM	1,074	1,157	2,231	11:00 PM	- 12:00 AM	304	165	469
Total		7,889	8,785	16,674	Total		15,936	13,370	29,306

24-Hour	NB	Volume	23,825	24-Hour	SB	Volume	22,155



24 Hour Segment Count

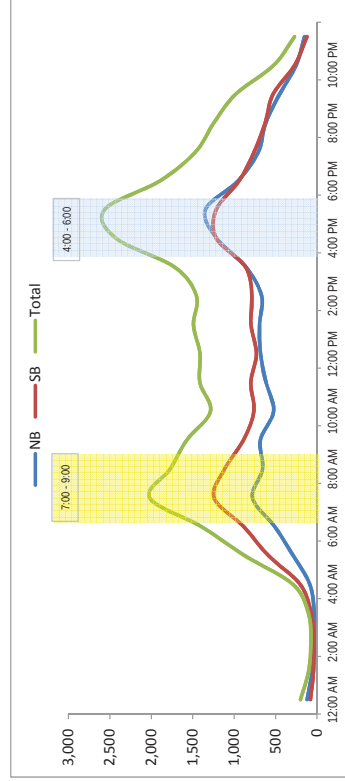
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info@accuratevideo counts.com
(619) 987-5136



Location: 11. College Blvd, Hwy 76 to Frazee Road
Orientation: North-South
Date of Count: Thursday, April 14, 2016
Analysts: DASH
Weather: Sunny
AVC Proj. No: 16-0603

24 Hour Segment Volume							28,552		
Time		Hourly Volume			Time		Hourly Volume		
		NB	SB	Total			NB	SB	Total
12:00 AM - 1:00 AM	1:00 AM - 2:00 AM	120	79	199	12:00 PM - 1:00 PM	1:00 PM - 2:00 PM	681	731	1,412
1:00 AM - 2:00 AM	2:00 AM - 3:00 AM	58	42	100	1:00 PM - 2:00 PM	2:00 PM - 3:00 PM	694	797	1,491
2:00 AM - 3:00 AM	3:00 AM - 4:00 AM	39	36	75	2:00 PM - 3:00 PM	3:00 PM - 4:00 PM	668	787	1,455
3:00 AM - 4:00 AM	4:00 AM - 5:00 AM	34	70	104	3:00 PM - 4:00 PM	4:00 PM - 5:00 PM	856	860	1,716
4:00 AM - 5:00 AM	5:00 AM - 6:00 AM	87	204	291	4:00 PM - 5:00 PM	5:00 PM - 6:00 PM	1,209	1,215	2,424
5:00 AM - 6:00 AM	6:00 AM - 7:00 AM	288	588	876	5:00 PM - 6:00 PM	6:00 PM - 7:00 PM	1,347	1,217	2,564
6:00 AM - 7:00 AM	7:00 AM - 8:00 AM	510	885	1,395	6:00 PM - 7:00 PM	7:00 PM - 8:00 PM	952	940	1,892
7:00 AM - 8:00 AM	8:00 AM - 9:00 AM	778	1,242	2,020	7:00 PM - 8:00 PM	8:00 PM - 9:00 PM	708	759	1,467
8:00 AM - 9:00 AM	9:00 AM - 10:00 AM	657	1,115	1,772	8:00 PM - 9:00 PM	9:00 PM - 10:00 PM	620	627	1,247
9:00 AM - 10:00 AM	10:00 AM - 11:00 AM	684	889	1,573	9:00 PM - 10:00 PM	10:00 PM - 11:00 PM	452	531	983
10:00 AM - 11:00 AM	11:00 PM - 12:00 AM	524	762	1,286	10:00 PM - 11:00 PM	11:00 PM - 12:00 AM	253	272	525
11:00 AM - 12:00 PM		615	799	1,414	11:00 PM - 12:00 AM		150	121	271
Total		4,394	6,711	11,105	Total		8,590	8,857	17,447

24-Hour NB Volume 12,984 24-Hour SB Volume 15,568



24 Hour Segment Count

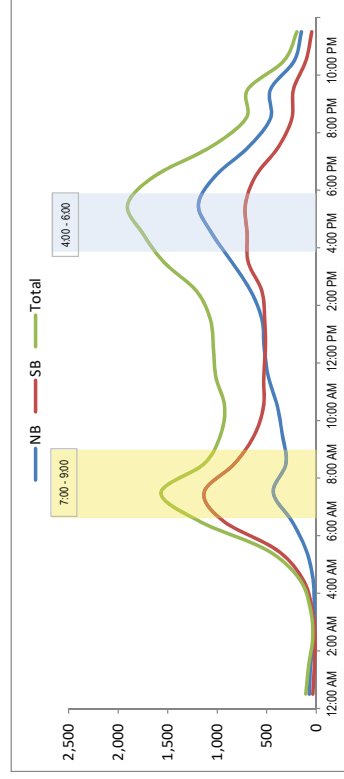
Accurate Video Counts Inc
info@accuratevideo counts.com
(619) 987-5136



Location: A. El Camino Real: Douglas Drive to Mission Avenue
Orientation: North-South
Date of Count: Tuesday, October 25, 2016
Analysts: DASH
Weather: Sunny
AVC Proj. No: 16-0584

24 Hour Segment Volume							20,854		
Time		Hourly Volume			Time		Hourly Volume		
		NB	SB	Total			NB	SB	Total
12:00 AM - 1:00 AM	1:00 AM - 2:00 AM	70	35	105	12:00 PM - 1:00 PM	1:00 PM - 2:00 PM	525	513	1,038
1:00 AM - 2:00 AM	2:00 AM - 3:00 AM	57	19	76	1:00 PM - 2:00 PM	2:00 PM - 3:00 PM	548	520	1,068
2:00 AM - 3:00 AM	3:00 AM - 4:00 AM	22	12	34	2:00 PM - 3:00 PM	3:00 PM - 4:00 PM	661	549	1,210
3:00 AM - 4:00 AM	4:00 AM - 5:00 AM	19	43	62	3:00 PM - 4:00 PM	4:00 PM - 5:00 PM	851	687	1,538
4:00 AM - 5:00 AM	5:00 AM - 6:00 AM	33	138	171	4:00 PM - 5:00 PM	5:00 PM - 6:00 PM	1,054	898	1,952
5:00 AM - 6:00 AM	6:00 AM - 7:00 AM	102	396	498	5:00 PM - 6:00 PM	6:00 PM - 7:00 PM	1,190	715	1,905
6:00 AM - 7:00 AM	7:00 AM - 8:00 AM	245	934	1,179	6:00 PM - 7:00 PM	7:00 PM - 8:00 PM	1,017	611	1,628
7:00 AM - 8:00 AM	8:00 AM - 9:00 AM	434	1,133	1,567	7:00 PM - 8:00 PM	8:00 PM - 9:00 PM	684	383	1,067
8:00 AM - 9:00 AM	9:00 AM - 10:00 AM	306	826	1,132	8:00 PM - 9:00 PM	9:00 PM - 10:00 PM	462	246	708
9:00 AM - 10:00 AM	10:00 AM - 11:00 AM	342	966	1,308	9:00 PM - 10:00 PM	10:00 PM - 11:00 PM	462	230	692
10:00 AM - 11:00 AM	11:00 PM - 12:00 AM	393	532	925	10:00 PM - 11:00 PM	11:00 PM - 12:00 AM	221	104	325
11:00 AM - 12:00 PM		482	531	1,013	11:00 PM - 12:00 AM		150	45	195
Total		2,505	5,223	7,728	Total		7,825	5,301	13,126

24-Hour NB Volume 10,330 24-Hour SB Volume 10,524



PACIFIC TECHNICAL DATA

PACIFIC TECHNICAL DATA

THURSDAY - FEBRUARY 15, 2018										CITY: OCEANSIDE				PROJECT: PTD18-0216-03					
MISSION AVENUE - EL CAMINO REAL TO DOUGLAS DRIVE																			
AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB										
00:00		25	16		12:00			192	121										
00:15		13	9		12:15			154	140										
00:30		14	2		12:30			175	120										
00:45		15	67	10	12:45			173	694	136	517	1211							
01:00		9	7		13:00			140	152										
01:15		7	10		13:15			172	133										
01:30		12	5		13:30			189	146										
01:45		4	32	6	13:45			189	690	143	574	1264							
02:00		9	6		14:00			173	110										
02:15		12	4		14:15			170	133										
02:30		8	3		14:30			190	165										
02:45		8	37	7	14:45			204	737	148	556	1293							
03:00		5	5		15:00			208	160										
03:15		7	3		15:15			221	174										
03:30		2	7		15:30			218	142										
03:45		8	22	5	15:45			228	875	177	653	1528							
04:00		6	10		16:00			252	127										
04:15		11	11		16:15			200	140										
04:30		12	19		16:30			230	131										
04:45		13	42	18	16:45			278	960	114	512	1472							
05:00		17	30		17:00			260	138										
05:15		9	31		17:15			245	152										
05:30		25	45		17:30			237	157										
05:45		20	71	63	17:45			240	982	111	558	1540							
06:00		26	61		18:00			225	145										
06:15		44	79		18:15			238	122										
06:30		54	111		18:30			193	124										
06:45		101	225	105	18:45			199	855	127	518	1373							
07:00		101	138		19:00			176	99										
07:15		95	143		19:15			131	90										
07:30		85	170		19:30			138	86										
07:45		103	384	136	19:45			121	566	71	346	912							
08:00		91	151		20:00			102	69										
08:15		100	152		20:15			104	62										
08:30		98	138		20:30			94	51										
08:45		88	377	137	20:45			98	398	70	252	650							
09:00		126	102		21:00			79	68										
09:15		99	105		21:15			105	60										
09:30		110	105		21:30			65	47										
09:45		90	425	126	21:45			45	294	35	210	504							
10:00		111	109		22:00			66	29										
10:15		109	128		22:15			44	31										
10:30		127	123		22:30			37	31										
10:45		146	493	152	22:45			48	195	22	113	308							
11:00		142	141		23:00			27	17										
11:15		150	128		23:15			29	28										
11:30		148	128		23:30			28	16										
11:45		166	606	142	23:45			19	103	12	73	176							
Total Vol.		2781		3342		6123		Daily Totals		7349		4882		12231					
								NB		SB		EB		WB					
								10130		8224		18354		Combined					

2016 Caltrans Data

Dist	Route	County		Postmile		Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak AADT	Ahead AADT
11	076	SD	R	.486		OCEANSIDE, LORETTA STREET	3650	54000	50000	3950	53000	45000
11	076	SD	R	1.156		OCEANSIDE, CANYON DRIVE	3950	53000	45000	4050	51000	46500
11	076	SD	R	1.767		OCEANSIDE, BENET ROAD	4050	51000	46500	4150	52000	46500
11	076	SD	R	2.145		OCEANSIDE, AIRPORT ROAD	4150	52000	46500	4350	56000	51000
11	076	SD	R	3.389		OCEANSIDE, EL CAMINO REAL	4350	56000	51000	3950	47500	44500
11	076	SD	R	3.745		OCEANSIDE, DOUGLAS STREET	3950	47500	44500	3850	47500	43000
11	076	SD	R	4.211		OCEANSIDE, RANCHO DEL ORO	3850	47500	43000	3700	46500	43000
11	076	SD	R	5.597		OCEANSIDE, FRAZEE ROAD	3700	46500	43000	3800	47000	43500
11	076	SD	R	6.207		COLLEGE BOULEVARD	3800	47000	43500	4200	45500	43500
11	076	SD	R	6.721		OCEANSIDE, NORTH SANTA FE ROAD	4200	45500	43500	4450	49000	47500
11	076	SD	R	9.49		VISTA WAY	3150	40500	37500	3250	39500	37000
11	076	SD		12		OLIVE HILL ROAD	3550	45000	42500	3800	46000	43000
11	076	SD		12.472		MISSION ROAD	3800	46000	43000	1750	20700	19500
11	076	SD		14.7		GIRD ROAD	1750	20700	19500	2300	27000	26000
11	076	SD	R	17.012		OLD HIGHWAY 15	2300	27000	26000	2500	32500	29500
11	076	SD	R	17.303		JCT. RTE. 15	2500	32500	29500	1900	14900	14100
11	076	SD		23.01		PALA MISSION ROAD	1400	13500	12600	610	7200	6900
11	076	SD		24.13		COUNTY ROAD S 16	640	7700	7300	960	11600	11000
11	076	SD		29.866		COLE GRADE ROAD	970	11700	11100	810	7900	7500
11	076	SD		32.87		VALLEY CENTER ROAD	810	7900	7500	480	5000	4850
11	076	SD		38.25		PALOMAR MOUNTAIN ROAD	420	3650	3000	330	2850	2250
11	076	SD		47.79		EAST PALOMAR ROAD	330	2850	2250	270	1700	1550
11	076	SD		52.319		JCT. RTE. 79	270	1700	1550			

APPENDIX B

CITY OF OCEANSIDE ROADWAY CLASSIFICATION TABLE



TABLE 3-3
CIRCULATION ELEMENT ROADWAY CLASSIFICATION LOS & CAPACITY

Class	Lanes	Cross Section ¹	Level of Service				
			A	B	C	D	E
Expressway	6	102/160 122/200	30,000	42,000	60,000	70,000	80,000
Expressway	4	102/160 122/200	25,000	35,000	50,000	55,000	60,000
Prime Arterial	6	104/124	25,000	35,000	50,000	55,000	60,000
6-Lane Major Arterial	6	104/124	20,000	28,000	40,000	45,000	50,000
5-Lane Major Arterial ²	5	102/122	17,500	24,500	35,000	40,000	45,000
4-Lane Major Arterial	4	80/100	15,000	21,000	30,000	35,000	40,000
Secondary Collector (4 lanes with 2-way left-turn lane)	4	64/84	10,000	14,000	20,000	25,000	30,000
Secondary Collector (4 lanes without 2-way left-turn lane, with left turn pockets)	4	54/74, 60/80	9,000	13,000	18,000	22,000	25,000
Collector (commercial fronting, 2-lanes with 2-way left-turn lane) ³	2	50/70	5,000	7,000	10,000	13,000	15,000
Collector (residential streets in the Circulation Element or industrial fronting)	2	40/60, 50/70	4,000	5,500	7,500	9,000	10,000
Local Street (residential streets NOT in the Circulation Element)	2	36/56, 40/60	—	—	2,200	—	—

Footnotes:

1. Cross sections are listed as curb-to-curb width/total right-of-way width, in feet.
2. Vandegrift Boulevard and El Camino Real are the only Circulation Element roadways designated as a 5-lane Major Arterial. It is not intended that other roadways be built to 5-lane Major Arterial standards.
3. This capacity will also be assumed for a two-lane one-way collector.

APPENDIX C

INTERSECTION ANALYSIS WORKSHEETS – EXISTING

Existing AM
1: Vandegrift Blvd & Douglas Dr

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	435	22	78	139	83	51	48	924	50	13	267	30
Future Volume (veh/h)	435	22	78	139	83	51	48	924	50	13	267	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	473	24	85	151	90	55	52	1004	54	14	290	33
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	67	238	287	207	117	89	1914	594	31	1596	178
Arrive On Green	0.17	0.19	0.19	0.08	0.10	0.10	0.05	0.38	0.38	0.02	0.34	0.34
Sat Flow, veh/h	3442	361	1277	3442	2174	1235	1774	5085	1577	1774	4644	517
Grp Volume(v), veh/h	473	0	109	151	72	73	52	1004	54	14	210	113
Grp Sat Flow(s), veh/h/ln	1721	0	1637	1721	1770	1640	1774	1695	1577	1774	1695	1770
Q Serve(g_s), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.2	1.2	0.4	2.3	2.4
Cycle Q Clear(g_c), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.2	1.2	0.4	2.3	2.4
Prop In Lane	1.00		0.78	1.00		0.75	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	601	0	305	287	168	156	89	1914	594	31	1165	609
V/C Ratio(X)	0.79	0.00	0.36	0.53	0.43	0.47	0.58	0.52	0.09	0.45	0.18	0.19
Avail Cap(c_a), veh/h	681	0	664	444	595	551	166	1914	594	166	1165	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	19.0	23.5	22.9	22.9	24.9	13.0	10.8	26.0	12.3	12.3
Incr Delay (d2), s/veh	5.4	0.0	0.7	1.5	1.7	2.2	5.9	1.0	0.3	9.8	0.3	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.8	0.0	1.5	1.1	1.1	1.1	0.9	4.0	0.6	0.3	1.1	1.3
LnGrp Delay(d), s/veh	26.6	0.0	19.7	25.0	24.6	25.1	30.8	14.0	11.1	35.9	12.6	13.0
LnGrp LOS	C		B	C		C	C	B	B	D	B	B
Approach Vol, veh/h	582			296			1110			337		
Approach Delay, s/veh	25.3			24.9			14.6			13.7		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	24.7	9.0	14.5	7.2	22.9	13.9	9.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.4	6.9	21.7	5.0	18.4	10.6	18.0				
Max Q Clear Time (g_c+1), s	2.4	10.2	4.3	5.1	3.5	4.4	9.0	4.3				
Green Ext Time (p_c), s	0.0	4.3	0.1	0.5	0.0	1.6	0.3	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Existing AM.syn

Synchro 9 Report

Existing AM
2: N. River Rd & Vandegrift Blvd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	43	48	113	432	50	199	95	854	267	107	735	36
Future Volume (veh/h)	43	48	113	432	50	199	95	854	267	107	735	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	52	123	470	54	216	103	928	290	116	799	39
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	358	294	601	105	421	133	1534	473	149	1100	492
Arrive On Green	0.04	0.19	0.19	0.17	0.32	0.32	0.07	0.30	0.30	0.08	0.31	0.31
Sat Flow, veh/h	1774	1863	1529	3442	324	1296	1774	5085	1569	1774	3539	1583
Grp Volume(v), veh/h	47	52	123	470	0	270	103	928	290	116	799	39
Grp Sat Flow(s), veh/h/ln	1774	1863	1529	1721	0	1620	1774	1695	1569	1774	1770	1583
Q Serve(g_s), s	1.9	1.7	5.1	9.5	0.0	9.8	4.2	11.4	11.5	4.7	14.6	1.3
Cycle Q Clear(g_c), s	1.9	1.7	5.1	9.5	0.0	9.8	4.2	11.4	11.5	4.7	14.6	1.3
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	358	294	601	0	526	133	1534	473	149	1100	492
V/C Ratio(X)	0.63	0.15	0.42	0.78	0.00	0.51	0.78	0.61	0.61	0.78	0.73	0.08
Avail Cap(c_a), veh/h	212	921	756	969	0	1063	256	2304	711	304	1701	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	24.4	25.8	28.7	0.0	19.9	33.1	21.7	21.8	32.7	22.3	17.7
Incr Delay (d2), s/veh	8.4	0.2	0.9	2.3	0.0	0.8	9.2	0.4	1.3	8.3	0.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	0.9	2.3	4.7	0.0	4.5	2.4	5.4	5.2	2.6	7.2	0.6
LnGrp Delay(d), s/veh	42.7	24.6	26.8	31.0	0.0	20.7	42.3	22.1	23.1	41.0	23.3	17.8
LnGrp LOS	D	C	C	C		C	D	C	C	D	C	B
Approach Vol, veh/h	222			740			1321			954		
Approach Delay, s/veh	29.7			27.2			23.9			25.2		
Approach LOS	C			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	26.5	17.2	18.5	10.0	27.1	7.6	28.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	33.0	20.5	36.0	10.5	35.0	8.7	47.8				
Max Q Clear Time (g_c+1), s	13.5	11.5	7.1	6.2	16.6	3.9	11.8					
Green Ext Time (p_c), s	0.1	7.7	1.2	0.7	0.1	5.6	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay	25.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↰	↰	↱	↱		↰	↱	↰	↱	↰
Traffic Volume (veh/h)	4	414	2	4	593	2	40	0	6	3	0	26
Future Volume (veh/h)	4	414	2	4	593	2	40	0	6	3	0	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	450	0	4	645	2	43	0	7	3	0	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	1170	523	10	1196	4	127	0	112	6	0	54
Arrive On Green	0.01	0.33	0.00	0.01	0.33	0.33	0.07	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3619	11	1774	0	1562	155	0	1445
Grp Volume(v), veh/h	4	450	0	4	315	332	43	0	7	31	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1861	1774	0	1562	1600	0	0
Q Serve(g_s), s	0.1	3.2	0.0	0.1	4.7	4.7	0.7	0.0	0.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.1	3.2	0.0	0.1	4.7	4.7	0.7	0.0	0.1	0.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.10		0.90
Lane Grp Cap(c), veh/h	10	1170	523	10	585	615	127	0	112	60	0	0
V/C Ratio(X)	0.41	0.38	0.00	0.41	0.54	0.54	0.34	0.00	0.06	0.52	0.00	0.00
Avail Cap(c_a), veh/h	273	2290	1025	273	1145	1204	984	0	866	888	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	8.3	0.0	16.1	8.8	8.8	14.3	0.0	14.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	25.8	0.2	0.0	25.8	0.8	0.7	1.6	0.0	0.2	6.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	1.5	0.0	0.1	2.4	2.5	0.4	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	41.9	8.5	0.0	41.9	9.6	9.6	15.9	0.0	14.3	22.0	0.0	0.0
LnGrp LOS	D	A		D	A	A	B		B	C		
Approach Vol, veh/h	454			651			50			31		
Approach Delay, s/veh	8.8			9.8			15.7			22.0		
Approach LOS	A			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s/4.7	15.2			5.7	4.7	15.2		6.8				
Change Period (Y+Rc), s/4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s/21.0	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I2), s/5.2	5.2			2.6	2.1	6.7		2.7				
Green Ext Time (p_c), s/0.0	0.0	2.6		0.1	0.0	3.4		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
4: N. River Rd & Leon St

North River Farms
10/20/2017

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT		WBT	WBR		SBL		SBR			
Lane Configurations	↰	↱		↰	↱		↰		↱			
Traffic Vol, veh/h	46	223		438	41		65		101			
Future Vol, veh/h	46	223		438	41		65		101			
Conflicting Peds, #/hr	5	0		0	5		0		2			
Sign Control	Free	Free		Free	Free		Stop		Stop			
RT Channelized	-	None		-	None		-		None			
Storage Length	25	-		-	-		0		-			
Veh in Median Storage, #	-	0		0	-		0		-			
Grade, %	-	0		0	-		0		-			
Peak Hour Factor	92	92		92	92		92		92			
Heavy Vehicles, %	2	2		2	2		2		2			
Mvmt Flow	50	242		476	45		71		110			
Major/Minor												
	Major1			Major2			Minor2					
Conflicting Flow All	526	0		-	0		846		506			
Stage 1	-	-		-	-		504		-			
Stage 2	-	-		-	-		342		-			
Critical Hdwy	4.12	-		-	-		6.42		6.22			
Critical Hdwy Stg 1	-	-		-	-		5.42		-			
Critical Hdwy Stg 2	-	-		-	-		5.42		-			
Follow-up Hdwy	2.218	-		-	-		3.518		3.318			
Pot Cap-1 Maneuver	1041	-		-	-		333		566			
Stage 1	-	-		-	-		607		-			
Stage 2	-	-		-	-		719		-			
Platoon blocked, %	-	-		-	-		-		-			
Mov Cap-1 Maneuver	1036	-		-	-		314		562			
Mov Cap-2 Maneuver	-	-		-	-		423		-			
Stage 1	-	-		-	-		575		-			
Stage 2	-	-		-	-		715		-			
Approach												
	EB			WB			SB					
HCM Control Delay, s	1.5			0			16.3					
HCM LOS							C					
Minor Lane/Major Mvmt												
	EBL	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	1036	-	-	-	498							
HCM Lane V/C Ratio	0.048	-	-	-	0.362							
HCM Control Delay (s)	8.7	-	-	-	16.3							
HCM Lane LOS	A	-	-	-	C							
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6							

HCM 2010 TWSC
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Synchro 9 Report

Existing AM
5: N. River Rd & Stallion Dr

North River Farms
10/20/2017

Intersection							
Int Delay, s/veh		0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Vol, veh/h	3	285	472	1	1	7	
Future Vol, veh/h	3	285	472	1	1	7	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	25	-	-	170	0	-	
Veh in Median Storage, #	-	0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	3	310	513	1	1	8	
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	514	0	-	0	829	513	
Stage 1	-	-	-	-	513	-	
Stage 2	-	-	-	-	316	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1052	-	-	-	340	561	
Stage 1	-	-	-	-	601	-	
Stage 2	-	-	-	-	739	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	1052	-	-	-	339	561	
Mov Cap-2 Maneuver	-	-	-	-	339	-	
Stage 1	-	-	-	-	599	-	
Stage 2	-	-	-	-	739	-	
Approach	EB		WB		SB		
HCM Control Delay, s	0.1		0		12.1		
HCM LOS					B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1052	-	-	-	519		
HCM Lane V/C Ratio	0.003	-	-	-	0.017		
HCM Control Delay (s)	8.4	-	-	-	12.1		
HCM Lane LOS	A	-	-	-	B		
HCM 95th %tile Q(veh)	0	-	-	-	0.1		

Existing AM
6: N. River Rd & Wilshire Rd

North River Farms
10/20/2017

Intersection							
Int Delay, s/veh		0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Vol, veh/h	20	266	448	13	10	25	
Future Vol, veh/h	20	266	448	13	10	25	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	Stop	
Storage Length	-	-	-	-	0	75	
Veh in Median Storage, #	-	0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	22	289	487	14	11	27	
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	501	0	-	0	827	494	
Stage 1	-	-	-	-	494	-	
Stage 2	-	-	-	-	333	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1063	-	-	-	341	575	
Stage 1	-	-	-	-	613	-	
Stage 2	-	-	-	-	726	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	1063	-	-	-	332	575	
Mov Cap-2 Maneuver	-	-	-	-	332	-	
Stage 1	-	-	-	-	598	-	
Stage 2	-	-	-	-	726	-	
Approach	EB		WB		SB		
HCM Control Delay, s	0.6		0		12.9		
HCM LOS					B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	1063	-	-	-	332	575	
HCM Lane V/C Ratio	0.02	-	-	-	0.033	0.047	
HCM Control Delay (s)	8.5	0	-	-	16.2	11.6	
HCM Lane LOS	A	A	-	-	C	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1	

Existing AM
7: N. River Rd & Sleeping Indian Rd

North River Farms
10/20/2017

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↗	↘		↖	↗
Traffic Vol, veh/h	23	257	349	9	24	106
Future Vol, veh/h	23	257	349	9	24	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	279	379	10	26	115
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	389	0	-	0	713	384
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1170	-	-	-	398	664
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1170	-	-	-	388	664
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	729	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.7		0		13.1	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1170	-	-	-	587	
HCM Lane V/C Ratio	0.021	-	-	-	0.241	
HCM Control Delay (s)	8.1	0	-	-	13.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9	

Existing AM
8: SR-76 & N. River Rd

North River Farms
10/20/2017

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	111	98	202	833	1708	212		
Future Volume (veh/h)	111	98	202	833	1708	212		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	121	107	220	905	1857	230		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	216	193	183	2573	1983	887		
Arrive On Green	0.12	0.12	0.10	0.73	0.56	0.56		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	121	107	220	905	1857	230		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	5.8	5.7	9.3	8.4	43.7	6.7		
Cycle Q Clear(g_c), s	5.8	5.7	9.3	8.4	43.7	6.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	216	193	183	2573	1983	887		
V/C Ratio(X)	0.56	0.55	1.20	0.35	0.94	0.26		
Avail Cap(c_a), veh/h	650	581	183	2573	1983	887		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.2	37.2	40.3	4.5	18.3	10.2		
Incr Delay (d2), s/veh	2.3	2.5	130.6	0.4	9.9	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.0	5.1	11.2	4.2	23.9	3.1		
LnGrp Delay(d),s/veh	39.5	39.7	171.0	4.9	28.2	10.9		
LnGrp LOS	D	D	F	A	C	B		
Approach Vol, veh/h	228		1125		2087			
Approach Delay, s/veh	39.6		37.4		26.3			
Approach LOS	D		D		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5		6	
Phs Duration (G+Y+Rc), s	72.9		17.1		15.0		57.9	
Change Period (Y+Rc), s	7.5		6.1		* 5.7		7.5	
Max Green Setting (Gmax), s	43.4		33.0		* 9.3		28.4	
Max Q Clear Time (g_c+I1), s	10.4		7.8		11.3		45.7	
Green Ext Time (p_c), s	7.6		0.7		0.0		0.0	
Intersection Summary								
HCM 2010 Ctrl Delay	30.8							
HCM 2010 LOS	C							
Notes								

Existing AM
9: Douglas Dr & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	38	69	184	1023	29	31	72	420	482	15	786	8
Future Volume (veh/h)	38	69	184	1023	29	31	72	420	482	15	786	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	41	75	200	1112	32	34	78	457	524	16	854	9
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	535	234	1236	288	306	100	1077	1800	32	955	10
Arrive On Green	0.15	0.15	0.15	0.35	0.35	0.35	0.06	0.30	0.30	0.02	0.27	0.27
Sat Flow, veh/h	1774	3539	1547	3548	828	880	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	41	75	200	1112	0	66	78	457	524	16	421	442
Grp Sat Flow(s), veh/h/ln	1774	1770	1547	1774	0	1708	1774	1770	1362	1774	1770	1856
Q Serve(g_s), s	2.0	1.9	12.7	30.1	0.0	2.6	4.4	10.4	8.4	0.9	23.2	23.2
Cycle Q Clear(g_c), s	2.0	1.9	12.7	30.1	0.0	2.6	4.4	10.4	8.4	0.9	23.2	23.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00	0.02	
Lane Grp Cap(c), veh/h	268	535	234	1236	0	595	100	1077	1800	32	471	494
V/C Ratio(X)	0.15	0.14	0.85	0.90	0.00	0.11	0.78	0.42	0.29	0.50	0.89	0.89
Avail Cap(c_a), veh/h	316	630	276	1387	0	667	104	1077	1800	88	501	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	37.2	41.8	31.3	0.0	22.3	47.1	28.1	7.5	49.2	35.7	35.7
Incr Delay (d2), s/veh	0.3	0.1	19.8	7.7	0.0	0.1	30.5	0.3	0.1	11.8	17.7	17.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.9	6.7	16.0	0.0	1.3	3.0	5.1	6.3	0.5	13.7	14.2
LnGrp Delay(d), s/veh	37.5	37.3	61.6	38.9	0.0	22.4	77.6	28.4	7.6	61.0	53.5	52.8
LnGrp LOS	D	D	E	D		C	E	C	A	E	D	D
Approach Vol, veh/h	316			1178			1059			879		
Approach Delay, s/veh	52.7			38.0			21.7			53.3		
Approach LOS	D			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.3			19.8	10.2	31.4		39.7				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5			18.0	5.9	28.6		39.5				
Max Q Clear Time (g_c+I), s	12.4			14.7	6.4	25.2		32.1				
Green Ext Time (p_c), s	0.0	5.1		0.4	0.0	1.7		3.2				
Intersection Summary												
HCM 2010 Ctrl Delay				38.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
10: Ave Descanso & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	45	424	3	10	730	56	5	3	21	84	0	98
Future Volume (veh/h)	45	424	3	10	730	56	5	3	21	84	0	98
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	49	461	3	11	793	61	5	3	23	91	0	107
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1307	9	25	1089	84	115	44	554	142	0	565
Arrive On Green	0.05	0.36	0.36	0.01	0.33	0.33	0.36	0.36	0.36	0.36	0.00	0.36
Sat Flow, veh/h	1774	3604	23	1774	3322	256	0	124	1551	0	0	1583
Grp Volume(v), veh/h	49	226	238	11	422	432	8	0	23	91	0	107
Grp Sat Flow(s), veh/h/ln	1774	1770	1858	1774	1770	1808	124	0	1551	0	0	1583
Q Serve(g_s), s	1.4	4.7	4.7	0.3	10.7	10.7	0.0	0.0	0.5	0.0	0.0	2.4
Cycle Q Clear(g_c), s	1.4	4.7	4.7	0.3	10.7	10.7	18.1	0.0	0.5	18.1	0.0	2.4
Prop In Lane	1.00		0.01	1.00		0.14	0.62		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	642	674	25	580	593	159	0	554	142	0	565
V/C Ratio(X)	0.56	0.35	0.35	0.44	0.73	0.73	0.05	0.00	0.04	0.64	0.00	0.19
Avail Cap(c_a), veh/h	206	813	854	178	785	802	159	0	554	142	0	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	11.8	11.8	24.8	15.1	15.1	13.3	0.0	10.6	25.4	0.0	11.2
Incr Delay (d2), s/veh	5.6	0.3	0.3	11.6	2.2	2.2	0.1	0.0	0.0	9.3	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	2.4	2.5	0.2	5.5	5.6	0.1	0.0	0.2	1.6	0.0	1.1
LnGrp Delay(d), s/veh	29.1	12.1	12.1	36.4	17.3	17.3	13.5	0.0	10.7	34.7	0.0	11.4
LnGrp LOS	C	B	B	D	B	B	B		B	C		B
Approach Vol, veh/h	513			865			31			198		
Approach Delay, s/veh	13.8			17.5			11.4			22.1		
Approach LOS	B			B			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.9			22.6	7.0	21.1		22.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.3			18.1	5.9	22.5		18.1				
Max Q Clear Time (g_c+I), s	6.7			20.1	3.4	12.7		20.1				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	3.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				16.8								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
11: College Blvd & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	17	29	3	325	22	880	16	196	475	915	308	27
Future Volume (veh/h)	17	29	3	325	22	880	16	196	475	915	308	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	32	3	353	24	957	17	213	516	995	335	29
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	96	9	385	26	1459	32	953	784	1020	1938	867
Arrive On Green	0.06	0.06	0.06	0.23	0.23	0.23	0.02	0.27	0.27	0.30	0.55	0.55
Sat Flow, veh/h	1774	1672	157	1666	113	2738	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	18	0	35	377	0	957	17	213	516	995	335	29
Grp Sat Flow(s), veh/h/ln	1774	0	1829	1779	0	1369	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	5.8	30.6	35.3	5.8	1.0
Cycle Q Clear(g_c), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	5.8	30.6	35.3	5.8	1.0
Prop In Lane	1.00		0.09	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	105	412	0	1459	32	953	784	1020	1938	867
V/C Ratio(X)	0.18	0.00	0.33	0.92	0.00	0.66	0.54	0.22	0.66	0.98	0.17	0.03
Avail Cap(c_a), veh/h	475	0	490	412	0	1459	82	977	795	1020	1938	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	55.8	46.2	0.0	21.1	60.0	35.0	23.0	42.9	13.9	12.9
Incr Delay (d2), s/veh	0.8	0.0	1.9	24.9	0.0	1.1	13.3	0.1	2.0	22.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.6	0.0	1.2	15.4	0.0	11.9	0.7	2.8	17.9	19.9	2.8	0.5
LnGrp Delay(d), s/veh	56.1	0.0	57.7	71.1	0.0	22.2	73.3	35.1	25.0	65.4	14.0	12.9
LnGrp LOS	E		E	E		C	E	D	C	E	B	B
Approach Vol, veh/h	53			1334			746			1359		
Approach Delay, s/veh	57.2			36.0			29.0			51.6		
Approach LOS	E			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.0	37.7		11.6	6.7	72.0		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	33.0	34.0		33.0	5.7	64.8		28.5				
Max Q Clear Time (g_c+Q), s	32.6	32.6		4.3	3.2	7.8		30.5				
Green Ext Time (p_c), s	0.0	0.5		0.2	0.0	2.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				40.9								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
12: Douglas Dr & El Camino Real

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↗	↖	↗	↗	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	366	22	46	54	50	1	36	667	22	13	1036	996
Future Volume (veh/h)	366	22	46	54	50	1	36	667	22	13	1036	996
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	398	24	0	59	54	1	39	725	24	14	1126	1083
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	573	310	264	81	75	136	73	1401	46	31	1335	1515
Arrive On Green	0.17	0.17	0.00	0.09	0.09	0.09	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	3442	1863	1583	948	868	1583	1774	3496	116	1774	3539	2787
Grp Volume(v), veh/h	398	24	0	113	0	1	39	367	382	14	1126	1083
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1815	0	1583	1774	1770	1842	1774	1770	1393
Q Serve(g_s), s	6.0	0.6	0.0	3.3	0.0	0.0	1.2	8.6	8.6	0.4	15.9	15.8
Cycle Q Clear(g_c), s	6.0	0.6	0.0	3.3	0.0	0.0	1.2	8.6	8.6	0.4	15.9	15.8
Prop In Lane	1.00		1.00	0.52		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	573	310	264	156	0	136	73	709	738	31	1335	1515
V/C Ratio(X)	0.69	0.08	0.00	0.72	0.00	0.01	0.54	0.52	0.52	0.45	0.84	0.71
Avail Cap(c_a), veh/h	1134	614	522	598	0	522	162	709	738	162	1360	1535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	19.2	0.0	24.3	0.0	22.8	25.7	12.4	12.4	26.6	15.5	9.3
Incr Delay (d2), s/veh	1.5	0.1	0.0	6.2	0.0	0.0	6.1	0.7	0.6	9.9	5.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	0.3	0.0	1.9	0.0	0.0	0.7	4.3	4.5	0.3	8.6	8.3
LnGrp Delay(d), s/veh	23.0	19.3	0.0	30.6	0.0	22.9	31.8	13.0	13.0	36.4	20.5	10.9
LnGrp LOS	C	B		C		C	C	B	B	D	C	B
Approach Vol, veh/h	422			114			788			2223		
Approach Delay, s/veh	22.8			30.5			14.0			15.9		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	26.4		13.6	6.7	25.1		9.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q), s	10.6	10.6		8.0	3.2	17.9		5.3				
Green Ext Time (p_c), s	0.0	3.4		1.2	0.0	2.7		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				16.8								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
13: El Camino Real & Mission Ave

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	162	106	105	155	267	59	121	250	101	107	880	384
Future Volume (veh/h)	162	106	105	155	267	59	121	250	101	107	880	384
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	176	115	0	168	290	64	132	272	110	116	957	417
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	572	256	270	464	101	168	1324	592	150	1288	689
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.16	0.09	0.37	0.37	0.08	0.36	0.36
Sat Flow, veh/h	3442	3539	1583	3442	2881	625	1774	3539	1583	1774	3539	1548
Grp Volume(V), veh/h	176	115	0	168	176	178	132	272	110	116	957	417
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1737	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	3.0	1.7	0.0	2.8	5.5	5.7	4.3	3.1	2.8	3.8	14.1	12.3
Cycle Q Clear(g_c), s	3.0	1.7	0.0	2.8	5.5	5.7	4.3	3.1	2.8	3.8	14.1	12.3
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	572	256	270	285	280	168	1324	592	150	1288	689
V/C Ratio(X)	0.65	0.20	0.00	0.62	0.62	0.64	0.78	0.21	0.19	0.77	0.74	0.61
Avail Cap(c_a), veh/h	317	1066	477	317	533	523	223	1362	609	312	1539	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	21.7	0.0	26.7	23.4	23.4	26.5	12.7	12.6	26.8	16.6	12.7
Incr Delay (d2), s/veh	3.6	0.2	0.0	2.8	2.2	2.4	12.5	0.1	0.1	8.1	1.6	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.8	0.0	1.4	2.9	2.9	2.7	1.5	1.2	2.2	7.1	5.3
LnGrp Delay(d), s/veh	30.3	21.9	0.0	29.5	25.6	25.8	38.9	12.8	12.7	34.9	18.2	13.7
LnGrp LOS	C	C		C	C	C	D	B	B	C	B	B
Approach Vol, veh/h	291				522		514			1490		
Approach Delay, s/veh	27.0				26.9		19.5			18.2		
Approach LOS	C				C		B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s9.6	26.9	9.2	14.2	10.2	26.3	9.2	14.1					
Change Period (Y+Rc), s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s 23.0	23.0	5.5	18.0	7.5	26.0	5.5	18.0					
Max Q Clear Time (g_c+I), s 5.1	5.1	4.8	3.7	6.3	16.1	5.0	7.7					
Green Ext Time (p_c), s 0.1	0.1	1.9	0.0	0.5	0.0	5.7	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay					21.0							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
14: Douglas Dr & Mission Ave

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	33	242	57	48	423	275	118	351	6	437	787	36
Future Volume (veh/h)	33	242	57	48	423	275	118	351	6	437	787	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	36	263	62	52	460	299	128	382	7	475	855	39
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	907	405	79	544	352	164	551	10	527	1240	57
Arrive On Green	0.04	0.26	0.26	0.04	0.27	0.27	0.09	0.15	0.15	0.30	0.36	0.36
Sat Flow, veh/h	3442	3539	1581	1774	2049	1324	1774	3554	65	1774	3447	157
Grp Volume(V), veh/h	36	263	62	52	397	362	128	190	199	475	439	455
Grp Sat Flow(s), veh/h/ln	1721	1770	1581	1774	1770	1604	1774	1770	1849	1774	1770	1835
Q Serve(g_s), s	0.7	4.4	2.2	2.1	15.5	15.6	5.1	7.4	7.4	18.7	15.4	15.4
Cycle Q Clear(g_c), s	0.7	4.4	2.2	2.1	15.5	15.6	5.1	7.4	7.4	18.7	15.4	15.4
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	122	907	405	79	470	426	164	274	286	527	637	660
V/C Ratio(X)	0.29	0.29	0.15	0.66	0.84	0.85	0.78	0.69	0.69	0.90	0.69	0.69
Avail Cap(c_a), veh/h	236	1029	460	129	522	473	314	437	456	669	791	820
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	21.8	21.0	34.3	25.4	25.4	32.4	29.2	29.2	24.6	19.9	19.9
Incr Delay (d2), s/veh	1.3	0.2	0.2	8.9	11.2	12.8	7.8	3.1	3.0	13.1	1.9	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	2.1	1.0	1.2	9.0	8.4	2.9	3.8	4.1	11.0	7.8	8.0
LnGrp Delay(d), s/veh	35.6	22.0	21.2	43.2	36.6	38.2	40.2	32.3	32.2	37.6	21.7	21.7
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h	361				811		517			1369		
Approach Delay, s/veh	23.2				37.7		34.2			27.2		
Approach LOS	C				D		C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s7.8	23.2	11.2	30.7	7.1	23.9	26.2	15.8					
Change Period (Y+Rc), s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s 21.2	21.2	12.9	32.6	5.0	21.5	27.5	18.0					
Max Q Clear Time (g_c+I), s 6.4	6.4	7.1	17.4	2.7	17.6	20.7	9.4					
Green Ext Time (p_c), s 0.0	0.0	1.6	0.1	5.1	0.0	1.7	0.9	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay					30.7							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
15: SR-76 & Douglas Dr

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔		↔	↔	↔
Traffic Volume (veh/h)	275	824	0	0	1649	205	0	0	0	272	0	549
Future Volume (veh/h)	275	824	0	0	1649	205	0	0	0	272	0	549
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	299	896	0	0	1792	223	0	0	0	296	0	597
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	299	896	0	0	1792	223	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	2.7	0.0	0.0	70.6	17.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	2.7	0.0	0.0	70.6	17.2	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.05	0.27	0.00	0.00	0.61	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	35.4	16.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	65.5	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	18.9	1.3	0.0	0.0	34.8	7.6	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	138.8	0.5	0.0	0.0	35.7	16.1	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1195				2015			0				
Approach Delay, s/veh	35.1				33.5			0.0				
Approach LOS	D				C							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	73.9				* 13	54.9		44.0				
Max Q Clear Time (g_c+1), s	4.7				15.3	72.6		0.0				
Green Ext Time (p_c), s	6.7				0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay					34.1							
HCM 2010 LOS					C							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
16: Rancho Del Oro Dr & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	26	800	297	295	1470	132	243	256	299	37	285	55
Future Volume (veh/h)	26	800	297	295	1470	132	243	256	299	37	285	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	870	323	321	1598	143	264	278	325	40	310	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1461	654	236	1664	745	280	411	368	214	633	121
Arrive On Green	0.15	0.83	0.83	0.13	0.47	0.47	0.08	0.23	0.23	0.06	0.21	0.21
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2965	567
Grp Volume(v), veh/h	28	870	323	321	1598	143	264	278	325	40	183	187
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1763
Q Serve(g_s), s	2.2	13.5	9.6	21.3	69.8	8.4	12.2	22.9	31.7	1.8	14.6	14.9
Cycle Q Clear(g_c), s	2.2	13.5	9.6	21.3	69.8	8.4	12.2	22.9	31.7	1.8	14.6	14.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.32
Lane Grp Cap(c), veh/h	134	1461	654	236	1664	745	280	411	368	214	378	376
V/C Ratio(X)	0.21	0.60	0.49	1.36	0.96	0.19	0.94	0.68	0.88	0.19	0.49	0.50
Avail Cap(c_a), veh/h	188	1461	654	236	1664	745	280	542	485	258	531	529
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	9.4	9.0	69.3	40.9	24.7	73.1	55.9	59.3	71.2	55.2	55.3
Incr Delay (d2), s/veh	0.6	1.4	2.1	164.2	2.1	0.1	38.9	2.1	14.1	0.4	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	6.6	4.3	21.2	34.4	3.7	7.3	11.4	15.3	0.9	7.2	7.4
LnGrp Delay(d), s/veh	64.3	10.8	11.2	233.5	43.0	24.7	112.1	58.0	73.4	71.6	56.2	56.4
LnGrp LOS	E	B	B	F	D	C	F	E	E	E	E	E
Approach Vol, veh/h	1221				2062			867				410
Approach Delay, s/veh	12.1				71.4			80.3				57.8
Approach LOS	B				E			F				E
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	74.0	18.7	40.3	17.8	83.2	15.7	43.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	22.5	52.2	* 13	48.0	* 17	56.5	* 12	49.0				
Max Q Clear Time (g_c+1), s	3.3	15.5	14.2	16.9	4.2	71.8	3.8	33.7				
Green Ext Time (p_c), s	0.0	7.6	0.0	2.3	0.0	0.0	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay					56.0							
HCM 2010 LOS					E							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
17: Old Grove Rd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	154	793	189	181	1437	14	165	173	136	33	294	295
Future Volume (veh/h)	154	793	189	181	1437	14	165	173	136	33	294	295
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	862	205	197	1562	15	179	188	148	36	320	321
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1448	639	214	1560	15	280	471	347	115	406	358
Arrive On Green	0.10	0.41	0.41	0.12	0.43	0.43	0.08	0.25	0.25	0.06	0.23	0.23
Sat Flow, veh/h	1774	3539	1562	1774	3592	34	3442	1915	1409	1774	1770	1560
Grp Volume(v), veh/h	167	862	205	197	769	808	179	173	163	36	320	321
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1555	1774	1770	1560
Q Serve(g_s), s	15.0	30.4	14.3	17.6	69.5	69.5	8.1	13.0	14.2	3.1	27.2	31.9
Cycle Q Clear(g_c), s	15.0	30.4	14.3	17.6	69.5	69.5	8.1	13.0	14.2	3.1	27.2	31.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	170	1448	639	214	768	806	280	435	382	115	406	358
V/C Ratio(X)	0.98	0.60	0.32	0.92	1.00	1.00	0.64	0.40	0.43	0.31	0.79	0.90
Avail Cap(c_a), veh/h	170	1448	639	214	768	806	301	487	428	144	476	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	36.9	32.1	69.6	45.3	45.3	71.2	50.4	50.8	71.4	58.0	59.8
Incr Delay (d2), s/veh	49.6	1.1	0.8	25.1	23.2	23.0	4.1	0.6	0.8	1.5	7.4	19.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	15.1	6.3	10.1	38.9	40.7	40.7	6.5	6.2	6.2	1.6	14.2	15.7
LnGrp Delay(d), s/veh	121.8	38.0	33.0	94.7	68.5	68.2	75.3	51.0	51.6	72.9	65.4	79.2
LnGrp LOS	F	D	C	F	F	F	E	D	D	E	E	E
Approach Vol, veh/h	1234			1774			515			677		
Approach Delay, s/veh	48.5			71.3			59.6			72.4		
Approach LOS	D			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	73.5	18.7	42.8	21.0	77.5	16.1	45.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	13	58.2	* 14	43.0	* 15	62.2	* 13	44.0				
Max Q Clear Time (g_c+I), s	32.4	10.1	33.9	17.0	71.5	5.1	16.2					
Green Ext Time (p_c), s	0.0	6.5	0.2	2.8	0.0	0.0	2.1					

Intersection Summary

HCM 2010 Ctrl Delay	63.3
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
18: Frazee Rd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	46	862	54	68	1496	62	65	89	122	82	142	71
Future Volume (veh/h)	46	862	54	68	1496	62	65	89	122	82	142	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	50	937	59	74	1626	67	71	97	133	89	154	77
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	2032	1031	128	2051	1034	268	214	182	253	206	280
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.11	0.11	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	50	937	59	74	1626	67	71	97	133	89	154	77
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.3	24.5	2.2	6.5	57.2	2.5	3.1	7.8	13.0	3.9	12.8	6.8
Cycle Q Clear(g_c), s	4.3	24.5	2.2	6.5	57.2	2.5	3.1	7.8	13.0	3.9	12.8	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	2032	1031	128	2051	1034	268	214	182	253	206	280
V/C Ratio(X)	0.42	0.46	0.06	0.58	0.79	0.06	0.27	0.45	0.73	0.35	0.75	0.28
Avail Cap(c_a), veh/h	133	2032	1031	146	2051	1034	280	512	435	258	501	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	19.7	10.1	71.9	26.2	10.0	69.5	66.1	68.4	70.5	69.0	56.9
Incr Delay (d2), s/veh	1.9	0.6	0.1	4.2	3.2	0.1	0.5	1.5	5.5	0.8	5.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.1	1.0	3.3	28.7	1.1	1.5	4.1	6.0	1.9	6.9	3.0	
LnGrp Delay(d), s/veh	73.6	20.3	10.1	76.1	29.4	10.2	70.0	67.6	73.9	71.3	74.3	57.4
LnGrp LOS	E	C	B	E	C	B	E	E	E	E	E	E
Approach Vol, veh/h	1046			1767			301			320		
Approach Delay, s/veh	22.3			30.6			71.0			69.4		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.3	99.9	18.1	24.7	16.4	100.7	17.5	25.4				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	13	64.4	* 13	43.0	* 12	65.6	* 12	44.0				
Max Q Clear Time (g_c+I), s	26.5	5.1	14.8	6.3	59.2	5.9	15.0					
Green Ext Time (p_c), s	0.1	7.1	0.1	1.1	0.0	5.2	0.1	1.0				

Intersection Summary

HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
19: College Blvd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	438	652	35	509	1271	519	55	479	188	581	750	315
Future Volume (veh/h)	438	652	35	509	1271	519	55	479	188	581	750	315
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	476	709	38	553	1382	564	60	521	204	632	815	342
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	469	1263	498	599	1455	737	240	581	226	617	1218	759
Arrive On Green	0.14	0.25	0.25	0.17	0.29	0.29	0.07	0.23	0.23	0.18	0.34	0.34
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2478	966	3442	3539	1579
Grp Volume(v), veh/h	476	709	38	553	1382	564	60	371	354	632	815	342
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1675	1721	1770	1579
Q Serve(g_s), s	21.8	19.5	2.7	25.3	42.6	45.8	2.6	32.5	32.8	28.7	31.4	23.0
Cycle Q Clear(g_c), s	21.8	19.5	2.7	25.3	42.6	45.8	2.6	32.5	32.8	28.7	31.4	23.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.58	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	469	1263	498	599	1455	737	240	415	393	617	1218	759
V/C Ratio(X)	1.02	0.56	0.08	0.92	0.95	0.77	0.25	0.89	0.90	1.02	0.67	0.45
Avail Cap(c_a), veh/h	469	1263	498	639	1455	737	258	453	429	617	1276	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	52.5	38.1	65.0	56.0	35.5	70.5	59.3	59.4	65.7	44.7	27.6
Incr Delay (d2), s/veh	45.4	1.8	0.3	18.6	14.3	7.4	0.5	18.9	20.6	42.4	1.3	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	18.3	9.3	1.2	13.6	21.9	22.1	1.3	18.1	17.5	17.3	15.6	10.1
LnGrp Delay(d), s/veh	114.5	54.3	38.4	83.6	70.3	42.9	71.0	78.2	80.0	108.0	46.0	28.0
LnGrp LOS	F	D	D	F	E	D	E	E	F	F	D	C
Approach Vol, veh/h	1223			2499			785			1789		
Approach Delay, s/veh	77.3			67.1			78.5			64.5		
Approach LOS	E			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.5	47.7	16.9	61.9	27.5	53.8	34.4	44.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	34.4	* 12	57.7	* 22	42.3	* 29	41.0					
Max Q Clear Time (g_c+Q), s	21.5	4.6	33.4	23.8	47.8	30.7	34.8					
Green Ext Time (p_c), s	0.5	3.6	0.1	7.6	0.0	0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				69.7								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
20: N. Santa Fe Ave & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	9	849	563	737	1767	23	509	7	620	4	29	23
Future Volume (veh/h)	9	849	563	737	1767	23	509	7	620	4	29	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	923	612	801	1921	25	559	0	674	4	32	25
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	1230	955	566	1743	23	909	0	665	124	68	53
Arrive On Green	0.02	0.35	0.35	0.16	0.49	0.49	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1581	3442	3578	46	3548	0	1580	1774	971	758
Grp Volume(v), veh/h	10	923	612	801	948	998	559	0	674	4	0	57
Grp Sat Flow(s), veh/h/ln	1774	1770	1581	1721	1770	1855	1774	0	1580	1774	0	1729
Q Serve(g_s), s	0.9	36.8	40.1	26.3	78.0	78.0	22.3	0.0	41.0	0.3	0.0	5.1
Cycle Q Clear(g_c), s	0.9	36.8	40.1	26.3	78.0	78.0	22.3	0.0	41.0	0.3	0.0	5.1
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.03	1.00	1.00	1.00	1.00	0.44	1.00
Lane Grp Cap(c), veh/h	44	1230	955	566	862	904	909	0	665	124	0	121
V/C Ratio(X)	0.23	0.75	0.64	1.42	1.10	1.10	0.61	0.00	1.01	0.03	0.00	0.47
Avail Cap(c_a), veh/h	122	1230	955	566	862	904	909	0	665	221	0	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.5	46.1	20.5	66.8	41.0	41.0	52.5	0.0	46.4	69.3	0.0	71.5
Incr Delay (d2), s/veh	2.6	4.2	3.3	197.4	61.6	62.8	1.2	0.0	38.3	0.1	0.0	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	18.8	27.9	28.0	52.8	55.7	11.1	0.0	36.4	0.2	0.0	2.5
LnGrp Delay(d), s/veh	79.1	50.3	23.8	264.3	102.6	103.8	53.8	0.0	84.7	69.5	0.0	74.4
LnGrp LOS	E	D	C	F	F	F	D		F	E		E
Approach Vol, veh/h	1545			2747			1233			61		
Approach Delay, s/veh	40.0			150.2			70.7			74.1		
Approach LOS	D			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	63.6		17.3	9.6	86.0		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	28	46.9		19.9	* 11	62.2		41.0				
Max Q Clear Time (g_c+Q), s	21.5	42.1		7.1	2.9	80.0		43.0				
Green Ext Time (p_c), s	0.0	3.4		0.2	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				101.3								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
21: Melrose Dr & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔
Traffic Volume (veh/h)	477	656	237	73	1594	223	256	87	108	102	48	310
Future Volume (veh/h)	477	656	237	73	1594	223	256	87	108	102	48	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	518	713	258	79	1733	242	278	95	117	111	52	337
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
Arrive On Green	0.14	0.45	0.45	0.08	0.39	0.39	0.09	0.23	0.23	0.08	0.22	0.22
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1571	3442	3539	1566
Grp Volume(v), veh/h	518	713	258	79	1733	242	278	95	117	111	52	337
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1571	1721	1770	1566
Q Serve(g_s), s	22.3	14.3	14.4	3.5	50.4	15.5	12.8	3.4	8.9	4.9	1.9	27.9
Cycle Q Clear(g_c), s	22.3	14.3	14.4	3.5	50.4	15.5	12.8	3.4	8.9	4.9	1.9	27.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
V/C Ratio(X)	1.08	0.31	0.30	0.29	0.87	0.33	0.92	0.12	0.24	0.40	0.07	0.59
Avail Cap(c_a), veh/h	480	2296	853	280	1988	737	301	1084	606	280	1062	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	28.0	20.3	69.5	45.0	26.4	72.5	48.6	41.2	69.9	48.9	41.3
Incr Delay (d2), s/veh	64.3	0.4	0.9	0.6	5.6	1.2	32.5	0.1	0.3	0.9	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	6.7	6.5	1.7	24.6	6.9	7.5	1.7	3.9	2.4	0.9	12.2	
LnGrp Delay(d), s/veh	133.2	28.4	21.2	70.1	50.6	27.6	105.0	48.7	41.4	70.8	48.9	42.3
LnGrp LOS	F	C	C	E	D	C	F	D	D	E	D	D
Approach Vol, veh/h	1489			2054			490			500		
Approach Delay, s/veh	63.6			48.7			78.9			49.3		
Approach LOS	E			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	79.7	19.7	42.3	28.0	70.0	18.6	43.4					
Change Period (Y+Rc), s	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4					
Max Green Setting (Gmax), s	59.7	* 14	48.0	* 22	50.4	* 13	49.0					
Max Q Clear Time (g_c+1/3), s	16.4	14.8	29.9	24.3	52.4	6.9	10.9					
Green Ext Time (p_c), s	0.1	7.0	0.0	1.4	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				56.9								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔	↔↔↔	↔↔↔	↔
Traffic Volume (veh/h)	37	670	178	603	1386	10	312	14	272	3	67	88
Future Volume (veh/h)	37	670	178	603	1386	10	312	14	272	3	67	88
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	728	193	655	1507	11	350	0	296	3	73	96
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1718	535	595	2311	17	461	0	480	7	177	157
Arrive On Green	0.07	0.34	0.34	0.17	0.44	0.44	0.13	0.00	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5208	38	3548	0	1583	73	1786	1583
Grp Volume(v), veh/h	40	728	193	655	981	537	350	0	296	76	0	96
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1859	0	1583
Q Serve(g_s), s	2.2	11.1	9.2	17.3	22.6	22.6	9.5	0.0	13.0	3.8	0.0	5.8
Cycle Q Clear(g_c), s	2.2	11.1	9.2	17.3	22.6	22.6	9.5	0.0	13.0	3.8	0.0	5.8
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.02	1.00		1.00	0.04		1.00
Lane Grp Cap(c), veh/h	119	1718	535	595	1504	824	461	0	480	184	0	157
V/C Ratio(X)	0.34	0.42	0.36	1.10	0.65	0.65	0.76	0.00	0.62	0.41	0.00	0.61
Avail Cap(c_a), veh/h	177	1718	535	595	1504	824	461	0	480	262	0	223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	25.6	25.0	41.3	21.8	21.8	42.0	0.0	29.9	42.3	0.0	43.2
Incr Delay (d2), s/veh	1.6	0.8	1.9	67.3	2.2	4.0	7.2	0.0	2.4	1.5	0.0	3.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.3	4.3	13.8	11.0	12.4	5.1	0.0	7.3	2.0	0.0	2.7	
LnGrp Delay(d), s/veh	46.2	26.4	26.9	108.6	24.0	25.8	49.1	0.0	32.3	43.8	0.0	47.0
LnGrp LOS	D	C	C	F	C	C	D		C	D		D
Approach Vol, veh/h	961			2173			646			172		
Approach Delay, s/veh	27.3			49.9			41.4			45.6		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	41.3		16.3	12.4	51.9		19.4				
Change Period (Y+Rc), s	7.5			6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.6			14.1	* 10	36.9		13.0				
Max Q Clear Time (g_c+1/3), s	13.1			7.8	4.2	24.6		15.0				
Green Ext Time (p_c), s	0.0	5.3		0.4	0.0	7.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				42.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing AM
23: College Blvd & Frazee Rd

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	76	54	119	54	76	35	63	511	15	30	977	103
Future Volume (veh/h)	76	54	119	54	76	35	63	511	15	30	977	103
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	71	76	129	59	83	38	68	555	16	33	1062	112
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	236	196	154	162	135	103	1528	683	63	1450	639
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.06	0.43	0.43	0.04	0.41	0.41
Sat Flow, veh/h	1774	1863	1547	1774	1863	1550	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	71	76	129	59	83	38	68	555	16	33	1062	112
Grp Sat Flow(s), veh/h/ln	1774	1863	1547	1774	1863	1550	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.1	2.1	4.5	1.8	2.4	1.3	2.1	6.0	0.3	1.0	14.3	2.6
Cycle Q Clear(g_c), s	2.1	2.1	4.5	1.8	2.4	1.3	2.1	6.0	0.3	1.0	14.3	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	236	196	154	162	135	103	1528	683	63	1450	639
V/C Ratio(X)	0.32	0.32	0.66	0.38	0.51	0.28	0.66	0.36	0.02	0.52	0.73	0.18
Avail Cap(c_a), veh/h	565	593	493	565	593	494	173	1885	842	185	1910	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	22.5	23.5	24.4	24.7	24.2	26.1	10.8	9.2	26.8	14.1	10.6
Incr Delay (d2), s/veh	0.8	0.8	3.7	1.6	2.5	1.1	7.0	0.1	0.0	6.4	1.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	1.1	2.1	0.9	1.4	0.6	1.2	3.0	0.1	0.6	7.1	1.1
LnGrp Delay(d), s/veh	23.2	23.2	27.2	25.9	27.2	25.3	33.1	11.0	9.2	33.2	15.1	10.7
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	B
Approach Vol, veh/h	276				180			639			1207	
Approach Delay, s/veh	25.1				26.4			13.3			15.2	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.9			11.7	7.8	27.6		9.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.1			18.0	5.5	30.5		18.0				
Max Q Clear Time (g_c+I), s	8.0			6.5	4.1	16.3		4.4				
Green Ext Time (p_c), s	0.0	3.9		0.8	0.0	6.8		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				16.7								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
1: Vandegrift Blvd & Douglas Dr

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	129	69	53	75	51	10	96	328	79	45	807	328
Future Volume (veh/h)	129	69	53	75	51	10	96	328	79	45	807	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	75	58	82	55	11	104	357	86	49	877	357
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	125	97	227	332	65	134	2137	665	86	1391	564
Arrive On Green	0.08	0.13	0.13	0.07	0.11	0.11	0.08	0.42	0.42	0.05	0.39	0.39
Sat Flow, veh/h	3442	972	752	3442	2953	573	1774	5085	1583	1774	3539	1436
Grp Volume(v), veh/h	140	0	133	82	32	34	104	357	86	49	840	394
Grp Sat Flow(s), veh/h/ln	1721	0	1724	1721	1770	1756	1774	1695	1583	1774	1695	1585
Q Serve(g_s), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.3	1.8	1.4	10.7	10.7
Cycle Q Clear(g_c), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.3	1.8	1.4	10.7	10.7
Prop In Lane	1.00		0.44	1.00		0.33	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	282	0	222	227	199	198	134	2137	665	86	1333	623
V/C Ratio(X)	0.50	0.00	0.60	0.36	0.16	0.17	0.78	0.17	0.13	0.57	0.63	0.63
Avail Cap(c_a), veh/h	354	0	597	322	596	592	249	2137	665	206	1333	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	22.0	23.9	21.4	21.4	24.3	9.7	9.5	24.9	13.1	13.1
Incr Delay (d2), s/veh	1.4	0.0	2.6	1.0	0.4	0.4	9.3	0.2	0.4	5.9	2.3	4.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	0.0	2.0	0.6	0.5	0.5	1.8	1.1	0.8	0.8	5.3	5.4
LnGrp Delay(d), s/veh	24.8	0.0	24.6	24.8	21.8	21.8	33.5	9.8	9.9	30.7	15.3	17.9
LnGrp LOS	C		C	C	C	C	C	A	A	C	B	B
Approach Vol, veh/h	273				148			547			1283	
Approach Delay, s/veh	24.7				23.5			14.3			16.7	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	26.9	8.0	11.4	8.5	25.5	8.9	10.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.2	22.3	5.0	18.5	7.5	21.0	5.5	18.0				
Max Q Clear Time (g_c+I), s	3.4	4.3	3.2	5.9	5.1	12.7	4.1	2.9				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.5	0.0	5.0	0.1	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay					17.6							
HCM 2010 LOS					B							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
2: N. River Rd & Vandegrift Blvd

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	93	84	114	333	125	73	226	741	564	244	1016	66
Future Volume (veh/h)	93	84	114	333	125	73	226	741	564	244	1016	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	91	124	362	136	79	246	805	613	265	1104	72
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	376	305	418	275	160	276	1704	521	297	1226	536
Arrive On Green	0.07	0.20	0.20	0.12	0.25	0.25	0.16	0.34	0.34	0.17	0.35	0.35
Sat Flow, veh/h	1774	1863	1513	3442	1097	638	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	101	91	124	362	0	215	246	805	613	265	1104	72
Grp Sat Flow(s), veh/h/ln	1774	1863	1513	1721	0	1735	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	5.8	4.2	7.3	10.6	0.0	10.9	14.0	12.9	34.5	15.1	30.5	3.3
Cycle Q Clear(g_c), s	5.8	4.2	7.3	10.6	0.0	10.9	14.0	12.9	34.5	15.1	30.5	3.3
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	376	305	418	0	435	276	1704	521	297	1226	536
V/C Ratio(X)	0.79	0.24	0.41	0.87	0.00	0.49	0.89	0.47	1.18	0.89	0.90	0.13
Avail Cap(c_a), veh/h	231	651	529	418	0	591	284	1704	521	327	1272	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	34.5	35.7	44.4	0.0	33.0	42.6	27.1	34.2	42.0	32.0	23.1
Incr Delay (d2), s/veh	10.3	0.3	0.9	17.2	0.0	0.9	27.1	0.2	97.8	23.9	8.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	2.2	3.1	6.1	0.0	5.3	8.9	6.1	28.9	9.3	16.4	1.4
LnGrp Delay(d), s/veh	57.3	34.8	36.6	61.6	0.0	33.8	69.7	27.3	132.0	65.9	40.7	23.2
LnGrp LOS	E	C	D	E		C	E	C	F	E	D	C
Approach Vol, veh/h	316			577			1664			1441		
Approach Delay, s/veh	42.7			51.3			72.1			44.5		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.7	39.0	17.0	25.3	20.5	40.2	11.9	30.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	34.5	34.5	12.5	36.0	16.5	37.0	13.4	35.1				
Max Q Clear Time (g_c+I), s	36.5	12.6	9.3	16.0	32.5	7.8	12.9					
Green Ext Time (p_c), s	0.2	0.0	0.0	0.9	0.0	2.9	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay	56.8											
HCM 2010 LOS	E											

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	15	662	7	7	436	4	28	0	10	5	1	26
Future Volume (veh/h)	15	662	7	7	436	4	28	0	10	5	1	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	720	0	8	474	4	30	0	11	5	1	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1257	562	19	1242	10	124	0	107	10	2	54
Arrive On Green	0.02	0.36	0.00	0.01	0.35	0.35	0.07	0.00	0.07	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3595	30	1774	0	1530	238	48	1331
Grp Volume(v), veh/h	16	720	0	8	233	245	30	0	11	34	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1856	1774	0	1530	1616	0	0
Q Serve(g_s), s	0.3	5.7	0.0	0.2	3.4	3.4	0.5	0.0	0.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	5.7	0.0	0.2	3.4	3.4	0.5	0.0	0.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.15		0.82
Lane Grp Cap(c), veh/h	37	1257	562	19	611	641	124	0	107	65	0	0
V/C Ratio(X)	0.44	0.57	0.00	0.42	0.38	0.38	0.24	0.00	0.10	0.52	0.00	0.00
Avail Cap(c_a), veh/h	258	2164	968	258	1082	1135	930	0	802	847	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.6	9.0	0.0	16.9	8.5	8.5	15.1	0.0	15.0	16.2	0.0	0.0
Incr Delay (d2), s/veh	8.0	0.4	0.0	14.2	0.4	0.4	1.0	0.0	0.4	6.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	2.8	0.0	0.1	1.7	1.8	0.3	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	24.6	9.4	0.0	31.0	8.9	8.9	16.1	0.0	15.4	22.5	0.0	0.0
LnGrp LOS	C	A		C	A	A	B		B	C		
Approach Vol, veh/h	736			486			41			34		
Approach Delay, s/veh	9.7			9.2			15.9			22.5		
Approach LOS	A			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.7			5.9	5.2	16.4		6.9				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	7.7			2.7	2.3	5.4		2.5				
Green Ext Time (p_c), s	0.0	4.1		0.1	0.0	2.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	10.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
4: N. River Rd & Leon St

North River Farms
10/20/2017

Intersection							
Int Delay, s/veh	2.5						
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↘ ↗	↗	↘		↘ ↗		
Traffic Vol, veh/h	95	515	311	47	47	66	
Future Vol, veh/h	95	515	311	47	47	66	
Conflicting Peds, #/hr	1	0	0	1	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	25	-	-	-	0	-	
Veh in Median Storage, #	-	0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	103	560	338	51	51	72	
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	390	0	-	0	1131	365	
Stage 1	-	-	-	-	365	-	
Stage 2	-	-	-	-	766	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1169	-	-	-	225	680	
Stage 1	-	-	-	-	702	-	
Stage 2	-	-	-	-	459	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	1168	-	-	-	205	679	
Mov Cap-2 Maneuver	-	-	-	-	290	-	
Stage 1	-	-	-	-	640	-	
Stage 2	-	-	-	-	459	-	
Approach	EB		WB		SB		
HCM Control Delay, s	1.3		0		16.5		
HCM LOS					C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1168	-	-	-	436		
HCM Lane V/C Ratio	0.088	-	-	-	0.282		
HCM Control Delay (s)	8.4	-	-	-	16.5		
HCM Lane LOS	A	-	-	-	C		
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1		

Existing PM
5: N. River Rd & Stallion Dr

North River Farms
10/20/2017

Intersection							
Int Delay, s/veh	0.1						
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↘ ↗	↗	↗	↗	↘ ↗		
Traffic Vol, veh/h	6	556	353	1	0	5	
Future Vol, veh/h	6	556	353	1	0	5	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	25	-	-	170	0	-	
Veh in Median Storage, #	-	0	0	-	0	-	
Grade, %	-	0	0	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	7	604	384	1	0	5	
Major/Minor	Major1		Major2		Minor2		
Conflicting Flow All	385	0	-	0	1002	384	
Stage 1	-	-	-	-	384	-	
Stage 2	-	-	-	-	618	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1173	-	-	-	269	664	
Stage 1	-	-	-	-	688	-	
Stage 2	-	-	-	-	538	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	1173	-	-	-	267	664	
Mov Cap-2 Maneuver	-	-	-	-	267	-	
Stage 1	-	-	-	-	684	-	
Stage 2	-	-	-	-	538	-	
Approach	EB		WB		SB		
HCM Control Delay, s	0.1		0		10.5		
HCM LOS					B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1173	-	-	-	664		
HCM Lane V/C Ratio	0.006	-	-	-	0.008		
HCM Control Delay (s)	8.1	-	-	-	10.5		
HCM Lane LOS	A	-	-	-	B		
HCM 95th %tile Q(veh)	0	-	-	-	0		

Existing PM
6: N. River Rd & Wilshire Rd

North River Farms
10/20/2017

Intersection							
Int Delay, s/veh		1					
Movement	EBL	EBT		WBT	WBR	SBL	SBR
Lane Configurations		↰		↰		↰	↰
Traffic Vol, veh/h	17	539		307	13	19	47
Future Vol, veh/h	17	539		307	13	19	47
Conflicting Peds, #/hr	0	0		0	0	0	0
Sign Control	Free	Free		Free	Free	Stop	Stop
RT Channelized	-	None		-	None	-	Stop
Storage Length	-	-		-	-	0	75
Veh in Median Storage, #	-	0		0	-	0	-
Grade, %	-	0		0	-	0	-
Peak Hour Factor	92	92		92	92	92	92
Heavy Vehicles, %	2	2		2	2	2	2
Mvmt Flow	18	586		334	14	21	51
Major/Minor	Major1			Major2		Minor2	
Conflicting Flow All	348	0		-	0	963	341
Stage 1	-	-		-	-	341	-
Stage 2	-	-		-	-	622	-
Critical Hdwy	4.12	-		-	-	6.42	6.22
Critical Hdwy Stg 1	-	-		-	-	5.42	-
Critical Hdwy Stg 2	-	-		-	-	5.42	-
Follow-up Hdwy	2.218	-		-	-	3.518	3.318
Pot Cap-1 Maneuver	1211	-		-	-	284	701
Stage 1	-	-		-	-	720	-
Stage 2	-	-		-	-	535	-
Platoon blocked, %	-	-		-	-	-	-
Mov Cap-1 Maneuver	1211	-		-	-	278	701
Mov Cap-2 Maneuver	-	-		-	-	278	-
Stage 1	-	-		-	-	704	-
Stage 2	-	-		-	-	535	-
Approach	EB			WB		SB	
HCM Control Delay, s	0.2			0		12.9	
HCM LOS						B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	1211	-	-	-	278	701	
HCM Lane V/C Ratio	0.015	-	-	-	0.074	0.073	
HCM Control Delay (s)	8	0	-	-	19	10.5	
HCM Lane LOS	A	A	-	-	C	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2	

Existing PM
7: N. River Rd & Sleeping Indian Rd

North River Farms
10/20/2017

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	499	251	13	16	57
Future Vol, veh/h	87	499	251	13	16	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	542	273	14	17	62
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	287	0	-	0	1012	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	732	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1275	-	-	-	265	759
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	476	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	-	237	759
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	476	-
Approach	EB		WB		SB	
HCM Control Delay, s	1.2		0		13.3	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1275	-	-	-	512	
HCM Lane V/C Ratio	0.074	-	-	-	0.155	
HCM Control Delay (s)	8.1	0	-	-	13.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	

Existing PM
8: SR-76 & N. River Rd

North River Farms
10/20/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	220	262	93	1868	1144	143		
Future Volume (veh/h)	220	262	93	1868	1144	143		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	239	285	101	2030	1243	155		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	365	325	139	2374	1915	857		
Arrive On Green	0.21	0.21	0.08	0.67	0.54	0.54		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	239	285	101	2030	1243	155		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	13.6	19.2	6.1	48.7	27.3	5.5		
Cycle Q Clear(g_c), s	13.6	19.2	6.1	48.7	27.3	5.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	365	325	139	2374	1915	857		
V/C Ratio(X)	0.66	0.88	0.73	0.85	0.65	0.18		
Avail Cap(c_a), veh/h	532	475	150	2374	1915	857		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.1	42.3	49.6	14.0	17.9	12.8		
Incr Delay (d2), s/veh	2.0	12.0	15.2	4.2	1.7	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	16.6	3.6	24.8	13.8	2.5		
LnGrp Delay(d),s/veh	42.1	54.3	64.7	18.2	19.6	13.3		
LnGrp LOS	D	D	E	B	B	B		
Approach Vol, veh/h	524			2131	1398			
Approach Delay, s/veh	48.8			20.4	18.9			
Approach LOS	D			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		81.3		28.7	14.3	67.0		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9.3	48.4		
Max Q Clear Time (g_c+I), s		50.7		21.2	8.1	29.3		
Green Ext Time (p_c), s		10.7		1.4	0.0	9.7		
Intersection Summary								
HCM 2010 Ctrl Delay			23.5					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
9: Douglas Dr & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	47	104	89	659	59	41	188	776	1132	38	763	37
Future Volume (veh/h)	47	104	89	659	59	41	188	776	1132	38	763	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	51	113	97	716	64	45	204	843	1230	41	829	40
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	393	170	843	240	169	241	1415	1751	65	1032	50
Arrive On Green	0.11	0.11	0.11	0.24	0.24	0.24	0.14	0.40	0.40	0.04	0.30	0.30
Sat Flow, veh/h	1774	3539	1528	3548	1012	711	1774	3539	2722	1774	3433	166
Grp Volume(v), veh/h	51	113	97	716	0	109	204	843	1230	41	427	442
Grp Sat Flow(s), veh/h/ln	1774	1770	1528	1774	0	1723	1774	1770	1361	1774	1770	1829
Q Serve(g_s), s	2.2	2.5	5.0	16.1	0.0	4.3	9.4	15.7	25.0	1.9	18.7	18.7
Cycle Q Clear(g_c), s	2.2	2.5	5.0	16.1	0.0	4.3	9.4	15.7	25.0	1.9	18.7	18.7
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	197	393	170	843	0	409	241	1415	1751	65	532	550
V/C Ratio(X)	0.26	0.29	0.57	0.85	0.00	0.27	0.85	0.60	0.70	0.63	0.80	0.80
Avail Cap(c_a), veh/h	381	760	328	995	0	483	269	1500	1816	106	587	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	34.2	35.3	30.5	0.0	26.0	35.3	19.8	10.0	39.8	27.0	27.0
Incr Delay (d2), s/veh	0.7	0.4	3.0	6.2	0.0	0.3	19.9	0.6	1.2	9.6	7.3	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	1.2	2.3	8.6	0.0	2.1	5.9	7.7	14.3	1.1	10.2	10.5
LnGrp Delay(d), s/veh	34.8	34.6	38.4	36.7	0.0	26.3	55.2	20.4	11.2	49.4	34.3	34.1
LnGrp LOS	C	C	D	D		C	E	C	B	D	C	C
Approach Vol, veh/h	261			825			2277				910	
Approach Delay, s/veh	36.0			35.3			18.6				34.9	
Approach LOS	D			D			B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0			13.8	15.9	29.7		24.4				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	35.5			18.0	12.7	27.8		23.5				
Max Q Clear Time (g_c+I), s	27.0			7.0	11.4	20.7		18.1				
Green Ext Time (p_c), s	0.0	6.5		0.8	0.1	3.1		1.8				
Intersection Summary												
HCM 2010 Ctrl Delay				26.3								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
10: Ave Descanso & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	108	796	8	23	638	85	2	4	30	72	4	93
Future Volume (veh/h)	108	796	8	23	638	85	2	4	30	72	4	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	117	865	9	25	693	92	2	4	33	78	4	101
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	1528	16	55	1125	149	181	229	240	401	16	247
Arrive On Green	0.10	0.43	0.43	0.03	0.36	0.36	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1774	3587	37	1774	3129	415	275	1464	1539	1275	101	1583
Grp Volume(v), veh/h	117	427	447	25	392	393	6	0	33	82	0	101
Grp Sat Flow(s), veh/h/ln	1774	1770	1855	1774	1770	1774	1739	0	1539	1376	0	1583
Q Serve(g_s), s	2.2	6.4	6.4	0.5	6.3	6.4	0.0	0.0	0.6	1.7	0.0	2.0
Cycle Q Clear(g_c), s	2.2	6.4	6.4	0.5	6.3	6.4	0.1	0.0	0.6	1.8	0.0	2.0
Prop In Lane	1.00		0.02	1.00		0.23	0.33		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	172	754	790	55	636	638	409	0	240	416	0	247
V/C Ratio(X)	0.68	0.57	0.57	0.46	0.62	0.62	0.01	0.00	0.14	0.20	0.00	0.41
Avail Cap(c_a), veh/h	433	1193	1250	254	1015	1018	992	0	795	908	0	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	7.6	7.6	16.6	9.2	9.2	12.5	0.0	12.7	13.2	0.0	13.3
Incr Delay (d2), s/veh	4.6	0.7	0.6	5.8	1.0	1.0	0.0	0.0	0.3	0.2	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.2	3.4	0.3	3.2	3.2	3.2	0.0	0.0	0.3	0.7	0.0	0.9
LnGrp Delay(d), s/veh	19.8	8.2	8.2	22.4	10.2	10.2	12.5	0.0	12.9	13.4	0.0	14.3
LnGrp LOS	B	A	A	C	B	B	B		B	B		B
Approach Vol, veh/h	991			810			39			183		
Approach Delay, s/veh	9.6			10.5			12.9			13.9		
Approach LOS	A			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3			9.9	7.9	17.0		9.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	8.5	20.0		18.0				
Max Q Clear Time (g_c+I), s	8.4			4.0	4.2	8.4		2.6				
Green Ext Time (p_c), s	0.0	5.0		0.6	0.1	3.9		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
11: College Blvd & N. River Rd

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	26	27	17	401	24	1033	18	397	431	1035	295	33
Future Volume (veh/h)	26	27	17	401	24	1033	18	397	431	1035	295	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	29	18	436	26	1123	20	432	468	1125	321	36
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	60	37	426	25	1488	36	893	794	988	1837	822
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.25	0.25	0.29	0.52	0.52
Sat Flow, veh/h	1774	1054	654	1679	100	2711	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	28	0	47	462	0	1123	20	432	468	1125	321	36
Grp Sat Flow(s), veh/h/ln	1774	0	1709	1779	0	1355	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	12.5	25.6	34.5	5.8	1.3
Cycle Q Clear(g_c), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	12.5	25.6	34.5	5.8	1.3
Prop In Lane	1.00		0.38	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	98	451	0	1488	36	893	794	988	1837	822
V/C Ratio(X)	0.28	0.00	0.48	1.02	0.00	0.75	0.56	0.48	0.59	1.14	0.17	0.04
Avail Cap(c_a), veh/h	487	0	469	451	0	1488	87	1001	842	988	1843	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	54.9	44.9	0.0	21.6	58.3	38.3	21.0	42.9	15.3	14.2
Incr Delay (d2), s/veh	1.5	0.0	3.6	48.5	0.0	2.2	12.8	0.4	1.0	75.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.9	0.0	1.6	21.0	0.0	14.8	0.8	6.2	15.7	26.6	2.8	0.6
LnGrp Delay(d), s/veh	55.7	0.0	58.5	93.4	0.0	23.9	71.1	38.7	22.0	117.8	15.3	14.3
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	75			1585			920			1482		
Approach Delay, s/veh	57.5			44.1			30.9			93.1		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	34.8		11.4	6.9	66.9		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0			33.0	5.9	62.6		30.5				
Max Q Clear Time (g_c+I), s	27.6			5.2	3.3	7.8		32.5				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	2.5		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
12: Douglas Dr & El Camino Real

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	1018	53	44	52	30	3	75	1152	46	9	735	683
Future Volume (veh/h)	1018	53	44	52	30	3	75	1152	46	9	735	683
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1107	58	0	57	33	3	82	1252	50	10	799	742
Adj No. of Lanes	2	1	1	0	1	1	2	0	1	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1203	651	554	75	43	104	105	1412	56	21	1274	1977
Arrive On Green	0.35	0.35	0.00	0.07	0.07	0.07	0.06	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1144	662	1583	1774	3469	138	1774	3539	2787
Grp Volume(v), veh/h	1107	58	0	90	0	3	82	638	664	10	799	742
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1806	0	1583	1774	1770	1838	1774	1770	1393
Q Serve(g_s), s	33.5	2.3	0.0	5.3	0.0	0.2	5.0	36.3	36.4	0.6	20.3	11.5
Cycle Q Clear(g_c), s	33.5	2.3	0.0	5.3	0.0	0.2	5.0	36.3	36.4	0.6	20.3	11.5
Prop In Lane	1.00		1.00	0.63		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	1203	651	554	118	0	104	105	720	748	21	1274	1977
V/C Ratio(X)	0.92	0.09	0.00	0.76	0.00	0.03	0.78	0.89	0.89	0.47	0.63	0.38
Avail Cap(c_a), veh/h	1296	701	596	299	0	262	204	783	814	82	1323	2016
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	23.7	0.0	49.9	0.0	47.5	50.4	29.9	29.9	53.3	28.7	6.2
Incr Delay (d2), s/veh	10.3	0.1	0.0	9.5	0.0	0.1	11.8	11.3	11.0	15.3	0.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	17.6	1.2	0.0	3.0	0.0	0.1	2.8	20.0	20.7	0.4	10.0	9.7
LnGrp Delay(d), s/veh	44.2	23.8	0.0	59.5	0.0	47.6	62.2	41.1	40.9	68.6	29.6	6.4
LnGrp LOS	D	C		E		D	E	D	D	E	C	A
Approach Vol, veh/h	1165				93		1384			1551		
Approach Delay, s/veh	43.2				59.1		42.3			18.8		
Approach LOS	D				E		D			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	48.7			42.5	10.9	43.6		11.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	48.1			40.9	12.5	40.6		18.0				
Max Q Clear Time (g_c+I), s	38.4			35.5	7.0	22.3		7.3				
Green Ext Time (p_c), s	0.0	5.8		2.5	0.1	8.8		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				34.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
13: El Camino Real & Mission Ave

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	503	481	114	212	355	123	185	739	271	188	577	339
Future Volume (veh/h)	503	481	114	212	355	123	185	739	271	188	577	339
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	547	523	0	230	386	134	201	803	295	204	627	368
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	632	993	444	317	485	166	238	968	433	241	974	721
Arrive On Green	0.18	0.28	0.00	0.09	0.19	0.19	0.13	0.27	0.27	0.14	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	2570	879	1774	3539	1583	1774	3539	1564
Grp Volume(v), veh/h	547	523	0	230	264	256	201	803	295	204	627	368
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1679	1774	1770	1583	1774	1770	1564
Q Serve(g_s), s	12.7	10.3	0.0	5.4	11.7	12.0	9.1	17.6	13.7	9.3	12.9	13.7
Cycle Q Clear(g_c), s	12.7	10.3	0.0	5.4	11.7	12.0	9.1	17.6	13.7	9.3	12.9	13.7
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	632	993	444	317	334	317	238	968	433	241	974	721
V/C Ratio(X)	0.87	0.53	0.00	0.73	0.79	0.81	0.84	0.83	0.68	0.85	0.64	0.51
Avail Cap(c_a), veh/h	688	1003	449	463	386	366	269	1072	479	269	1072	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	25.1	0.0	36.5	31.9	32.1	34.9	28.2	26.8	34.8	26.4	15.8
Incr Delay (d2), s/veh	10.6	0.5	0.0	3.2	9.3	11.2	19.3	5.2	3.4	19.7	1.2	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	16.9	5.1	0.0	2.7	6.6	6.5	5.7	9.3	6.4	5.9	6.4	6.0
LnGrp Delay(d), s/veh	43.3	25.6	0.0	39.7	41.3	43.2	54.1	33.3	30.2	54.6	27.5	16.4
LnGrp LOS	D	C		D	D	D	D	C	C	D	C	B
Approach Vol, veh/h	1070				750		1299			1199		
Approach Delay, s/veh	34.6				41.4		35.9			28.7		
Approach LOS	C				D		D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.7	27.1	12.1	27.7	15.6	27.2	19.7	20.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	42.5	25.0	11.1	23.4	12.5	25.0	16.5	18.0				
Max Q Clear Time (g_c+I), s	19.6	7.4	12.3	11.1	15.7	14.7	14.0					
Green Ext Time (p_c), s	0.1	3.0	0.3	2.6	0.1	3.9	0.4	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay					34.5							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
14: Douglas Dr & Mission Ave

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	203	709	140	38	339	354	182	596	4	246	523	31
Future Volume (veh/h)	203	709	140	38	339	354	182	596	4	246	523	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	221	771	152	41	368	385	198	648	4	267	568	34
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	1135	496	68	477	419	240	795	5	313	886	53
Arrive On Green	0.09	0.32	0.32	0.04	0.27	0.27	0.14	0.22	0.22	0.18	0.26	0.26
Sat Flow, veh/h	3442	3539	1546	1774	1770	1554	1774	3605	22	1774	3389	203
Grp Volume(v), veh/h	221	771	152	41	368	385	198	318	334	267	296	306
Grp Sat Flow(s), veh/h/ln	1721	1770	1546	1774	1770	1554	1774	1770	1858	1774	1770	1822
Q Serve(g_s), s	4.6	13.9	5.5	1.7	14.1	17.7	8.0	12.6	12.6	10.8	10.9	11.0
Cycle Q Clear(g_c), s	4.6	13.9	5.5	1.7	14.1	17.7	8.0	12.6	12.6	10.8	10.9	11.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	308	1135	496	68	477	419	240	390	410	313	463	476
V/C Ratio(X)	0.72	0.68	0.31	0.60	0.77	0.92	0.83	0.82	0.82	0.85	0.64	0.64
Avail Cap(c_a), veh/h	350	1135	496	120	480	422	306	432	454	397	523	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	21.7	18.9	34.9	24.8	26.1	31.0	27.3	27.3	29.4	24.1	24.2
Incr Delay (d2), s/veh	6.0	1.7	0.3	8.2	7.5	24.9	13.5	10.6	10.1	13.6	2.2	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.4	7.0	2.4	1.0	7.8	10.5	4.8	7.2	7.6	6.4	5.6	5.8
LnGrp Delay(d), s/veh	38.6	23.4	19.2	43.0	32.3	51.1	44.5	37.9	37.4	43.0	26.3	26.3
LnGrp LOS	D	C	B	D	C	D	D	D	D	D	C	C
Approach Vol, veh/h	1144			794			850			869		
Approach Delay, s/veh	25.8			42.0			39.3			31.5		
Approach LOS	C			D			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s7.3	28.1	14.5	23.8	11.1	24.4	17.5	20.7					
Change Period (Y+Rc), s4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s8	22.5	12.7	21.8	7.5	20.0	16.5	18.0					
Max Q Clear Time (g_c+1), s13.8	15.9	10.0	13.0	6.6	19.7	12.8	14.6					
Green Ext Time (p_c), s0.0	3.1	0.1	2.4	0.1	0.1	0.3	1.3					

Intersection Summary

HCM 2010 Ctrl Delay	33.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
15: SR-76 & Douglas Dr

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	559	1862	0	0	1259	232	0	0	0	237	0	342
Future Volume (veh/h)	559	1862	0	0	1259	232	0	0	0	237	0	342
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	608	2024	0	0	1368	252	0	0	0	258	0	372
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	522	3382	0	0	2733	1223	0	1	0	0	0	0
Arrive On Green	0.15	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	608	2024	0	0	1368	252	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	27.3	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.3	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	522	3382	0	0	2733	1223	0	1	0	0	0	0
V/C Ratio(X)	1.16	0.60	0.00	0.00	0.50	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	522	3382	0	0	2733	1223	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	76.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	93.5	0.8	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln19.8	5.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	169.8	1.2	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	2632			1620			0					
Approach Delay, s/veh	40.2			0.4			0.0					
Approach LOS	D			A								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	180.0				33.0	147.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	92.9				* 27	59.9		44.0				
Max Q Clear Time (g_c+1), s	12.7				29.3	2.0		0.0				
Green Ext Time (p_c), s	30.8				0.0	18.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
16: Rancho Del Oro Dr & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	30	1735	244	237	1070	91	222	260	246	87	200	38
Future Volume (veh/h)	30	1735	244	237	1070	91	222	260	246	87	200	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	33	1886	265	258	1163	99	241	283	267	95	217	41
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1669	747	210	1818	813	249	358	314	227	584	108
Arrive On Green	0.05	0.32	0.32	0.12	0.51	0.51	0.07	0.20	0.20	0.07	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1553	3442	2975	552
Grp Volume(v), veh/h	33	1886	265	258	1163	99	241	283	267	95	127	131
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1553	1721	1770	1757
Q Serve(g_s), s	3.2	84.9	23.2	21.3	42.9	5.8	12.6	27.3	29.8	4.8	11.2	11.6
Cycle Q Clear(g_c), s	3.2	84.9	23.2	21.3	42.9	5.8	12.6	27.3	29.8	4.8	11.2	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	135	1669	747	210	1818	813	249	358	314	227	347	345
V/C Ratio(X)	0.24	1.13	0.35	1.23	0.64	0.12	0.97	0.79	0.85	0.42	0.37	0.38
Avail Cap(c_a), veh/h	168	1669	747	210	1818	813	249	482	423	229	472	468
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.4	61.6	40.5	79.3	31.7	22.7	83.3	68.2	69.1	80.7	62.7	62.8
Incr Delay (d2), s/veh	0.4	62.7	0.6	128.3	1.2	0.2	48.4	6.3	11.6	1.2	0.6	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	56.1	10.3	17.9	21.1	2.6	7.7	14.0	13.8	2.3	5.6	5.7
LnGrp Delay(d), s/veh	80.8	124.2	41.1	207.7	32.9	22.9	131.7	74.4	80.8	81.9	63.3	63.5
LnGrp LOS	F	F	D	F	C	C	F	E	F	F	E	E
Approach Vol, veh/h	2184				1520			791			353	
Approach Delay, s/veh	113.5				61.9			94.0			68.4	
Approach LOS	F				E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	92.9	18.7	41.4	19.4	100.4	17.6	42.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	72.2	* 13	48.0	* 17	76.5	* 12	49.0					
Max Q Clear Time (g_c+Q), s	86.9	14.6	13.6	5.2	44.9	6.8	31.8					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.0	11.1	0.1	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay					90.9							
HCM 2010 LOS					F							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
17: Old Grove Rd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	207	1635	226	141	1116	14	151	260	185	10	107	131
Future Volume (veh/h)	207	1635	226	141	1116	14	151	260	185	10	107	131
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	225	1777	246	153	1213	15	164	283	201	11	116	142
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	2019	892	148	1848	23	248	347	238	54	234	209
Arrive On Green	0.14	0.57	0.57	0.08	0.52	0.52	0.07	0.17	0.17	0.03	0.13	0.13
Sat Flow, veh/h	1774	3539	1563	1774	3580	44	3442	1993	1370	1774	1770	1580
Grp Volume(v), veh/h	225	1777	246	153	599	629	164	250	234	11	116	142
Grp Sat Flow(s), veh/h/ln	1774	1770	1563	1774	1770	1855	1721	1770	1594	1774	1770	1580
Q Serve(g_s), s	22.5	78.0	14.4	15.0	44.6	44.6	8.4	24.5	25.6	1.1	11.0	15.4
Cycle Q Clear(g_c), s	22.5	78.0	14.4	15.0	44.6	44.6	8.4	24.5	25.6	1.1	11.0	15.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	244	2019	892	148	914	958	248	308	277	54	234	209
V/C Ratio(X)	0.92	0.88	0.28	1.03	0.66	0.66	0.66	0.81	0.84	0.20	0.50	0.68
Avail Cap(c_a), veh/h	279	2019	892	148	914	958	273	433	390	128	420	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.7	33.4	19.7	82.5	31.9	31.9	81.3	71.5	72.0	85.1	72.5	74.4
Incr Delay (d2), s/veh	4.8	0.6	0.1	75.4	2.9	2.8	5.1	7.8	11.2	1.8	1.6	3.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	38.2	6.3	10.4	22.6	23.6	4.2	12.7	12.2	0.6	5.5	7.0
LnGrp Delay(d), s/veh	81.5	33.9	19.8	158.3	34.8	34.7	86.4	79.4	83.2	86.9	74.1	78.3
LnGrp LOS	F	C	B	F	C	C	F	E	F	F	E	E
Approach Vol, veh/h	2248				1381			648			269	
Approach Delay, s/veh	37.1				48.4			82.5			76.8	
Approach LOS	D				D			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	110.7	18.7	29.9	30.5	100.9	11.2	37.4				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	72.2	* 14	42.7	* 28	69.2	* 13	44.0					
Max Q Clear Time (g_c+Q), s	80.0	10.4	17.4	24.5	46.6	3.1	27.6					
Green Ext Time (p_c), s	0.0	2.2	0.2	1.6	0.2	9.1	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay					49.4							
HCM 2010 LOS					D							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
18: Frazee Rd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	1646	134	141	1178	75	61	161	172	39	79	32
Future Volume (veh/h)	50	1646	134	141	1178	75	61	161	172	39	79	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1789	146	153	1280	82	66	175	187	42	86	35
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1966	989	148	2041	994	239	291	244	201	270	321
Arrive On Green	0.06	0.56	0.56	0.08	0.58	0.58	0.07	0.16	0.16	0.06	0.14	0.14
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1533
Grp Volume(v), veh/h	54	1789	146	153	1280	82	66	175	187	42	86	35
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1533
Q Serve(g_s), s	5.3	81.8	6.9	15.0	43.2	3.6	3.3	15.8	20.7	2.1	7.4	3.3
Cycle Q Clear(g_c), s	5.3	81.8	6.9	15.0	43.2	3.6	3.3	15.8	20.7	2.1	7.4	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1966	989	148	2041	994	239	291	244	201	270	321
V/C Ratio(X)	0.49	0.91	0.15	1.03	0.63	0.08	0.28	0.60	0.77	0.21	0.32	0.11
Avail Cap(c_a), veh/h	118	1966	989	148	2041	994	249	455	382	229	445	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.6	36.0	13.9	82.5	25.3	12.6	79.4	70.8	72.8	80.8	69.0	57.9
Incr Delay (d2), s/veh	0.8	2.2	0.1	83.6	1.5	0.2	0.6	2.0	5.0	0.5	0.7	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	82.6	40.4	3.0	10.8	21.4	1.6	1.6	8.3	9.3	1.0	3.9	1.4
LnGrp Delay(d), s/veh	82.5	38.2	14.0	166.4	26.7	12.8	80.1	72.8	77.8	81.3	69.7	58.0
LnGrp LOS	F	D	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	1989			1515			428			163		
Approach Delay, s/veh	37.6			40.1			76.1			70.2		
Approach LOS	D			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	108.0	18.2	33.1	16.9	111.8	16.2	35.1				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	82.6	* 13	43.0	* 12	85.6	* 12	44.0					
Max Q Clear Time (g_c+max), s	83.8	5.3	9.4	7.3	45.2	4.1	22.7					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	13.6	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				43.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
19: College Blvd & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	691	1335	71	282	923	641	61	999	322	520	940	406
Future Volume (veh/h)	691	1335	71	282	923	641	61	999	322	520	940	406
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	751	1451	77	307	1003	697	66	1086	350	565	1022	441
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	598	1497	568	273	1017	539	221	895	285	484	1474	921
Arrive On Green	0.17	0.29	0.29	0.08	0.20	0.20	0.06	0.34	0.34	0.14	0.42	0.42
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2633	837	3442	3539	1550
Grp Volume(v), veh/h	751	1451	77	307	1003	697	66	725	711	565	1022	441
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1700	1721	1770	1550
Q Serve(g_s), s	31.3	50.7	5.9	14.3	35.4	36.0	3.3	61.2	61.2	25.3	42.7	29.3
Cycle Q Clear(g_c), s	31.3	50.7	5.9	14.3	35.4	36.0	3.3	61.2	61.2	25.3	42.7	29.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	598	1497	568	273	1017	539	221	602	578	484	1474	921
V/C Ratio(X)	1.25	0.97	0.14	1.12	0.99	1.29	0.30	1.21	1.23	1.17	0.69	0.48
Avail Cap(c_a), veh/h	598	1497	568	273	1017	539	229	602	578	484	1474	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.3	62.7	38.9	82.8	71.8	59.3	80.4	59.4	59.4	77.3	43.1	21.1
Incr Delay (d2), s/veh	128.0	17.0	0.5	91.6	25.1	145.1	0.7	107.5	117.9	96.0	1.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	75.5	26.1	2.7	10.3	19.0	48.5	1.6	47.9	47.7	18.5	21.2	12.6
LnGrp Delay(d), s/veh	202.3	79.7	39.4	174.4	96.8	204.4	81.1	166.9	177.3	173.3	44.5	21.5
LnGrp LOS	F	E	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2279			2007			1502			2028		
Approach Delay, s/veh	118.7			146.1			168.1			75.4		
Approach LOS	F			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	61.0	17.3	81.7	37.0	44.0	31.0	68.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	82.6	* 12	74.5	* 31	36.0	* 25	61.2					
Max Q Clear Time (g_c+max), s	82.6	5.3	44.7	33.3	38.0	27.3	63.2					
Green Ext Time (p_c), s	0.0	0.2	0.1	11.2	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay				124.0								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
20: N. Santa Fe Ave & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	18	1732	439	406	1364	20	523	21	752	6	4	6
Future Volume (veh/h)	18	1732	439	406	1364	20	523	21	752	6	4	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	20	1883	477	441	1483	22	584	0	817	7	4	7
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1665	1096	407	1963	29	808	0	543	70	24	42
Arrive On Green	0.04	0.47	0.47	0.12	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3569	53	3548	0	1563	1774	600	1050
Grp Volume(v), veh/h	20	1883	477	441	1483	22	584	0	817	7	0	11
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1721	1770	1852	1774	0	1563	1774	0	1650
Q Serve(g_s), s	2.0	84.7	23.9	21.3	57.5	57.7	27.4	0.0	41.0	0.7	0.0	1.2
Cycle Q Clear(g_c), s	2.0	84.7	23.9	21.3	57.5	57.7	27.4	0.0	41.0	0.7	0.0	1.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	69	1665	1096	407	1963	29	808	0	543	70	0	65
V/C Ratio(X)	0.29	1.13	0.44	1.08	0.75	0.76	0.72	0.00	1.50	0.10	0.00	0.17
Avail Cap(c_a), veh/h	108	1665	1096	407	1963	29	808	0	543	196	0	182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	84.1	47.7	11.8	79.3	31.1	31.2	64.2	0.0	58.9	83.3	0.0	83.6
Incr Delay (d2), s/veh	2.3	67.1	1.3	68.7	5.4	5.2	3.2	0.0	236.2	0.6	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	56.9	18.4	14.0	29.4	30.8	13.8	0.0	62.6	0.3	0.0	0.6
LnGrp Delay(d), s/veh	86.5	114.8	13.1	148.0	36.6	36.4	67.4	0.0	295.1	84.0	0.0	84.8
LnGrp LOS	F	F	B	F	D	D	E		F	F		F
Approach Vol, veh/h	2380			1946			1401			18		
Approach Delay, s/veh	94.2			61.8			200.2			84.5		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	92.7			13.2	12.7	107.0		47.1				
Change Period (Y+Rc), s	8.0			6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	71.9			19.9	* 11	82.2		41.0				
Max Q Clear Time (g_c+Q), s	86.7			3.2	4.0	59.7		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	10.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				109.0								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
21: Melrose Dr & SR-76

North River Farms
10/20/2017

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	108	1680	389	44	1100	35	239	9	89	50	10	104
Future Volume (veh/h)	108	1680	389	44	1100	35	239	9	89	50	10	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	1826	423	48	1196	38	260	10	97	54	11	113
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	3192	1132	226	3159	1078	301	350	260	232	279	239
Arrive On Green	0.07	0.63	0.63	0.07	0.62	0.62	0.09	0.10	0.10	0.07	0.08	0.08
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	117	1826	423	48	1196	38	260	10	97	54	11	113
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	5.9	37.6	18.7	2.4	21.0	1.4	13.4	0.5	9.8	2.7	0.5	11.7
Cycle Q Clear(g_c), s	5.9	37.6	18.7	2.4	21.0	1.4	13.4	0.5	9.8	2.7	0.5	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	3192	1132	226	3159	1078	301	350	260	232	279	239
V/C Ratio(X)	0.47	0.57	0.37	0.21	0.38	0.04	0.86	0.03	0.37	0.23	0.04	0.47
Avail Cap(c_a), veh/h	250	3192	1132	249	3159	1078	369	1068	582	249	944	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.2	19.5	10.0	79.7	16.9	8.9	81.1	73.3	66.9	79.5	76.6	69.9
Incr Delay (d2), s/veh	1.4	0.8	0.9	0.5	0.3	0.1	16.1	0.0	0.9	0.5	0.1	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	17.8	8.4	1.1	9.8	0.6	7.1	0.2	4.4	1.3	0.3	5.2
LnGrp Delay(d), s/veh	81.6	20.2	10.9	80.1	17.2	9.0	97.2	73.3	67.8	80.0	76.7	71.4
LnGrp LOS	F	C	B	F	B	A	F	E	E	F	E	E
Approach Vol, veh/h	2366			1282			367			178		
Approach Delay, s/veh	21.6			19.3			88.8			74.3		
Approach LOS	C			B			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	120.5	21.4	20.6	18.7	119.3	17.8	24.2					
Change Period (Y+Rc), s	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4					
Max Green Setting (Gmax), s	74.4	* 19	48.0	* 13	74.3	* 13	54.3					
Max Q Clear Time (g_c+Q), s	39.6	15.4	13.7	7.9	23.0	4.7	11.8					
Green Ext Time (p_c), s	0.0	22.2	0.3	0.4	0.1	10.0	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				29.0								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	37	1657	219	584	886	6	144	26	288	16	31	63
Future Volume (veh/h)	37	1657	219	584	886	6	144	26	288	16	31	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	1801	238	635	963	7	177	0	313	17	34	68
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	2034	633	665	2770	20	384	0	478	50	100	129
Arrive On Green	0.06	0.40	0.40	0.19	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5208	38	3548	0	1583	611	1221	1583
Grp Volume(v), veh/h	40	1801	238	635	963	343	177	0	313	51	0	68
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1832	0	1583
Q Serve(g_s), s	2.6	39.5	12.7	21.9	12.7	12.7	5.6	0.0	13.0	3.2	0.0	4.9
Cycle Q Clear(g_c), s	2.6	39.5	12.7	21.9	12.7	12.7	5.6	0.0	13.0	3.2	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	109	2034	633	665	1803	987	384	0	478	150	0	129
V/C Ratio(X)	0.37	0.89	0.38	0.95	0.35	0.35	0.46	0.00	0.66	0.34	0.00	0.53
Avail Cap(c_a), veh/h	148	2034	633	665	1803	987	384	0	478	215	0	186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	33.5	25.4	47.9	16.1	16.1	50.2	0.0	36.5	52.0	0.0	52.9
Incr Delay (d2), s/veh	2.1	6.1	1.7	24.1	0.5	1.0	0.9	0.0	3.2	1.3	0.0	3.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	19.7	5.9	12.6	6.1	6.7	2.8	0.0	9.5	1.7	0.0	2.3
LnGrp Delay(d), s/veh	56.1	39.6	27.1	72.0	16.7	17.1	51.1	0.0	39.7	53.4	0.0	56.1
LnGrp LOS	E	D	C	E	B	B	D		D	D		E
Approach Vol, veh/h	2079			1605			490			119		
Approach Delay, s/veh	38.5			38.7			43.8			55.0		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.9	55.5		16.2	13.1	71.3		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	43.7			14.1	* 10	56.9		13.0				
Max Q Clear Time (g_c+Q), s	41.5			6.9	4.6	14.7		15.0				
Green Ext Time (p_c), s	0.0	2.0		0.3	0.0	7.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				39.6								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing PM
23: College Blvd & Frazee Rd

North River Farms
10/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	163	93	125	21	77	40	196	867	48	49	868	206
Future Volume (veh/h)	163	93	125	21	77	40	196	867	48	49	868	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	154	136	23	84	43	213	942	52	53	943	224
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	256	213	137	144	121	261	1563	676	86	1214	543
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.15	0.44	0.44	0.05	0.34	0.34
Sat Flow, veh/h	1774	1863	1552	1774	1863	1560	1774	3539	1530	1774	3539	1582
Grp Volume(v), veh/h	139	154	136	23	84	43	213	942	52	53	943	224
Grp Sat Flow(s), veh/h/ln	1774	1863	1552	1774	1863	1560	1774	1770	1530	1774	1770	1582
Q Serve(g_s), s	4.5	4.7	5.1	0.7	2.7	1.6	7.1	12.4	1.2	1.8	14.6	6.6
Cycle Q Clear(g_c), s	4.5	4.7	5.1	0.7	2.7	1.6	7.1	12.4	1.2	1.8	14.6	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	256	213	137	144	121	261	1563	676	86	1214	543
V/C Ratio(X)	0.57	0.60	0.64	0.17	0.58	0.36	0.81	0.60	0.08	0.61	0.78	0.41
Avail Cap(c_a), veh/h	524	550	458	524	550	460	334	1799	777	145	1422	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	24.7	24.9	26.3	27.2	26.7	25.2	13.0	9.8	28.5	17.9	15.3
Incr Delay (d2), s/veh	2.1	2.3	3.2	0.6	3.7	1.8	11.5	0.4	0.0	6.9	2.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	2.6	2.3	0.4	1.5	0.7	4.3	6.1	0.5	1.0	7.5	2.9
LnGrp Delay(d), s/veh	26.7	27.0	28.0	26.9	30.9	28.5	36.7	13.4	9.9	35.4	20.3	15.8
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	C	B
Approach Vol, veh/h	429			150			1207			1220		
Approach Delay, s/veh	27.2			29.6			17.3			20.2		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.4			12.9	13.5	25.4		9.2				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	31.0			18.0	11.5	24.5		18.0				
Max Q Clear Time (g_c+Q), s	14.4			7.1	9.1	16.6		4.7				
Green Ext Time (p_c), s	0.0	6.4		1.3	0.1	4.4		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Existing PM.syn

Synchro 9 Report

APPENDIX D

SANDAG SELECT ZONE ASSIGNMENT

SANDAG
Series 12
2008

TAZ 229
Select Zone Plot

Functional Classifications

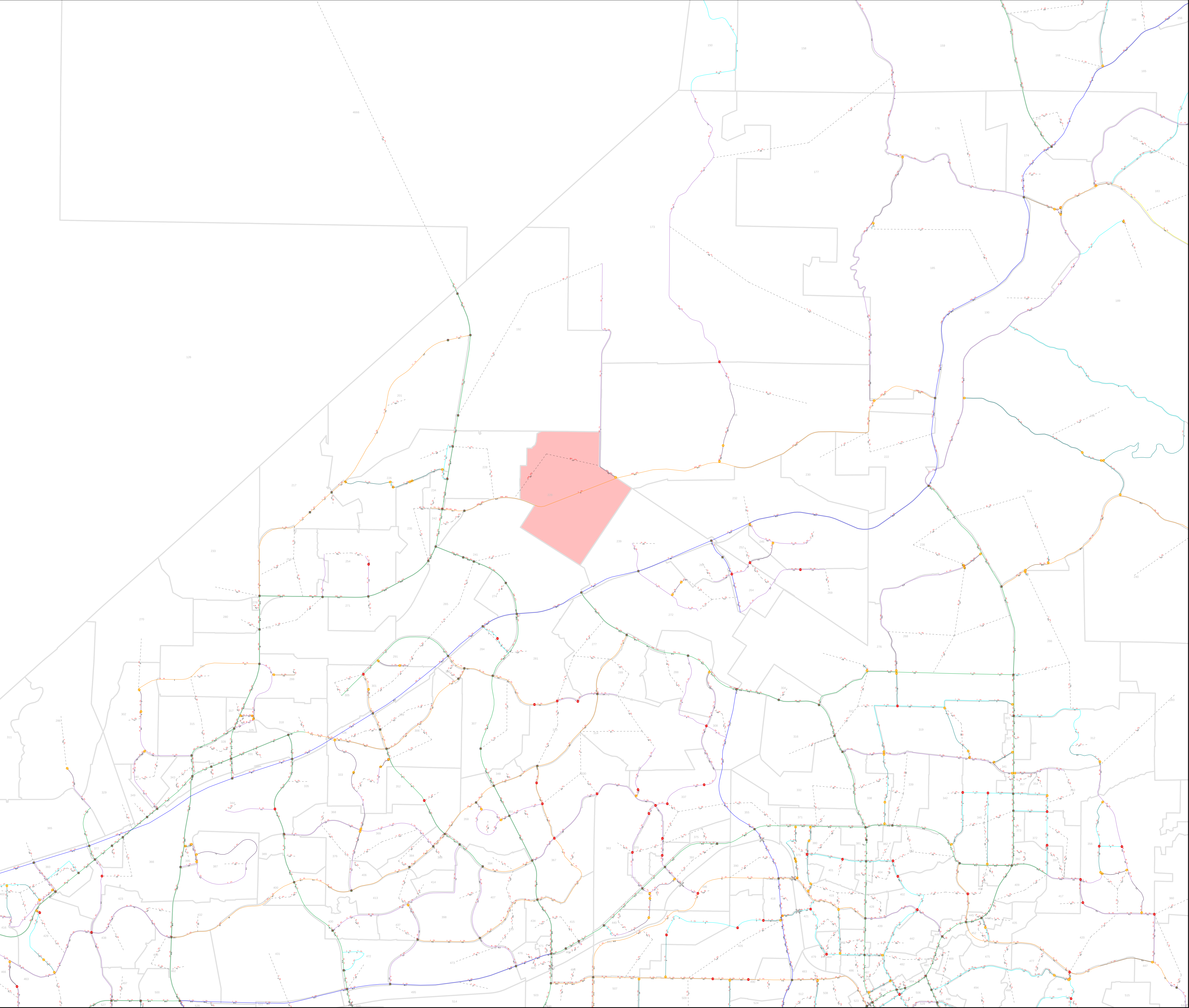
- Freeway
- Prime
- Major
- Collector
- Light Collector
- Rural Collector
- Local
- Freeway Ramp
- Local Ramp
- Zone Connector

Traffic Analysis Zones

- # Selz Volumes & Percentage
- # Unadjusted ADT(x1000)

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APPENDIX E

INTERSECTION ANALYSIS WORKSHEETS – EXISTING + PROJECT

Existing + Proj AM
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	435	22	78	139	83	51	48	956	50	13	280	30
Future Volume (veh/h)	435	22	78	139	83	51	48	956	50	13	280	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	473	24	85	151	90	55	52	1039	54	14	304	33
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	67	238	287	207	117	89	1914	594	31	1604	171
Arrive On Green	0.17	0.19	0.19	0.08	0.10	0.10	0.05	0.38	0.38	0.02	0.34	0.34
Sat Flow, veh/h	3442	361	1277	3442	2174	1235	1774	5085	1577	1774	4668	496
Grp Volume(v), veh/h	473	0	109	151	72	73	52	1039	54	14	219	118
Grp Sat Flow(s), veh/h/ln	1721	0	1637	1721	1770	1640	1774	1695	1577	1774	1695	1774
Q Serve(g_s), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.6	1.2	0.4	2.4	2.5
Cycle Q Clear(g_c), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.6	1.2	0.4	2.4	2.5
Prop In Lane	1.00		0.78	1.00		0.75	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	601	0	305	287	168	156	89	1914	594	31	1165	610
V/C Ratio(X)	0.79	0.00	0.36	0.53	0.43	0.47	0.58	0.54	0.09	0.45	0.19	0.19
Avail Cap(c_a), veh/h	681	0	664	444	595	551	166	1914	594	166	1165	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	19.0	23.5	22.9	22.9	24.9	13.1	10.8	26.0	12.3	12.3
Incr Delay (d2), s/veh	5.4	0.0	0.7	1.5	1.7	2.2	5.9	1.1	0.3	9.8	0.4	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.8	0.0	1.5	1.1	1.1	1.1	0.9	4.1	0.6	0.3	1.2	1.3
LnGrp Delay(d), s/veh	26.6	0.0	19.7	25.0	24.6	25.1	30.8	14.2	11.1	35.9	12.7	13.1
LnGrp LOS	C		B	C		C	C	B	B	D	B	B
Approach Vol, veh/h	582			296			1145			351		
Approach Delay, s/veh	25.3			24.9			14.8			13.7		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	24.7	9.0	14.5	7.2	22.9	13.9	9.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.4	6.9	21.7	5.0	18.4	10.6	18.0				
Max Q Clear Time (g_c+1), s	2.4	10.6	4.3	5.1	3.5	4.5	9.0	4.3				
Green Ext Time (p_c), s	0.0	4.3	0.1	0.5	0.0	1.7	0.3	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\3. Existing + Proj AM.syn

Synchro 10 Report

Existing + Proj AM
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	43	48	113	689	50	231	95	854	375	120	735	36
Future Volume (veh/h)	43	48	113	689	50	231	95	854	375	120	735	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	52	123	749	54	251	103	928	408	130	799	39
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	332	272	759	103	480	131	1607	496	162	1180	528
Arrive On Green	0.04	0.18	0.18	0.22	0.36	0.36	0.07	0.32	0.32	0.09	0.33	0.33
Sat Flow, veh/h	1774	1863	1526	3442	286	1329	1774	5085	1570	1774	3539	1583
Grp Volume(v), veh/h	47	52	123	749	0	305	103	928	408	130	799	39
Grp Sat Flow(s), veh/h/ln	1774	1863	1526	1721	0	1615	1774	1695	1570	1774	1770	1583
Q Serve(g_s), s	2.4	2.2	6.7	20.1	0.0	13.8	5.3	14.2	22.3	6.7	18.1	1.6
Cycle Q Clear(g_c), s	2.4	2.2	6.7	20.1	0.0	13.8	5.3	14.2	22.3	6.7	18.1	1.6
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	332	272	759	0	583	131	1607	496	162	1180	528
V/C Ratio(X)	0.70	0.16	0.45	0.99	0.00	0.52	0.79	0.58	0.82	0.80	0.68	0.07
Avail Cap(c_a), veh/h	166	722	591	759	0	831	200	1806	557	239	1333	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	32.3	34.1	36.1	0.0	23.4	42.3	26.6	29.4	41.4	26.7	21.2
Incr Delay (d2), s/veh	12.4	0.2	1.2	29.2	0.0	0.7	10.9	0.4	8.8	11.5	1.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	1.1	2.9	12.6	0.0	6.2	3.0	6.7	10.8	3.8	9.0	0.7
LnGrp Delay(d), s/veh	56.6	32.5	35.3	65.3	0.0	24.1	53.2	26.9	38.1	52.9	27.8	21.2
LnGrp LOS	E	C	D	E		C	D	C	D	D	C	C
Approach Vol, veh/h	222			1054			1439			968		
Approach Delay, s/veh	39.1			53.4			32.0			30.9		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	33.9	25.0	21.1	11.3	35.5	8.0	38.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	33.0	20.5	36.0	10.5	35.0	8.7	47.8				
Max Q Clear Time (g_c+1), s	2.4	10.6	4.3	5.1	3.5	4.5	9.0	4.3				
Green Ext Time (p_c), s	0.1	5.0	0.0	0.7	0.1	5.0	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay	38.3											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\3. Existing + Proj AM.syn

Synchro 10 Report

Existing + Proj AM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↱	↰	↱
Traffic Volume (veh/h)	4	535	2	8	882	2	40	0	8	3	0	26
Future Volume (veh/h)	4	535	2	8	882	2	40	0	8	3	0	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	582	0	9	959	2	43	0	9	3	0	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	1399	626	21	1456	3	127	0	111	6	0	53
Arrive On Green	0.01	0.40	0.00	0.01	0.40	0.40	0.07	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3623	8	1774	0	1559	155	0	1445
Grp Volume(v), veh/h	4	582	0	9	468	493	43	0	9	31	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1861	1774	0	1559	1600	0	0
Q Serve(g_s), s	0.1	4.4	0.0	0.2	8.0	8.0	0.9	0.0	0.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.1	4.4	0.0	0.2	8.0	8.0	0.9	0.0	0.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.10		0.90
Lane Grp Cap(c), veh/h	10	1399	626	21	711	748	127	0	111	59	0	0
V/C Ratio(X)	0.41	0.42	0.00	0.42	0.66	0.66	0.34	0.00	0.08	0.53	0.00	0.00
Avail Cap(c_a), veh/h	239	2001	895	239	1000	1052	860	0	755	775	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.4	8.1	0.0	18.2	9.0	9.0	16.4	0.0	16.1	17.6	0.0	0.0
Incr Delay (d2), s/veh	25.9	0.2	0.0	12.9	1.0	1.0	1.6	0.0	0.3	7.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	2.1	0.0	0.2	4.0	4.2	0.5	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	44.3	8.3	0.0	31.2	10.1	10.0	18.0	0.0	16.4	24.6	0.0	0.0
LnGrp LOS	D	A		C	B	B	B		B	C		
Approach Vol, veh/h	586				970			52			31	
Approach Delay, s/veh	8.6				10.3			17.7			24.6	
Approach LOS	A				B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.2			5.9	4.7	19.4		7.2				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I2), s	6.4			2.7	2.1	10.0		2.9				
Green Ext Time (p_c), s	0.0	3.4		0.1	0.0	4.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay					10.2							
HCM 2010 LOS					B							

Existing + Proj AM
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↰	↱	↱	↱	↰	↱						
Traffic Vol, veh/h	46	346	731	45	67	101						
Future Vol, veh/h	46	346	731	45	67	101						
Conflicting Peds, #/hr	5	0	0	5	0	2						
Sign Control	Free	Free	Free	Free	Stop	Stop						
RT Channelized	-	None	-	None	-	None						
Storage Length	25	-	-	-	0	-						
Veh in Median Storage, #	-	0	0	-	0	-						
Grade, %	-	0	0	-	0	-						
Peak Hour Factor	92	92	92	92	92	92						
Heavy Vehicles, %	2	2	2	2	2	2						
Mvmt Flow	50	376	795	49	73	110						
Major/Minor												
Major1	Major2	Minor2										
Conflicting Flow All	849	0	-	0	1301	827						
Stage 1	-	-	-	-	825	-						
Stage 2	-	-	-	-	476	-						
Critical Hdwy	4.12	-	-	-	6.42	6.22						
Critical Hdwy Stg 1	-	-	-	-	5.42	-						
Critical Hdwy Stg 2	-	-	-	-	5.42	-						
Follow-up Hdwy	2.218	-	-	-	3.518	3.318						
Pot Cap-1 Maneuver	789	-	-	-	178	371						
Stage 1	-	-	-	-	430	-						
Stage 2	-	-	-	-	625	-						
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	785	-	-	-	165	369						
Mov Cap-2 Maneuver	-	-	-	-	287	-						
Stage 1	-	-	-	-	400	-						
Stage 2	-	-	-	-	622	-						
Approach												
EB	WB	SB										
HCM Control Delay, s	1.2	0	28.5									
HCM LOS			D									
Minor Lane/Major Mvmt												
EBL	EBT	WBT	WBR	SBLn1								
Capacity (veh/h)	785	-	-	-	331							
HCM Lane V/C Ratio	0.064	-	-	-	0.552							
HCM Control Delay (s)	9.9	-	-	-	28.5							
HCM Lane LOS	A	-	-	-	D							
HCM 95th %tile Q(veh)	0.2	-	-	-	3.2							

Existing + Proj AM
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	410	769	1	1	7
Future Vol, veh/h	3	410	769	1	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	446	836	1	1	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	837	0	0	1288	836
Stage 1	-	-	-	836	-
Stage 2	-	-	-	452	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	797	-	-	181	367
Stage 1	-	-	-	425	-
Stage 2	-	-	-	641	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	797	-	-	180	367
Mov Cap-2 Maneuver	-	-	-	180	-
Stage 1	-	-	-	423	-
Stage 2	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.4
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	797	-	-	-	325
HCM Lane V/C Ratio	0.004	-	-	-	0.027
HCM Control Delay (s)	9.5	-	-	-	16.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Existing + Proj AM
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	344	386	9	24	111
Future Vol, veh/h	35	344	386	9	24	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	374	420	10	26	121

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	430	0	0	875	425
Stage 1	-	-	-	425	-
Stage 2	-	-	-	450	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1129	-	-	320	629
Stage 1	-	-	-	659	-
Stage 2	-	-	-	642	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1129	-	-	307	629
Mov Cap-2 Maneuver	-	-	-	307	-
Stage 1	-	-	-	631	-
Stage 2	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.4
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1129	-	-	-	530
HCM Lane V/C Ratio	0.034	-	-	-	0.277
HCM Control Delay (s)	8.3	0	-	-	14.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Existing + Proj AM
8: SR-76 & N. River Rd

North River Farms
06/27/2018

	EBL	EBR	NBL	NBT	SBT	SBR		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	↰	↱	↰	↱	↱	↱		
Traffic Volume (veh/h)	151	146	222	845	1713	229		
Future Volume (veh/h)	151	146	222	845	1713	229		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	164	159	241	918	1862	249		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	231	206	183	2544	1954	874		
Arrive On Green	0.13	0.13	0.10	0.72	0.55	0.55		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	164	159	241	918	1862	249		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	8.0	8.7	9.3	8.9	44.7	7.5		
Cycle Q Clear(g_c), s	8.0	8.7	9.3	8.9	44.7	7.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	231	206	183	2544	1954	874		
V/C Ratio(X)	0.71	0.77	1.31	0.36	0.95	0.28		
Avail Cap(c_a), veh/h	650	581	183	2544	1954	874		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.5	37.9	40.3	4.8	19.0	10.7		
Incr Delay (d2), s/veh	4.0	6.0	174.8	0.4	11.9	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.2	7.7	13.4	4.3	25.0	3.4		
LnGrp Delay(d),s/veh	41.5	43.9	215.2	5.2	31.0	11.5		
LnGrp LOS	D	D	F	A	C	B		
Approach Vol, veh/h	323			1159	2111			
Approach Delay, s/veh	42.7			48.9	28.7			
Approach LOS	D			D	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		72.2		17.8	15.0	57.2		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		43.4		33.0	* 9.3	28.4		
Max Q Clear Time (g_c+1), s		10.9		10.7	11.3	46.7		
Green Ext Time (p_c), s		7.8		1.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			36.4					
HCM 2010 LOS			D					
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱		
Traffic Volume (veh/h)	38	69	184	1082	29	31	72	420	507	15	786	8		
Future Volume (veh/h)	38	69	184	1082	29	31	72	420	507	15	786	8		
Number	7	4	14	3	8	18	5	2	12	1	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	41	75	200	1176	32	34	78	457	551	16	854	9		
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	266	531	232	1273	297	316	99	1064	1818	32	942	10		
Arrive On Green	0.15	0.15	0.15	0.36	0.36	0.36	0.06	0.30	0.30	0.02	0.26	0.26		
Sat Flow, veh/h	1774	3539	1547	3548	828	880	1774	3539	2723	1774	3588	38		
Grp Volume(v), veh/h	41	75	200	1176	0	66	78	457	551	16	421	442		
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	0	1708	1774	1770	1361	1774	1770	1856		
Q Serve(g_s), s	2.1	1.9	13.2	33.1	0.0	2.7	4.5	10.8	9.0	0.9	24.0	24.0		
Cycle Q Clear(g_c), s	2.1	1.9	13.2	33.1	0.0	2.7	4.5	10.8	9.0	0.9	24.0	24.0		
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.02		
Lane Grp Cap(c), veh/h	266	531	232	1273	0	612	99	1064	1818	32	464	487		
V/C Ratio(X)	0.15	0.14	0.86	0.92	0.00	0.11	0.78	0.43	0.30	0.51	0.91	0.91		
Avail Cap(c_a), veh/h	306	611	267	1344	0	647	100	1064	1818	85	485	509		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	38.5	38.5	43.2	32.1	0.0	22.3	48.6	29.3	7.6	50.7	37.2	37.2		
Incr Delay (d2), s/veh	0.3	0.1	21.6	10.6	0.0	0.1	32.1	0.3	0.1	12.0	20.2	19.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.9	7.0	18.0	0.0	1.3	3.1	5.3	7.0	0.6	14.3	14.9		
LnGrp Delay(d),s/veh	38.8	38.6	64.8	42.6	0.0	22.4	80.7	29.5	7.7	62.8	57.4	56.7		
LnGrp LOS	D	D	E	D		C	F	C	A	E	E	E		
Approach Vol, veh/h		316		1242			1086				879			
Approach Delay, s/veh		55.2		41.6			22.1				57.1			
Approach LOS		E		D			C				E			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs		1	2		4	5	6		8					
Phs Duration (G+Y+Rc), s		35.9		20.2	10.3	31.9		41.9						
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5						
Max Green Setting (Gmax), s		29.5		18.0	5.9	28.6		39.5						
Max Q Clear Time (g_c+1), s		12.8		15.2	6.5	26.0		35.1						
Green Ext Time (p_c), s		0.0	5.1	0.4	0.0	1.3		2.2						
Intersection Summary														
HCM 2010 Ctrl Delay				40.7										
HCM 2010 LOS				D										
Notes														

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	45	449	3	10	789	56	5	3	21	84	0	98
Future Volume (veh/h)	45	449	3	10	789	56	5	3	21	84	0	98
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	49	488	3	11	858	61	5	3	23	91	0	107
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	1353	8	25	1139	81	113	43	542	139	0	554
Arrive On Green	0.05	0.38	0.38	0.01	0.34	0.34	0.35	0.35	0.35	0.00	0.35	
Sat Flow, veh/h	1774	3606	22	1774	3344	238	0	123	1551	0	0	1583
Grp Volume(v), veh/h	49	239	252	11	454	465	8	0	23	91	0	107
Grp Sat Flow(s), veh/h/ln	1770	1858	1774	1770	1812	124	0	1551	0	0	0	1583
Q Serve(g_s), s	1.4	5.1	5.1	0.3	11.8	11.8	0.0	0.0	0.5	0.0	0.0	2.4
Cycle Q Clear(g_c), s	1.4	5.1	5.1	0.3	11.8	11.8	18.1	0.0	0.5	18.1	0.0	2.4
Prop In Lane	1.00		0.01	1.00		0.13	0.62		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	664	697	25	603	617	156	0	542	139	0	554
V/C Ratio(X)	0.57	0.36	0.36	0.44	0.75	0.75	0.05	0.00	0.04	0.65	0.00	0.19
Avail Cap(c_a), veh/h	202	797	836	175	769	788	156	0	542	139	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	11.7	11.7	25.3	15.1	15.1	13.8	0.0	11.1	25.9	0.0	11.7
Incr Delay (d2), s/veh	5.7	0.3	0.3	11.6	3.2	3.1	0.1	0.0	0.0	10.5	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	2.5	2.6	0.2	6.2	6.3	0.1	0.0	0.2	1.7	0.0	1.1
LnGrp Delay(d), s/veh	29.8	12.0	12.0	36.9	18.3	18.2	13.9	0.0	11.1	36.4	0.0	11.9
LnGrp LOS	C	B	B	D	B	B	B		B	D		B
Approach Vol, veh/h	540			930			31			198		
Approach Delay, s/veh	13.6			18.5			11.8			23.1		
Approach LOS	B			B			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.9			22.6	7.0	22.1		22.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.3			18.1	5.9	22.5		18.1				
Max Q Clear Time (g_c+I), s	7.1			20.1	3.4	13.8		20.1				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	3.8		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	17	29	3	325	22	963	16	221	475	1113	367	27
Future Volume (veh/h)	17	29	3	325	22	963	16	221	475	1113	367	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	32	3	353	24	1047	17	240	516	1210	399	29
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	96	9	385	26	1459	32	953	784	1019	1938	867
Arrive On Green	0.06	0.06	0.06	0.23	0.23	0.23	0.02	0.27	0.27	0.30	0.55	0.55
Sat Flow, veh/h	1774	1672	157	1666	113	2738	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	18	0	35	377	0	1047	17	240	516	1210	399	29
Grp Sat Flow(s), veh/h/ln	1774	0	1829	1779	0	1369	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	6.6	30.6	36.5	7.1	1.0
Cycle Q Clear(g_c), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	6.6	30.6	36.5	7.1	1.0
Prop In Lane	1.00		0.09	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	101	0	105	412	0	1459	32	953	784	1019	1938	867
V/C Ratio(X)	0.18	0.00	0.33	0.92	0.00	0.72	0.54	0.25	0.66	1.19	0.21	0.03
Avail Cap(c_a), veh/h	475	0	490	412	0	1459	82	976	795	1019	1938	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	55.8	46.2	0.0	22.3	60.0	35.3	23.0	43.4	14.2	12.8
Incr Delay (d2), s/veh	0.8	0.0	1.9	25.0	0.0	1.7	13.3	0.1	2.0	94.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.6	0.0	1.2	15.4	0.0	13.9	0.7	3.2	17.9	30.6	3.4	0.5
LnGrp Delay(d), s/veh	56.2	0.0	57.7	71.2	0.0	24.0	73.3	35.4	25.0	137.6	14.3	12.9
LnGrp LOS	E		E	E		C	E	D	C	F	B	B
Approach Vol, veh/h	53			1424			773			1638		
Approach Delay, s/veh	57.2			36.5			29.3			105.3		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.0			37.7	11.6	6.7	72.0	33.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	33.5			33.0	5.7	64.8		28.5				
Max Q Clear Time (g_c+I), s	32.6			4.3	3.2	9.1		30.5				
Green Ext Time (p_c), s	0.0	0.6		0.2	0.0	3.1		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	64.3
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	376	22	46	54	50	1	36	682	22	13	1072	1020
Future Volume (veh/h)	376	22	46	54	50	1	36	682	22	13	1072	1020
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	409	24	0	59	54	1	39	741	24	14	1165	1109
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	583	316	268	81	75	136	72	1401	45	31	1335	1523
Arrive On Green	0.17	0.17	0.00	0.09	0.09	0.09	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	3442	1863	1583	948	868	1583	1774	3499	113	1774	3539	2787
Grp Volume(v), veh/h	409	24	0	113	0	1	39	375	390	14	1165	1109
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1815	0	1583	1774	1770	1843	1774	1770	1393
Q Serve(g_s), s	6.2	0.6	0.0	3.3	0.0	0.0	1.2	8.9	8.9	0.4	16.8	16.5
Cycle Q Clear(g_c), s	6.2	0.6	0.0	3.3	0.0	0.0	1.2	8.9	8.9	0.4	16.8	16.5
Prop In Lane	1.00		1.00	0.52		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	583	316	268	156	0	136	72	709	738	31	1335	1523
V/C Ratio(X)	0.70	0.08	0.00	0.72	0.00	0.01	0.54	0.53	0.53	0.45	0.87	0.73
Avail Cap(c_a), veh/h	1124	608	517	593	0	517	161	709	738	161	1349	1534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	19.3	0.0	24.6	0.0	23.0	25.9	12.6	12.6	26.8	15.9	9.4
Incr Delay (d2), s/veh	1.5	0.1	0.0	6.2	0.0	0.0	6.1	0.7	0.7	9.9	6.5	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.3	0.0	1.9	0.0	0.0	0.7	4.4	4.6	0.3	9.3	8.7
LnGrp Delay(d), s/veh	23.1	19.4	0.0	30.8	0.0	23.1	32.0	13.3	13.3	36.7	22.5	11.2
LnGrp LOS	C	B		C		C	C	B	B	D	C	B
Approach Vol, veh/h	433			114			804			2288		
Approach Delay, s/veh	22.9			30.7			14.2			17.1		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	26.6		13.8	6.7	25.3		9.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	10.9			8.2	3.2	18.8		5.3				
Green Ext Time (p_c), s	0.0	3.4		1.2	0.0	1.9		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				17.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	164	106	105	155	267	59	121	257	101	107	896	388
Future Volume (veh/h)	164	106	105	155	267	59	121	257	101	107	896	388
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	115	0	168	290	64	132	279	110	116	974	422
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	573	257	268	462	100	168	1333	596	150	1297	693
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.16	0.09	0.38	0.38	0.08	0.37	0.37
Sat Flow, veh/h	3442	3539	1583	3442	2881	625	1774	3539	1583	1774	3539	1548
Grp Volume(v), veh/h	178	115	0	168	176	178	132	279	110	116	974	422
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1737	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	3.0	1.7	0.0	2.9	5.6	5.8	4.4	3.2	2.8	3.9	14.5	12.5
Cycle Q Clear(g_c), s	3.0	1.7	0.0	2.9	5.6	5.8	4.4	3.2	2.8	3.9	14.5	12.5
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	573	257	268	284	279	168	1333	596	150	1297	693
V/C Ratio(X)	0.65	0.20	0.00	0.63	0.62	0.64	0.78	0.21	0.18	0.77	0.75	0.61
Avail Cap(c_a), veh/h	314	1057	473	314	529	519	221	1351	604	309	1527	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	21.9	0.0	26.9	23.6	23.7	26.7	12.7	12.6	27.0	16.7	12.7
Incr Delay (d2), s/veh	3.8	0.2	0.0	3.0	2.2	2.4	12.7	0.1	0.1	8.1	1.8	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.8	0.0	1.5	2.9	3.0	2.7	1.6	1.2	2.2	7.4	5.5
LnGrp Delay(d), s/veh	30.7	22.0	0.0	29.9	25.8	26.1	39.4	12.8	12.7	35.1	18.5	13.8
LnGrp LOS	C	C		C	C	C	D	B	B	D	B	B
Approach Vol, veh/h	293			522			521			1512		
Approach Delay, s/veh	27.3			27.2			19.5			18.4		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	27.2	9.2	14.3	10.2	26.6	9.3	14.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	23.0			18.0	7.5	26.0	5.5	18.0				
Max Q Clear Time (g_c+I), s	5.2	4.9		3.7	6.4	16.5	5.0	7.8				
Green Ext Time (p_c), s	0.1	2.0	0.0	0.5	0.0	5.6	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				21.2								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	36	242	57	48	423	278	118	359	6	445	807	44
Future Volume (veh/h)	36	242	57	48	423	278	118	359	6	445	807	44
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	39	263	62	52	460	302	128	390	7	484	877	48
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	909	406	79	538	351	164	554	10	534	1245	68
Arrive On Green	0.04	0.26	0.26	0.04	0.26	0.26	0.09	0.16	0.16	0.30	0.36	0.36
Sat Flow, veh/h	3442	3539	1581	1774	2040	1332	1774	3555	64	1774	3413	187
Grp Volume(v), veh/h	39	263	62	52	399	363	128	194	203	484	455	470
Grp Sat Flow(s), veh/h/ln	1721	1770	1581	1774	1770	1602	1774	1770	1850	1774	1770	1830
Q Serve(g_s), s	0.8	4.4	2.3	2.1	15.9	16.1	5.3	7.7	7.8	19.5	16.4	16.4
Cycle Q Clear(g_c), s	0.8	4.4	2.3	2.1	15.9	16.1	5.3	7.7	7.8	19.5	16.4	16.4
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.03	1.00		0.10
Lane Grp Cap(c), veh/h	128	909	406	79	467	423	164	276	288	534	646	668
V/C Ratio(X)	0.30	0.29	0.15	0.66	0.85	0.86	0.78	0.70	0.70	0.91	0.70	0.70
Avail Cap(c_a), veh/h	231	1008	450	126	511	463	307	428	447	655	775	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	22.2	21.4	35.0	26.0	26.1	33.1	29.8	29.8	25.0	20.2	20.2
Incr Delay (d2), s/veh	1.3	0.2	0.2	9.2	12.4	14.1	7.9	3.3	3.1	14.3	2.3	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	2.2	1.0	1.3	9.4	8.7	2.9	4.0	4.2	11.7	8.4	8.6
LnGrp Delay(d), s/veh	36.2	22.4	21.6	44.2	38.4	40.2	41.0	33.0	32.9	39.3	22.5	22.4
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h	364			814			525			1409		
Approach Delay, s/veh	23.7			39.6			34.9			28.3		
Approach LOS	C			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.6	11.4	31.7	7.3	24.1	26.9	16.1					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	21.2	12.9	32.6	5.0	21.5	27.5	18.0					
Max Q Clear Time (g_c+1), s	6.4	7.3	18.4	2.8	18.1	21.5	9.8					
Green Ext Time (p_c), s	0.0	1.6	0.1	5.2	0.0	1.6	0.9	1.4				

Intersection Summary

HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗			↖↗	↖↗		↖↗		↖↗	↖↗	↖↗
Traffic Volume (veh/h)	283	836	0	0	1677	205	0	0	0	272	0	569
Future Volume (veh/h)	283	836	0	0	1677	205	0	0	0	272	0	569
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	308	909	0	0	1823	223	0	0	0	296	0	618
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0			0
Grp Volume(v), veh/h	308	909	0	0	1823	223	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0			0
Q Serve(g_s), s	13.3	2.8	0.0	0.0	72.1	17.2	0.0	0.0	0.0	0.0		0.0
Cycle Q Clear(g_c), s	13.3	2.8	0.0	0.0	72.1	17.2	0.0	0.0	0.0	0.0		0.0
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00			0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0			0
V/C Ratio(X)	1.08	0.27	0.00	0.00	0.62	0.17	0.00	0.00	0.00			0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0			0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.28	0.28	0.00	0.00	0.00			0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	35.9	16.0	0.0	0.0	0.0			0.0
Incr Delay (d2), s/veh	75.1	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.0			0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
%ile BackOfQ(50%), veh/ln	0.3	1.4	0.0	0.0	35.4	7.6	0.0	0.0	0.0			0.0
LnGrp Delay(d), s/veh	148.4	0.5	0.0	0.0	36.2	16.1	0.0	0.0	0.0			0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1217				2046			0				
Approach Delay, s/veh	37.9				34.0			0.0				
Approach LOS	D				C							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				5.7	8.0		6.1				
Max Green Setting (Gmax), s	73.9				13	54.9		44.0				
Max Q Clear Time (g_c+1), s	4.8				15.3	74.1		0.0				
Green Ext Time (p_c), s	6.8				0.0	0.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\3. Existing + Proj AM.syn

Synchro 10 Report

Existing + Proj AM
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	26	812	297	303	1498	132	243	256	302	37	285	55
Future Volume (veh/h)	26	812	297	303	1498	132	243	256	302	37	285	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	28	883	323	329	1628	143	264	278	328	40	310	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1455	651	236	1658	742	280	414	371	214	638	122
Arrive On Green	0.15	0.82	0.82	0.13	0.47	0.47	0.08	0.23	0.23	0.06	0.22	0.22
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2965	567
Grp Volume(v), veh/h	28	883	323	329	1628	143	264	278	328	40	183	187
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1763
Q Serve(g_s), s	2.2	14.2	9.8	21.3	72.4	8.4	12.2	22.8	32.0	1.8	14.5	14.9
Cycle Q Clear(g_c), s	2.2	14.2	9.8	21.3	72.4	8.4	12.2	22.8	32.0	1.8	14.5	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	134	1455	651	236	1658	742	280	414	371	214	381	379
V/C Ratio(X)	0.21	0.61	0.50	1.39	0.98	0.19	0.94	0.67	0.88	0.19	0.48	0.49
Avail Cap(c_a), veh/h	188	1455	651	236	1658	742	280	542	485	258	531	529
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	9.7	9.3	69.3	41.9	24.8	73.1	55.7	59.2	71.2	55.0	55.1
Incr Delay (d2), s/veh	0.6	1.5	2.1	179.3	3.7	0.1	38.9	2.1	14.4	0.4	0.9	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	6.9	4.6	22.2	36.1	3.7	7.3	11.4	15.5	0.9	7.2	7.4
LnGrp Delay(d), s/veh	64.3	11.2	11.4	248.6	45.5	24.9	112.1	57.7	73.5	71.6	55.9	56.1
LnGrp LOS	E	B	B	F	D	C	F	E	E	E	E	E
Approach Vol, veh/h	1234			2100			870			410		
Approach Delay, s/veh	12.4			75.9			80.2			57.5		
Approach LOS	B			E			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	73.8	18.7	40.5	17.8	83.0	15.7	43.6				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	25.0	52.2	* 13	48.0	* 17	56.5	* 12	49.0				
Max Q Clear Time (g_c+Qg), s	23.3	16.2	14.2	16.9	4.2	74.4	3.8	34.0				
Green Ext Time (p_c), s	0.0	7.8	0.0	2.3	0.0	0.0	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay				58.1								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	154	808	189	185	1473	14	165	173	138	33	294	295
Future Volume (veh/h)	154	808	189	185	1473	14	165	173	138	33	294	295
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	878	205	201	1601	15	179	188	150	36	320	321
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1432	632	222	1582	15	280	468	349	115	406	358
Arrive On Green	0.09	0.40	0.40	0.13	0.44	0.44	0.08	0.25	0.25	0.06	0.23	0.23
Sat Flow, veh/h	1774	3539	1562	1774	3593	34	3442	1904	1419	1774	1770	1560
Grp Volume(v), veh/h	167	878	205	201	788	828	179	174	164	36	320	321
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1553	1774	1770	1560
Q Serve(g_s), s	14.3	31.4	14.4	17.9	70.5	70.5	8.1	13.1	14.3	3.1	27.2	31.9
Cycle Q Clear(g_c), s	14.3	31.4	14.4	17.9	70.5	70.5	8.1	13.1	14.3	3.1	27.2	31.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	159	1432	632	222	779	818	280	435	382	115	406	358
V/C Ratio(X)	1.05	0.61	0.32	0.90	1.01	1.01	0.64	0.40	0.43	0.31	0.79	0.90
Avail Cap(c_a), veh/h	159	1432	632	253	779	818	301	487	427	144	476	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.60	0.46	0.46	0.46	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.8	37.7	32.6	69.0	44.8	44.8	71.2	50.4	50.9	71.4	58.0	59.8
Incr Delay (d2), s/veh	69.9	1.2	0.8	17.3	24.7	24.5	4.1	0.6	0.8	1.5	7.4	19.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.1	15.6	6.4	9.8	39.8	41.7	4.0	6.5	6.2	1.6	14.2	15.7
LnGrp Delay(d), s/veh	142.8	38.9	33.5	86.3	69.4	69.3	75.3	51.0	51.6	72.9	65.4	79.2
LnGrp LOS	F	D	C	F	F	F	E	D	D	E	E	E
Approach Vol, veh/h	1250			1817			517			677		
Approach Delay, s/veh	51.9			71.2			59.6			72.4		
Approach LOS	D			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.7	72.7	18.7	42.8	20.0	78.5	16.1	45.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	23.0	54.7	* 14	43.0	* 14	63.2	* 13	44.0				
Max Q Clear Time (g_c+Qg), s	19.9	33.4	10.1	33.9	16.3	72.5	5.1	16.3				
Green Ext Time (p_c), s	0.2	6.3	0.2	2.8	0.0	0.0	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				64.3								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	46	879	54	68	1536	70	65	89	122	85	142	71
Future Volume (veh/h)	46	879	54	68	1536	70	65	89	122	85	142	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	50	955	59	74	1670	76	71	97	133	92	154	77
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	2032	1031	128	2051	1034	268	214	182	254	206	280
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.11	0.11	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	50	955	59	74	1670	76	71	97	133	92	154	77
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.3	25.2	2.2	6.5	60.1	2.8	3.1	7.8	13.0	4.1	12.8	6.8
Cycle Q Clear(g_c), s	4.3	25.2	2.2	6.5	60.1	2.8	3.1	7.8	13.0	4.1	12.8	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	2032	1031	128	2051	1034	268	214	182	254	206	280
V/C Ratio(X)	0.42	0.47	0.06	0.58	0.81	0.07	0.27	0.45	0.73	0.36	0.75	0.28
Avail Cap(c_a), veh/h	133	2032	1031	146	2051	1034	280	512	435	258	501	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	19.9	10.1	71.9	26.8	10.1	69.5	66.1	68.4	70.5	69.0	56.9
Incr Delay (d2), s/veh	1.9	0.6	0.1	4.2	3.7	0.1	0.5	1.5	5.6	0.9	5.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	12.5	1.0	3.3	30.3	1.3	1.5	4.1	6.0	2.0	6.9	3.0
LnGrp Delay(d), s/veh	73.5	20.5	10.1	76.1	30.5	10.2	70.0	67.6	74.0	71.4	74.3	57.4
LnGrp LOS	E	C	B	E	C	B	E	E	E	E	E	E
Approach Vol, veh/h	1064			1820			301			323		
Approach Delay, s/veh	22.4			31.5			71.0			69.4		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	99.9	18.1	24.7	16.4	100.7	17.5	25.4					
Change Period (Y+Rc), s	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0					
Max Green Setting (Gmax), s	64.4	* 13	43.0	* 12	65.6	* 12	44.0					
Max Q Clear Time (g_c+I), s	27.2	5.1	14.8	6.3	62.1	6.1	15.0					
Green Ext Time (p_c), s	0.1	7.2	0.1	1.1	0.0	3.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				35.6								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\3. Existing + Proj AM.syn

Synchro 10 Report

Existing + Proj AM
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	458	652	35	509	1271	546	55	511	188	644	825	363
Future Volume (veh/h)	458	652	35	509	1271	546	55	511	188	644	825	363
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	498	709	38	553	1382	593	60	555	204	700	897	395
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	469	1230	488	599	1422	727	240	609	223	617	1241	769
Arrive On Green	0.14	0.24	0.24	0.17	0.28	0.28	0.07	0.24	0.24	0.18	0.35	0.35
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2527	926	3442	3539	1579
Grp Volume(v), veh/h	498	709	38	553	1382	593	60	388	371	700	897	395
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1683	1721	1770	1579
Q Serve(g_s), s	21.8	19.7	2.7	25.3	43.0	44.7	2.6	34.1	34.3	28.7	35.3	27.4
Cycle Q Clear(g_c), s	21.8	19.7	2.7	25.3	43.0	44.7	2.6	34.1	34.3	28.7	35.3	27.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	469	1230	488	599	1422	727	240	427	406	617	1241	769
V/C Ratio(X)	1.06	0.58	0.08	0.92	0.97	0.82	0.25	0.91	0.91	1.13	0.72	0.51
Avail Cap(c_a), veh/h	469	1230	488	639	1422	727	258	453	431	617	1276	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	53.4	38.9	65.0	57.0	37.4	70.5	59.0	59.1	65.7	45.2	28.1
Incr Delay (d2), s/veh	59.0	2.0	0.3	18.6	18.1	9.8	0.5	21.6	23.1	79.1	2.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	9.4	1.2	13.6	22.5	24.6	1.3	19.3	18.6	20.4	17.5	12.1
LnGrp Delay(d), s/veh	128.1	55.4	39.2	83.6	75.1	47.3	71.0	80.6	82.2	144.7	47.2	28.6
LnGrp LOS	F	E	D	F	E	D	E	F	F	F	D	C
Approach Vol, veh/h	1245			2528			819			1992		
Approach Delay, s/veh	84.0			70.4			80.6			77.8		
Approach LOS	F			E			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.5	46.7	16.9	62.9	27.5	52.7	34.4	45.4				
Change Period (Y+Rc), s	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8					
Max Green Setting (Gmax), s	34.4	* 12	57.7	* 22	42.3	* 29	41.0					
Max Q Clear Time (g_c+I), s	21.7	4.6	37.3	23.8	46.7	30.7	36.3					
Green Ext Time (p_c), s	0.5	3.6	0.1	8.1	0.0	0.0	0.0	2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				76.5								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	9	873	603	737	1777	23	526	7	620	4	29	23
Future Volume (veh/h)	9	873	603	737	1777	23	526	7	620	4	29	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	949	655	801	1932	25	578	0	674	4	32	25
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	1230	955	566	1743	23	909	0	665	124	68	53
Arrive On Green	0.02	0.35	0.35	0.16	0.49	0.49	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1581	3442	3578	46	3548	0	1580	1774	971	758
Grp Volume(v), veh/h	10	949	655	801	953	1004	578	0	674	4	0	57
Grp Sat Flow(s), veh/h/ln	1774	1770	1581	1721	1770	1855	1774	0	1580	1774	0	1729
Q Serve(g_s), s	0.9	38.3	44.9	26.3	78.0	78.0	23.2	0.0	41.0	0.3	0.0	5.1
Cycle Q Clear(g_c), s	0.9	38.3	44.9	26.3	78.0	78.0	23.2	0.0	41.0	0.3	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	44	1230	955	566	862	904	909	0	665	124	0	121
V/C Ratio(X)	0.23	0.77	0.69	1.42	1.11	1.11	0.64	0.00	1.01	0.03	0.00	0.47
Avail Cap(c_a), veh/h	122	1230	955	566	862	904	909	0	665	221	0	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.5	46.5	21.5	66.8	41.0	41.0	52.9	0.0	46.4	69.3	0.0	71.5
Incr Delay (d2), s/veh	2.6	4.7	4.0	197.4	63.9	65.1	1.5	0.0	38.3	0.1	0.0	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	19.5	30.0	28.0	53.4	56.3	11.5	0.0	36.4	0.2	0.0	2.5
LnGrp Delay(d), s/veh	79.1	51.3	25.5	264.3	104.9	106.1	54.3	0.0	84.7	69.5	0.0	74.4
LnGrp LOS	E	D	C	F	F	F	D		F	E		E
Approach Vol, veh/h	1614				2758			1252			61	
Approach Delay, s/veh	41.0				151.6			70.7			74.1	
Approach LOS	D				F			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	63.6		17.3	9.6	86.0		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	46.9			19.9	* 11	62.2		41.0				
Max Q Clear Time (g_c+Q), s	46.9			7.1	2.9	80.0		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				101.6								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
21: Melrose Dr & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	477	676	241	73	1602	223	258	87	108	102	48	310
Future Volume (veh/h)	477	676	241	73	1602	223	258	87	108	102	48	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	518	735	262	79	1741	242	280	95	117	111	52	337
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
Arrive On Green	0.14	0.45	0.45	0.08	0.39	0.39	0.09	0.23	0.23	0.08	0.22	0.22
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1571	3442	3539	1566
Grp Volume(v), veh/h	518	735	262	79	1741	242	280	95	117	111	52	337
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1571	1721	1770	1566
Q Serve(g_s), s	22.3	14.8	14.6	3.5	50.7	15.5	12.9	3.4	8.9	4.9	1.9	27.9
Cycle Q Clear(g_c), s	22.3	14.8	14.6	3.5	50.7	15.5	12.9	3.4	8.9	4.9	1.9	27.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
V/C Ratio(X)	1.08	0.32	0.31	0.29	0.88	0.33	0.93	0.12	0.24	0.40	0.07	0.59
Avail Cap(c_a), veh/h	480	2296	853	280	1988	737	301	1084	606	280	1062	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	28.1	20.4	69.5	45.1	26.4	72.5	48.6	41.2	69.9	48.9	41.3
Incr Delay (d2), s/veh	64.3	0.4	0.9	0.6	5.8	1.2	34.0	0.1	0.3	0.9	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.9	7.0	6.6	1.7	24.8	6.9	7.6	1.7	3.9	2.4	0.9	12.2
LnGrp Delay(d), s/veh	133.2	28.5	21.3	70.1	50.9	27.6	106.5	48.7	41.4	70.8	48.9	42.3
LnGrp LOS	F	C	C	E	D	C	F	D	D	E	D	D
Approach Vol, veh/h	1515				2062			492			500	
Approach Delay, s/veh	63.0				48.9			79.8			49.3	
Approach LOS	E				D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.3	79.7	19.7	42.3	28.0	70.0	18.6	43.4				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	43.3	59.7	* 14	48.0	* 22	50.4	* 13	49.0				
Max Q Clear Time (g_c+Q), s	43.3	16.8	14.9	29.9	24.3	52.7	6.9	10.9				
Green Ext Time (p_c), s	0.1	7.3	0.0	1.4	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay					57.0							
HCM 2010 LOS					E							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (veh/h)	37	682	186	643	1391	18	315	14	289	6	67	88
Future Volume (veh/h)	37	682	186	643	1391	18	315	14	289	6	67	88
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	741	202	699	1512	20	353	0	314	7	73	96
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1509	470	737	2295	30	461	0	545	16	168	157
Arrive On Green	0.07	0.30	0.30	0.21	0.44	0.44	0.13	0.00	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5172	68	3548	0	1583	162	1692	1583
Grp Volume(v), veh/h	40	741	202	699	991	541	353	0	314	80	0	96
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1851	1774	0	1583	1855	0	1583
Q Serve(g_s), s	2.2	12.0	10.3	20.0	23.0	23.0	9.6	0.0	13.0	4.1	0.0	5.8
Cycle Q Clear(g_c), s	2.2	12.0	10.3	20.0	23.0	23.0	9.6	0.0	13.0	4.1	0.0	5.8
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.09		1.00
Lane Grp Cap(c), veh/h	119	1509	470	737	1504	821	461	0	545	184	0	157
V/C Ratio(X)	0.34	0.49	0.43	0.95	0.66	0.66	0.77	0.00	0.58	0.43	0.00	0.61
Avail Cap(c_a), veh/h	177	1509	470	737	1504	821	461	0	545	185	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	28.9	28.3	38.8	21.9	21.9	42.0	0.0	26.8	42.4	0.0	43.2
Incr Delay (d2), s/veh	1.6	1.1	2.9	21.6	2.3	4.1	7.5	0.0	1.5	1.6	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.8	4.9	11.7	11.2	12.7	5.2	0.0	7.3	2.2	0.0	2.8
LnGrp Delay(d),s/veh	46.2	30.1	31.2	60.3	24.1	26.0	49.5	0.0	28.3	44.0	0.0	49.8
LnGrp LOS	D	C	C	E	C	C	D		C	D		D
Approach Vol, veh/h	983			2231			667			176		
Approach Delay, s/veh	31.0			35.9			39.6			47.2		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.2			16.3	12.4	51.9		19.4				
Change Period (Y+Rc), s	7.5			6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.6			10.0	* 10	41.0		13.0				
Max Q Clear Time (g_c+Q), s	14.0			7.8	4.2	25.0		15.0				
Green Ext Time (p_c), s	0.0	5.3		0.2	0.0	9.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				35.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	54	119	54	76	35	63	541	15	30	1048	103
Future Volume (veh/h)	76	54	119	54	76	35	63	541	15	30	1048	103
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	71	76	129	59	83	38	68	588	16	33	1139	112
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	234	194	151	159	132	101	1576	704	63	1499	661
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.06	0.45	0.45	0.04	0.42	0.42
Sat Flow, veh/h	1774	1863	1547	1774	1863	1549	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	71	76	129	59	83	38	68	588	16	33	1139	112
Grp Sat Flow(s),veh/h/ln	1774	1863	1547	1774	1863	1549	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.1	2.2	4.6	1.8	2.5	1.3	2.2	6.5	0.3	1.1	16.0	2.6
Cycle Q Clear(g_c), s	2.1	2.2	4.6	1.8	2.5	1.3	2.2	6.5	0.3	1.1	16.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	234	194	151	159	132	101	1576	704	63	1499	661
V/C Ratio(X)	0.32	0.32	0.66	0.39	0.52	0.29	0.67	0.37	0.02	0.52	0.76	0.17
Avail Cap(c_a), veh/h	547	574	477	547	574	478	167	1825	815	179	1849	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	23.3	24.3	25.3	25.6	25.0	27.0	10.8	9.1	27.7	14.3	10.4
Incr Delay (d2), s/veh	0.8	0.8	3.9	1.6	2.6	1.2	7.4	0.1	0.0	6.6	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.2	2.2	1.0	1.4	0.6	1.3	3.1	0.1	0.6	8.1	1.1
LnGrp Delay(d),s/veh	24.1	24.1	28.2	26.9	28.2	26.2	34.4	10.9	9.1	34.3	15.8	10.6
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	B
Approach Vol, veh/h	276			180			672			1284		
Approach Delay, s/veh	26.0			27.4			13.2			15.8		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	30.5				11.8	7.8	29.2	9.5				
Change Period (Y+Rc), s	4.5				4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.1				18.0	5.5	30.5	18.0				
Max Q Clear Time (g_c+Q), s	8.5				6.6	4.2	18.0	4.5				
Green Ext Time (p_c), s	0.0	4.1			0.8	0.0	6.8	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				17.1								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Proj AM
25: Main Access & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	25	344	37	13	551	8	87	0	31	20	0	59
Future Volume (veh/h)	25	344	37	13	551	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	374	40	14	599	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1260	564	33	1205	539	407	0	240	435	0	240
Arrive On Green	0.03	0.36	0.36	0.02	0.34	0.34	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	374	40	14	599	9	95	0	34	22	0	64
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.4	2.2	0.5	0.2	3.8	0.1	1.9	0.0	0.5	0.4	0.0	1.0
Cycle Q Clear(g_c), s	0.4	2.2	0.5	0.2	3.8	0.1	2.9	0.0	0.5	0.9	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1260	564	33	1205	539	407	0	240	435	0	240
V/C Ratio(X)	0.45	0.30	0.07	0.43	0.50	0.02	0.23	0.00	0.14	0.05	0.00	0.27
Avail Cap(c_a), veh/h	312	2923	1307	312	2923	1307	1048	0	1001	1093	0	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	6.6	6.1	13.8	7.4	6.2	12.0	0.0	10.5	10.9	0.0	10.7
Incr Delay (d2), s/veh	5.2	0.1	0.1	8.6	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	1.1	0.2	0.2	1.9	0.0	0.7	0.0	0.2	0.2	0.0	0.5
LnGrp Delay(d), s/veh	18.7	6.7	6.1	22.5	7.8	6.2	12.3	0.0	10.7	10.9	0.0	11.3
LnGrp LOS	B	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h	441			622			129			86		
Approach Delay, s/veh	7.4			8.1			11.9			11.2		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6			8.8	5.5	14.2		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I), s	4.2			3.0	2.4	5.8		4.9				
Green Ext Time (p_c), s	0.0	2.5		0.3	0.0	3.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.4								
HCM 2010 LOS				A								

APPENDIX F

HISTORICAL CALTRANS SR-76 TRAFFIC VOLUMES

						2012	
Ro	Count	Postmil			Back	Ahead	
Dist	ute	y	R	e	Description	AADT	AADT
11	76	SD	R	0	JCT. RTE. 5	47500	47500
11	76	SD	R	0.486	OCEANSIDE, LORETTA STREET	47500	46000
11	76	SD	R	1.156	OCEANSIDE, CANYON DRIVE	46000	48000
11	76	SD	R	1.767	OCEANSIDE, BENET ROAD	48000	48000
11	76	SD	R	2.145	OCEANSIDE, AIRPORT ROAD	48000	52000
11	76	SD	R	3.389	OCEANSIDE, EL CAMINO REAL	52000	46000
11	76	SD	R	3.745	OCEANSIDE, DOUGLAS STREET	46000	44500
11	76	SD	R	4.211	OCEANSIDE, RANCHO DEL ORO	44500	44000
11	76	SD	R	5.597	OCEANSIDE, FRAZEE ROAD	44000	44000
11	76	SD	R	6.207	COLLEGE BOULEVARD	44000	40500
11	76	SD	R	6.721	OCEANSIDE, NORTH SANTA FE RD	40500	39000
11	76	SD	R	9.49	VISTA WAY	30000	31500

		2013	
Back	Ahead	Back	Ahead
AADT	AADT	AADT	AADT
	48000		48000
48000	46500		
46500	48500		
48500	48500		
48500	53000		
53000	46500		
46500	45000		
45000	44500		
44500	44500		
44500	40500		
40500	42000		
33500	35500		

		2014	
Back	Ahead	Back	Ahead
AADT	AADT	AADT	AADT
	49500		
49500	48000		
48000	50000		
50000	50000		
50000	55000		
55000	48000		
48000	46500		
46500	46000		
46000	46000		
46000	42000		
42000	44500		
34000	38500		

		2015	
Back	Ahead	Back	Ahead
AADT	AADT	AADT	AADT
	49500		
49500	48000		
48000	50000		
50000	50000		
50000	55000		
55000	48000		
48000	46500		
46500	46000		
46000	46000		
46000	42500		
42500	47000		
36000	41000		

		2016	
Back	Ahead	Back	Ahead
AADT	AADT	AADT	AADT
	50000		
50000	45000		
45000	46500		
46500	46500		
46500	51000		
51000	44500		
44500	43000		
43000	43000		
43000	43500		
43500	43500		
43500	47500		
37500	37000		

5%	5%
-2%	-2%
-3%	-3%
-3%	-3%
-2%	-2%
-3%	-3%
-3%	-3%
-2%	-1%
7%	7%
18%	18%
15%	15%
2%	2%

Average Growth over 5 Years 2%

APPENDIX G

NEAR-TERM CUMULATIVE PROJECTS ASSIGNMENT

Cumulative Projects Assignment

INTERSECTION	DIRECTION	TOTAL CUMULATIVE						Adjusted for Balancing						CP1: Villa Stora (2186)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Vandegrift Blvd/ Douglas Ave	Sb	0	0	0	0	0	0												
	Wb	0	0	0	0	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	0	0	0	0												
2. North River Rd/ Vandegrift Blvd	Sb	0	0	0	0	0	0												
	Wb	0	0	0	0	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	0	0	0	0												
3. North River Rd/ North River Circle	Sb	0	0	0	0	0	0												
	Wb	0	0	12	9	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	8	13	0	0												
4. North River Rd/ Leon St	Sb	0	0	0	0	0	0												
	Wb	0	0	9	6	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	4	10	0	0												
5. North River Rd/ Stallion Dr	Sb	0	0	0	0	0	0												
	Wb	0	0	9	7	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	6	11	0	0												
6. North River Rd/ Wilshire Rd (Access C)	Sb	0	0	0	0	0	0												
	Wb	0	0	9	6	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	5	11	0	0												
7. North River Rd/ Sleeping Indian Rd	Sb	0	0	0	0	0	0												
	Wb	0	0	7	5	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	5	10	0	0												
8. North River Rd/ Mission Rd/ SR 76	Sb	0	0	12	31	0	0									4	14		
	Wb	0	0	0	0	0	0												
	Nb	0	0	28	16	0	0									12	6		
	Eb	0	0	0	0	0	0												
9. North River Rd/ Douglas Ave	Sb	0	0	1	4	0	0												
	Wb	0	0	2	1	100	47												
	Nb	25	110	1	4	0	0												
	Eb	0	0	1	2	0	0												

Cumulative Projects Assignment

INTERSECTION	DIRECTION	TOTAL CUMULATIVE						Adjusted for Balancing						CP1: Villa Storia (2186)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
10. North River Rd/ Avenida Descanso	Sb	0	0	0	0	0	0												
	Wb	0	0	102	48	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	26	112	0	0												
11. North River Rd/ College Blvd	Sb	0	0	0	0	0	0												
	Wb	0	0	0	0	0	0												
	Nb	0	0	0	0	0	0												
	Eb	0	0	0	0	0	0												
12. Douglas Dr/ El Camino Real	Sb	47	34	67	53	0	0								2	9			
	Wb	0	0	0	0	0	0												
	Nb	0	0	30	84	0	0								8	4			
	Eb	0	0	0	0	19	55												
13. El Camino Real/ Mission Ave	Sb	1	2	5	13	1	2											1	2
	Wb	2	1	10	7	12	21							2	1	8	4	8	4
	Nb	17	16	8	9	13	12							2	9				
	Eb	7	18	5	11	2	2									2	9		
14. Douglas Dr/ Mission Ave	Sb	4	2	41	32	22	19											2	9
	Wb	13	26	24	12	2	1							8	4	23	11	2	1
	Nb	1	2	16	53	0	0							1	2				
	Eb	0	0	7	26	1	4									6	25		
15. Douglas Dr/ SR 76	Sb	37	20	0	0	6	13							2	1				
	Wb	4	14	87	104	0	0									39	18		
	Nb	0	0	0	0	0	0												
	Eb	0	0	82	111	13	41									11	43	1	2
16. Rancho Del Oro/ SR 76	Sb	40	19	64	58	29	14							39	18	37	17	29	14
	Wb	8	32	37	73	15	41							8	32				
	Nb	19	33	32	84	25	30									11	40		
	Eb	14	40	63	52	12	44											11	43
17. Old Grove Rd/ SR 76	Sb	0	0	0	0	0	0												
	Wb	0	0	51	101	9	34									8	32	9	34
	Nb	31	15	0	0	9	45							31	15				
	Eb	38	20	73	79	0	0									29	14		
18. Frazee Rd/ SR 76	Sb	2	7	0	0	0	0							2	7				
	Wb	0	0	37	67	0	0									12	45		
	Nb	0	0	0	0	6	20											3	14
	Eb	19	10	60	48	6	3							13	6	41	20	6	3
19. College Blvd/ SR 76	Sb	6	13	60	28	21	16							3	11				
	Wb	12	23	31	48	37	20									7	27		
	Nb	9	45	14	67	2	7											2	7
	Eb	6	3	43	39	12	8							6	3	25	12	10	5
20. North Santa Fe/ SR 76	Sb	0	0	0	0	0	0												
	Wb	0	0	33	40	12	22									6	23		
	Nb	22	14	0	0	42	29											1	4
	Eb	26	48	30	43	0	0							4	2	21	10		
21. Melrose Dr/ SR 76	Sb	0	0	0	0	0	0												
	Wb	0	0	28	54	0	0									6	23		
	Nb	0	0	0	0	8	4												
	Eb	2	10	49	37	0	0									21	10		
22. E. Vista Way (South Leg)/ SR 76 (E/W)/ Old River (North Leg)	Sb	0	0	0	0	0	0												
	Wb	0	0	12	31	0	0									4	14		
	Nb	0	0	0	0	8	19											2	9
	Eb	19	11	28	16	0	0							9	4	12	6		
23. College Blvd/ Frazee Rd	Sb	6	3	93	66	0	0												
	Wb	0	0	1	5	0	0									1	5		
	Nb	0	0	43	111	2	7											2	7
	Eb	6	3	4	2	2	7							6	3	4	2		
24. North River/ West Roundabout (Access A)	Sb	0	0	56	49	0	0												
	Wb	0	0	1	5	0	0									1	5		
	Nb	0	0	34	71	2	7											2	7
	Eb	6	3	4	2	0	0							6	3	4	2		
25. North River/ Main Access (Access B)	Sb	0	0	56	49	0	0												
	Wb	0	0	1	5	0	0									1	5		
	Nb	0	0	34	71	2	7											2	7
	Eb	6	3	4	2	0	0							6	3	4	2		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP2: Mission Cove Mixed Use						CP3: Pacific Coast Business Park						CP4: Rancho Del Oro Village XII					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Vandegrift Blvd/ Douglas Ave	Sb Wb Nb Eb																		
2. North River Rd/ Vandegrift Blvd	Sb Wb Nb Eb																		
3. North River Rd/ North River Circle	Sb Wb Nb Eb																		
4. North River Rd/ Leon St	Sb Wb Nb Eb																		
5. North River Rd/ Stallion Dr	Sb Wb Nb Eb																		
6. North River Rd/ Wilshire Rd (Access C)	Sb Wb Nb Eb																		
7. North River Rd/ Sleeping Indian Rd	Sb Wb Nb Eb																		
8. North River Rd/ Mission Rd/ SR 76	Sb Wb Nb Eb			1	4														
				3	2														
9. North River Rd/ Douglas Ave	Sb Wb Nb Eb																		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP2: Mission Cove Mixed Use						CP3: Pacific Coast Business Park						CP4: Rancho Del Oro Village XII					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
10. North River Rd/ Avenida Descanso	Sb Wb Nb Eb																		
11. North River Rd/ College Blvd	Sb Wb Nb Eb																		
12. Douglas Dr/ El Camino Real	Sb Wb Nb Eb	1	2	2	4														
				4	3														
						1	1												
13. El Camino Real/ Mission Ave	Sb Wb Nb Eb	1	2																
				2	3														
						1	1												
		1	1	3	2		2	2											
14. Douglas Dr/ Mission Ave	Sb Wb Nb Eb			2	4														
				1	1														
				4	3														
				1	1														
15. Douglas Dr/ SR 76	Sb Wb Nb Eb	2	4																
				13	23					6	40								
						4	3												
				22	17					33	16								
16. Rancho Del Oro/ SR 76	Sb Wb Nb Eb	1	1							17	8					1	4		
				10	18					6	40								
						2	4			3	20					4	2	12	6
		4	3	17	13		1	1		33	16			3	13				
17. Old Grove Rd/ SR 76	Sb Wb Nb Eb			7	13														
						3	5												
		5	4	12	9					33	16								
18. Frazee Rd/ SR 76	Sb Wb Nb Eb			4	7														
						3	6												
		6	4	6	5														
19. College Blvd/ SR 76	Sb Wb Nb Eb	1	1							17	8								
				3	6														
										6	40								
				5	4	1	1			3	20								
20. North Santa Fe/ SR 76	Sb Wb Nb Eb			2	5					25	12								
						1	1												
		1	1	4	3					2	10								
										5	30								
21. Melrose Dr/ SR 76	Sb Wb Nb Eb			2	5					8	4								
				4	3					2	10								
										2	10								
22. E. Vista Way (South Leg)/ SR 76 (E/W)/ Old River (North Leg)	Sb Wb Nb Eb			1	4														
						1	1												
		1	1	3	2														
23. College Blvd/ Frazee Rd	Sb Wb Nb Eb									50	23					6	26		
										10	60								
																24	11		
24. North River/ West Roundabout (Access A)	Sb Wb Nb Eb									50	23					6	26		
										10	60								
																24	11		
25. North River/ Main Access (Access B)	Sb Wb Nb Eb									50	23					6	26		
										10	60								
																24	11		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP5: Oceanside Pavilion						CP6: Oceanpointe Development						CP7: El Corazon (Ph 1&2)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Vandegrift Blvd/ Douglas Ave	Sb Wb Nb Eb																		
2. North River Rd/ Vandegrift Blvd	Sb Wb Nb Eb																		
3. North River Rd/ North River Circle	Sb Wb Nb Eb																		
4. North River Rd/ Leon St	Sb Wb Nb Eb																		
5. North River Rd/ Stallion Dr	Sb Wb Nb Eb																		
6. North River Rd/ Wilshire Rd (Access C)	Sb Wb Nb Eb																		
7. North River Rd/ Sleeping Indian Rd	Sb Wb Nb Eb																		
8. North River Rd/ Mission Rd/ SR 76	Sb Wb Nb Eb																		
9. North River Rd/ Douglas Ave	Sb Wb Nb Eb															1	4		
																1	4		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP5: Oceanside Pavilion						CP6: Oceanpointe Development						CP7: El Corazon (Ph 1&2)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
10. North River Rd/ Avenida Descanso	Sb Wb Nb Eb																		
11. North River Rd/ College Blvd	Sb Wb Nb Eb																		
12. Douglas Dr/ El Camino Real	Sb Wb Nb Eb							1	6					4	7	4	12		
												5	2			3	12	3	7
13. El Camino Real/ Mission Ave	Sb Wb Nb Eb									1	6					4	7		
								15	7	5	2	4	17			3	7	2	6
								3	11					3	6				
14. Douglas Dr/ Mission Ave	Sb Wb Nb Eb															4	12		
																3	12		
15. Douglas Dr/ SR 76	Sb Wb Nb Eb									6	2			3	12	2	6	4	12
										1	6					2	6		
16. Rancho Del Oro/ SR 76	Sb Wb Nb Eb									2	11					7	18		
								10	5	10	5	3	11	9	28	4	17	12	30
								1	6			6	2	6	18			5	18
17. Old Grove Rd/ SR 76	Sb Wb Nb Eb									3	11					12	30		
										10	5					9	28		
18. Frazee Rd/ SR 76	Sb Wb Nb Eb																		
19. College Blvd/ SR 76	Sb Wb Nb Eb																		
20. North Santa Fe/ SR 76	Sb Wb Nb Eb																		
21. Melrose Dr/ SR 76	Sb Wb Nb Eb																		
22. E. Vista Way (South Leg)/ SR 76 (E/W)/ Old River (North Leg)	Sb Wb Nb Eb																		
23. College Blvd/ Frazee Rd	Sb Wb Nb Eb																		
24. North River/ West Roundabout (Access A)	Sb Wb Nb Eb																		
25. North River/ Main Access (Access B)	Sb Wb Nb Eb																		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP8: Oside+Melrose (2406)						CP9: Mission SLR						CP10: North River GPA - Nagata					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Vandegrift Blvd/ Douglas Ave	Sb Wb Nb Eb																		
2. North River Rd/ Vandegrift Blvd	Sb Wb Nb Eb																		
3. North River Rd/ North River Circle	Sb Wb Nb Eb																		
4. North River Rd/ Leon St	Sb Wb Nb Eb																		
5. North River Rd/ Stallion Dr	Sb Wb Nb Eb																		
6. North River Rd/ Wilshire Rd (Access C)	Sb Wb Nb Eb																		
7. North River Rd/ Sleeping Indian Rd	Sb Wb Nb Eb																		
8. North River Rd/ Mission Rd/ SR 76	Sb Wb Nb Eb			7	13														
				13	8														
9. North River Rd/ Douglas Ave	Sb Wb Nb Eb													25	110	2	1	100	47
																1	2		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	CP8: Oside+Melrose (2406)						CP9: Mission SLR						CP10: North River GPA - Nagata					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
10. North River Rd/ Avenida Descanso	Sb Wb Nb Eb															102	48		
																26	112		
11. North River Rd/ College Blvd	Sb Wb Nb Eb																		
12. Douglas Dr/ El Camino Real	Sb Wb Nb Eb													41	19	59	28		
																15	65	10	45
13. El Camino Real/ Mission Ave	Sb Wb Nb Eb																		
14. Douglas Dr/ Mission Ave	Sb Wb Nb Eb													4	2	35	16	20	10
														5	22	9	38	1	4
15. Douglas Dr/ SR 76	Sb Wb Nb Eb			21	15									33	15			2	1
				13	23									1	2			8	36
16. Rancho Del Oro/ SR 76	Sb Wb Nb Eb			21	15														
				13	23														
17. Old Grove Rd/ SR 76	Sb Wb Nb Eb			21	15														
				13	23														
18. Frazee Rd/ SR 76	Sb Wb Nb Eb			21	15														
				13	23														
19. College Blvd/ SR 76	Sb Wb Nb Eb	7	3	21	15	3	7							2	1	43	20	18	9
		3	5	13	23	4	2							5	20	11	47	1	2
20. North Santa Fe/ SR 76	Sb Wb Nb Eb					12	22												
		22	14			32	20												
		19	35																
21. Melrose Dr/ SR 76	Sb Wb Nb Eb			12	22														
				22	14														
22. E. Vista Way (South Leg)/ SR 76 (E/W)/ Old River (North Leg)	Sb Wb Nb Eb			7	13														
		9	6	13	8	5	9												
23. College Blvd/ Frazee Rd	Sb Wb Nb Eb													6	3	37	17		
																9	40	2	7
24. North River/ West Roundabout (Access A)	Sb Wb Nb Eb																		
25. North River/ Main Access (Access B)	Sb Wb Nb Eb																		

Cumulative Projects Assignment

INTERSECTION	DIRECTION	North River Road Growth					
		Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Vandegrift Blvd/ Douglas Ave	Sb Wb Nb Eb						
2. North River Rd/ Vandegrift Blvd	Sb Wb Nb Eb						
3. North River Rd/ North River Circle	Sb Wb Nb Eb			12	9		
				8	13		
4. North River Rd/ Leon St	Sb Wb Nb Eb			9	6		
				4	10		
5. North River Rd/ Stallion Dr	Sb Wb Nb Eb			9	7		
				6	11		
6. North River Rd/ Wilshire Rd (Access C)	Sb Wb Nb Eb			9	6		
				5	11		
7. North River Rd/ Sleeping Indian Rd	Sb Wb Nb Eb			7	5		
				5	10		
8. North River Rd/ Mission Rd/ SR 76	Sb Wb Nb Eb						
9. North River Rd/ Douglas Ave	Sb Wb Nb Eb						

Cumulative Projects Assignment

INTERSECTION	DIRECTION	North River Road Growth					
		Ram	Rpm	Tam	Tpm	Lam	Lpm
10. North River Rd/ Avenida Descanso	Sb Wb Nb Eb						
11. North River Rd/ College Blvd	Sb Wb Nb Eb						
12. Douglas Dr/ El Camino Real	Sb Wb Nb Eb						
13. El Camino Real/ Mission Ave	Sb Wb Nb Eb						
14. Douglas Dr/ Mission Ave	Sb Wb Nb Eb						
15. Douglas Dr/ SR 76	Sb Wb Nb Eb						
16. Rancho Del Oro/ SR 76	Sb Wb Nb Eb						
17. Old Grove Rd/ SR 76	Sb Wb Nb Eb						
18. Frazee Rd/ SR 76	Sb Wb Nb Eb						
19. College Blvd/ SR 76	Sb Wb Nb Eb						
20. North Santa Fe/ SR 76	Sb Wb Nb Eb						
21. Melrose Dr/ SR 76	Sb Wb Nb Eb						
22. E. Vista Way (South Leg)/ SR 76 (E/W)/ Old River (North Leg)	Sb Wb Nb Eb						
23. College Blvd/ Frazee Rd	Sb Wb Nb Eb						
24. North River/ West Roundabout (Access A)	Sb Wb Nb Eb						
25. North River/ Main Access (Access B)	Sb Wb Nb Eb						

STREET SEGMENT	Total	CP1 Villa Storia (2186)	CP2 Mission Cove Mixed Use	CP3 Pac Coast Business Park	CP4 Rancho Del Oro Village XII	CP5 Oceanside Pavilion	CP6 Oceanpointe Development	CP7 El Corazon	CP8 Oside+Melros e (2406)	CP10 North River GPA (Nagata)	N. River Road Growth
	ADT	3284	2080	4797	2424						
Vandegrift Boulevard											
North River Rd to Doulgas Dr	0	0	0	0	0		0	0	0		
North River Road											
Douglas Dr to College Blvd	1,600	0	0	0	0		0	0	0	1,600	
College Blvd to Vandegrift Blvd	320	0	0	0	0		0	0	0	320	
Vandegrift Blvd to North River Circ	270	0	0	0	0		0	0	0		266
North River Circle to Stallion Dr	260	0	0	0	0		0	0	0		258
Stallion Dr to Wilshire Rd	190	0	0	0	0		0	0	0		194
Wilshire Rd to Sleeping Indian Rd	190	0	0	0	0		0	0	0		185
Sleeping Indian Rd to SR-76	160	0	0	0	0		0	0	0		156
State Route 76 (Mission Road)											
N River Rd to Via Montellano	570	164	52	48	60		40	0	202		
Douglas Drive											
SR 76 to El Camino Real	1,260	146	84	0	0		0	100	0	928	
El Camino Real to N River Rd	1,900	146	84	0	0		0	100	0	1,568	
College Blvd											
N River Rd to Adams St	1,410	164	0	0	0		0	0	122	1,120	
Adams St to SR 76	1,370	164	0	0	0		0	0	122	1,088	
SR-76 to Frazee Rd	1,850	0	0	720	373		0	0	81	672	
El Camino Real											
Mission Ave to Douglas Dr	1,120	33	42	0	0		80	329	0	640	
Mission Avenue											
El Camino Real to Douglas Dr	810	261	21				240	220		64	

APPENDIX H

INTERSECTION ANALYSIS WORKSHEETS – EXISTING + NEAR-TERM CUMULATIVE PROJECTS

Existing + Cuml AM
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	435	22	78	139	83	51	48	924	50	13	267	30
Future Volume (veh/h)	435	22	78	139	83	51	48	924	50	13	267	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	473	24	85	151	90	55	52	1004	54	14	290	33
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	67	238	287	207	117	89	1914	594	31	1596	178
Arrive On Green	0.17	0.19	0.19	0.08	0.10	0.10	0.05	0.38	0.38	0.02	0.34	0.34
Sat Flow, veh/h	3442	361	1277	3442	2174	1235	1774	5085	1577	1774	4644	517
Grp Volume(v), veh/h	473	0	109	151	72	73	52	1004	54	14	210	113
Grp Sat Flow(s), veh/h/ln	1721	0	1637	1721	1770	1640	1774	1695	1577	1774	1695	1770
Q Serve(g_s), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.2	1.2	0.4	2.3	2.4
Cycle Q Clear(g_c), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.2	1.2	0.4	2.3	2.4
Prop In Lane	1.00		0.78	1.00		0.75	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	601	0	305	287	168	156	89	1914	594	31	1165	609
V/C Ratio(X)	0.79	0.00	0.36	0.53	0.43	0.47	0.58	0.52	0.09	0.45	0.18	0.19
Avail Cap(c_a), veh/h	681	0	664	444	595	551	166	1914	594	166	1165	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	19.0	23.5	22.9	22.9	24.9	13.0	10.8	26.0	12.3	12.3
Incr Delay (d2), s/veh	5.4	0.0	0.7	1.5	1.7	2.2	5.9	1.0	0.3	9.8	0.3	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.8	0.0	1.5	1.1	1.1	1.1	0.9	4.0	0.6	0.3	1.1	1.3
LnGrp Delay(d), s/veh	26.6	0.0	19.7	25.0	24.6	25.1	30.8	14.0	11.1	35.9	12.6	13.0
LnGrp LOS	C		B	C		C	C	B	B	D	B	B
Approach Vol, veh/h	582			296			1110			337		
Approach Delay, s/veh	25.3			24.9			14.6			13.7		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	24.7	9.0	14.5	7.2	22.9	13.9	9.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.4	6.9	21.7	5.0	18.4	10.6	18.0				
Max Q Clear Time (g_c+1), s	2.4	10.2	4.3	5.1	3.5	4.4	9.0	4.3				
Green Ext Time (p_c), s	0.0	4.3	0.1	0.5	0.0	1.6	0.3	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	43	48	113	432	50	199	95	854	267	107	735	36
Future Volume (veh/h)	43	48	113	432	50	199	95	854	267	107	735	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	52	123	470	54	216	103	928	290	116	799	39
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	358	294	601	105	421	133	1534	473	149	1100	492
Arrive On Green	0.04	0.19	0.19	0.17	0.32	0.32	0.07	0.30	0.30	0.08	0.31	0.31
Sat Flow, veh/h	1774	1863	1529	3442	324	1296	1774	5085	1569	1774	3539	1583
Grp Volume(v), veh/h	47	52	123	470	0	270	103	928	290	116	799	39
Grp Sat Flow(s), veh/h/ln	1774	1863	1529	1721	0	1620	1774	1695	1569	1774	1770	1583
Q Serve(g_s), s	1.9	1.7	5.1	9.5	0.0	9.8	4.2	11.4	11.5	4.7	14.6	1.3
Cycle Q Clear(g_c), s	1.9	1.7	5.1	9.5	0.0	9.8	4.2	11.4	11.5	4.7	14.6	1.3
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	358	294	601	0	526	133	1534	473	149	1100	492
V/C Ratio(X)	0.63	0.15	0.42	0.78	0.00	0.51	0.78	0.61	0.61	0.78	0.73	0.08
Avail Cap(c_a), veh/h	212	921	756	969	0	1063	256	2304	711	304	1701	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	24.4	25.8	28.7	0.0	19.9	33.1	21.7	21.8	32.7	22.3	17.7
Incr Delay (d2), s/veh	8.4	0.2	0.9	2.3	0.0	0.8	9.2	0.4	1.3	8.3	0.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	0.9	2.3	4.7	0.0	4.5	2.4	5.4	5.2	2.6	7.2	0.6
LnGrp Delay(d), s/veh	42.7	24.6	26.8	31.0	0.0	20.7	42.3	22.1	23.1	41.0	23.3	17.8
LnGrp LOS	D	C	C	C		C	D	C	C	D	C	B
Approach Vol, veh/h	222			740			1321			954		
Approach Delay, s/veh	29.7			27.2			23.9			25.2		
Approach LOS	C			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	26.5	17.2	18.5	10.0	27.1	7.6	28.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	33.0	20.5	36.0	10.5	35.0	8.7	47.8				
Max Q Clear Time (g_c+1), s	13.5	11.5	7.1	6.2	16.6	3.9	11.8					
Green Ext Time (p_c), s	0.1	7.7	1.2	0.7	0.1	5.6	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay	25.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↱	↰	↱
Traffic Volume (veh/h)	4	422	2	4	605	2	40	0	6	3	0	26
Future Volume (veh/h)	4	422	2	4	605	2	40	0	6	3	0	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	459	0	4	658	2	43	0	7	3	0	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	1182	529	10	1209	4	127	0	112	6	0	54
Arrive On Green	0.01	0.33	0.00	0.01	0.33	0.33	0.07	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3619	11	1774	0	1562	155	0	1445
Grp Volume(v), veh/h	4	459	0	4	322	338	43	0	7	31	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1861	1774	0	1562	1600	0	0
Q Serve(g_s), s	0.1	3.2	0.0	0.1	4.8	4.8	0.8	0.0	0.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.1	3.2	0.0	0.1	4.8	4.8	0.8	0.0	0.1	0.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.10		0.90
Lane Grp Cap(c), veh/h	10	1182	529	10	591	621	127	0	112	60	0	0
V/C Ratio(X)	0.41	0.39	0.00	0.41	0.54	0.54	0.34	0.00	0.06	0.52	0.00	0.00
Avail Cap(c_a), veh/h	272	2277	1019	272	1138	1197	978	0	861	882	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	8.3	0.0	16.2	8.8	8.8	14.4	0.0	14.1	15.4	0.0	0.0
Incr Delay (d2), s/veh	25.8	0.2	0.0	25.8	0.8	0.7	1.6	0.0	0.2	6.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	1.6	0.0	0.1	2.5	2.6	0.4	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	42.0	8.5	0.0	42.0	9.6	9.6	16.0	0.0	14.4	22.1	0.0	0.0
LnGrp LOS	D	A		D	A	A	B		B	C		
Approach Vol, veh/h	463			664			50			31		
Approach Delay, s/veh	8.8			9.8			15.7			22.1		
Approach LOS	A			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s/4.7	15.4			5.7	4.7	15.4		6.8				
Change Period (Y+Rc), s/4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s/21.0	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I2), s/5.2	5.2			2.6	2.1	6.8		2.8				
Green Ext Time (p_c), s/0.0	0.0	2.7		0.1	0.0	3.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↰	↱	↰	↱	↰	↱						
Traffic Vol, veh/h	46	227	447	41	65	101						
Future Vol, veh/h	46	227	447	41	65	101						
Conflicting Peds, #/hr	5	0	0	5	0	2						
Sign Control	Free	Free	Free	Free	Stop	Stop						
RT Channelized	-	None	-	None	-	None						
Storage Length	25	-	-	-	0	-						
Veh in Median Storage, #	-	0	0	-	0	-						
Grade, %	-	0	0	-	0	-						
Peak Hour Factor	92	92	92	92	92	92						
Heavy Vehicles, %	2	2	2	2	2	2						
Mvmt Flow	50	247	486	45	71	110						
Major/Minor												
Major1	Major2	Minor2										
Conflicting Flow All	536	0	-	0	861	516						
Stage 1	-	-	-	-	514	-						
Stage 2	-	-	-	-	347	-						
Critical Hdwy	4.12	-	-	-	6.42	6.22						
Critical Hdwy Stg 1	-	-	-	-	5.42	-						
Critical Hdwy Stg 2	-	-	-	-	5.42	-						
Follow-up Hdwy	2.218	-	-	-	3.518	3.318						
Pot Cap-1 Maneuver	1032	-	-	-	326	559						
Stage 1	-	-	-	-	600	-						
Stage 2	-	-	-	-	716	-						
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1027	-	-	-	307	555						
Mov Cap-2 Maneuver	-	-	-	-	418	-						
Stage 1	-	-	-	-	568	-						
Stage 2	-	-	-	-	712	-						
Approach												
EB	WB	SB										
HCM Control Delay, s	1.5	0	16.5									
HCM LOS			C									
Minor Lane/Major Mvmt												
EBL	EBT	WBT	WBR	SBLn1								
Capacity (veh/h)	1027	-	-	-	492							
HCM Lane V/C Ratio	0.049	-	-	-	0.367							
HCM Control Delay (s)	8.7	-	-	-	16.5							
HCM Lane LOS	A	-	-	-	C							
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7							

HCM 2010 TWSC
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Synchro 9 Report

Existing + Cuml AM
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	291	481	1	1	7
Future Vol, veh/h	3	291	481	1	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	316	523	1	1	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	524	0	845
Stage 1	-	-	523
Stage 2	-	-	322
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1043	-	333
Stage 1	-	-	595
Stage 2	-	-	735
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1043	-	332
Mov Cap-2 Maneuver	-	-	332
Stage 1	-	-	593
Stage 2	-	-	735

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.2
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1043	-	-	-	511
HCM Lane V/C Ratio	0.003	-	-	-	0.017
HCM Control Delay (s)	8.5	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Existing + Cuml AM
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	271	457	13	10	25
Future Vol, veh/h	20	271	457	13	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	295	497	14	11	27

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	511	0	843
Stage 1	-	-	504
Stage 2	-	-	339
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1054	-	334
Stage 1	-	-	607
Stage 2	-	-	722
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1054	-	326
Mov Cap-2 Maneuver	-	-	326
Stage 1	-	-	592
Stage 2	-	-	722

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	13
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1054	-	-	-	326	568
HCM Lane V/C Ratio	0.021	-	-	-	0.033	0.048
HCM Control Delay (s)	8.5	0	-	-	16.4	11.7
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Existing + Cuml AM
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	262	356	9	24	106
Future Vol, veh/h	23	262	356	9	24	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	285	387	10	26	115
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	397	0	-	0	727	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1162	-	-	-	391	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1162	-	-	-	381	657
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	665	-
Stage 2	-	-	-	-	725	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		13.2		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1162	-	-	-	579	
HCM Lane V/C Ratio	0.022	-	-	-	0.244	
HCM Control Delay (s)	8.2	0	-	-	13.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	1	

Existing + Cuml AM
8: SR-76 & N. River Rd

North River Farms
06/27/2018

Intersection								
								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	111	98	202	861	1720	212		
Future Volume (veh/h)	111	98	202	861	1720	212		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	121	107	220	936	1870	230		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	216	193	183	2573	1983	887		
Arrive On Green	0.12	0.12	0.10	0.73	0.56	0.56		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	121	107	220	936	1870	230		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	5.8	5.7	9.3	8.8	44.3	6.7		
Cycle Q Clear(g_c), s	5.8	5.7	9.3	8.8	44.3	6.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	216	193	183	2573	1983	887		
V/C Ratio(X)	0.56	0.55	1.20	0.36	0.94	0.26		
Avail Cap(c_a), veh/h	650	581	183	2573	1983	887		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.2	37.2	40.3	4.6	18.4	10.2		
Incr Delay (d2), s/veh	2.3	2.5	130.6	0.4	10.6	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.0	5.1	11.2	4.4	24.2	3.1		
LnGrp Delay(d),s/veh	39.5	39.7	171.0	5.0	29.0	10.9		
LnGrp LOS	D	D	F	A	C	B		
Approach Vol, veh/h	228		1156		2100			
Approach Delay, s/veh	39.6		36.6		27.0			
Approach LOS	D		D		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5		6	
Phs Duration (G+Y+Rc), s	72.9		17.1		15.0		57.9	
Change Period (Y+Rc), s	7.5		6.1		* 5.7		7.5	
Max Green Setting (Gmax), s	43.4		33.0		* 9.3		28.4	
Max Q Clear Time (g_c+I1), s	10.8		7.8		11.3		46.3	
Green Ext Time (p_c), s	8.0		0.7		0.0		0.0	
Intersection Summary								
HCM 2010 Ctrl Delay	31.0							
HCM 2010 LOS	C							
Notes								

Existing + Cuml AM
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↱	↱	↱
Traffic Volume (veh/h)	38	70	184	1123	31	31	72	421	507	15	787	8
Future Volume (veh/h)	38	70	184	1123	31	31	72	421	507	15	787	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	41	76	200	1221	34	34	78	458	551	16	855	9
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	529	231	1293	312	312	99	1057	1828	31	935	10
Arrive On Green	0.15	0.15	0.15	0.36	0.36	0.36	0.06	0.30	0.30	0.02	0.26	0.26
Sat Flow, veh/h	1774	3539	1547	3548	856	856	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	41	76	200	1221	0	68	78	458	551	16	422	442
Grp Sat Flow(s), veh/h/ln	1774	1770	1547	1774	0	1712	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.1	2.0	13.4	35.4	0.0	2.8	4.6	11.1	9.1	0.9	24.5	24.5
Cycle Q Clear(g_c), s	2.1	2.0	13.4	35.4	0.0	2.8	4.6	11.1	9.1	0.9	24.5	24.5
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00	0.02	
Lane Grp Cap(c), veh/h	265	529	231	1293	0	624	99	1057	1828	31	461	484
V/C Ratio(X)	0.15	0.14	0.86	0.94	0.00	0.11	0.79	0.43	0.30	0.51	0.91	0.91
Avail Cap(c_a), veh/h	301	601	263	1322	0	638	99	1057	1828	84	477	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	39.2	44.0	32.6	0.0	22.3	49.4	30.0	7.5	51.6	38.0	38.0
Incr Delay (d2), s/veh	0.3	0.1	22.7	13.5	0.0	0.1	33.8	0.3	0.1	12.2	21.8	21.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	1.0	7.2	19.7	0.0	1.3	3.2	5.4	7.1	0.6	14.7	15.4
LnGrp Delay(d), s/veh	39.5	39.3	66.7	46.2	0.0	22.4	83.3	30.2	7.6	63.8	59.8	59.0
LnGrp LOS	D	D	E	D		C	F	C	A	E	E	E
Approach Vol, veh/h		317			1289			1087			880	
Approach Delay, s/veh		56.6			44.9			22.6			59.5	
Approach LOS		E			D			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.1			20.3	10.4	32.1		43.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5			18.0	5.9	28.6		39.5				
Max Q Clear Time (g_c+I), s	13.1			15.4	6.6	26.5		37.4				
Green Ext Time (p_c), s	0.0	5.1		0.3	0.0	1.1		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				42.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↱	↱	↱
Traffic Volume (veh/h)	45	450	3	10	832	56	5	3	21	84	0	98
Future Volume (veh/h)	45	450	3	10	832	56	5	3	21	84	0	98
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	49	489	3	11	904	61	5	3	23	91	0	107
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1384	8	25	1173	79	111	43	535	137	0	546
Arrive On Green	0.05	0.38	0.38	0.01	0.35	0.35	0.34	0.34	0.34	0.34	0.00	0.34
Sat Flow, veh/h	1774	3606	22	1774	3358	227	0	123	1551	0	0	1583
Grp Volume(v), veh/h	49	240	252	11	476	489	8	0	23	91	0	107
Grp Sat Flow(s), veh/h/ln	1774	1770	1858	1774	1770	1815	124	0	1551	0	0	1583
Q Serve(g_s), s	1.4	5.1	5.1	0.3	12.6	12.6	0.0	0.0	0.5	0.0	0.0	2.5
Cycle Q Clear(g_c), s	1.4	5.1	5.1	0.3	12.6	12.6	18.1	0.0	0.5	18.1	0.0	2.5
Prop In Lane	1.00		0.01	1.00		0.12	0.62		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	679	713	25	618	634	154	0	535	137	0	546
V/C Ratio(X)	0.57	0.35	0.35	0.44	0.77	0.77	0.05	0.00	0.04	0.66	0.00	0.20
Avail Cap(c_a), veh/h	199	786	825	172	759	778	154	0	535	137	0	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	11.5	11.5	25.7	15.2	15.2	14.0	0.0	11.4	26.2	0.0	12.1
Incr Delay (d2), s/veh	5.8	0.3	0.3	11.6	3.9	3.8	0.1	0.0	0.0	11.4	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	2.5	2.6	0.2	6.8	6.9	0.1	0.0	0.2	1.7	0.0	1.1
LnGrp Delay(d), s/veh	30.2	11.8	11.8	37.3	19.1	19.0	14.2	0.0	11.5	37.6	0.0	12.3
LnGrp LOS	C	B	B	D	B	B	B		B	D		B
Approach Vol, veh/h		541			976			31			198	
Approach Delay, s/veh		13.5			19.3			12.2			23.9	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.6			22.6	7.1	22.8		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.3			18.1	5.9	22.5		18.1				
Max Q Clear Time (g_c+I), s	7.1			20.1	3.4	14.6		20.1				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	3.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay					17.9							
HCM 2010 LOS					B							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	17	29	3	325	22	880	16	196	475	915	308	27
Future Volume (veh/h)	17	29	3	325	22	880	16	196	475	915	308	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	32	3	353	24	957	17	213	516	995	335	29
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	96	9	385	26	1459	32	953	784	1020	1938	867
Arrive On Green	0.06	0.06	0.06	0.23	0.23	0.23	0.02	0.27	0.27	0.30	0.55	0.55
Sat Flow, veh/h	1774	1672	157	1666	113	2738	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	18	0	35	377	0	957	17	213	516	995	335	29
Grp Sat Flow(s), veh/h/ln	1774	0	1829	1779	0	1369	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	5.8	30.6	35.3	5.8	1.0
Cycle Q Clear(g_c), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	5.8	30.6	35.3	5.8	1.0
Prop In Lane	1.00		0.09	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	105	412	0	1459	32	953	784	1020	1938	867
V/C Ratio(X)	0.18	0.00	0.33	0.92	0.00	0.66	0.54	0.22	0.66	0.98	0.17	0.03
Avail Cap(c_a), veh/h	475	0	490	412	0	1459	82	977	795	1020	1938	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	55.8	46.2	0.0	21.1	60.0	35.0	23.0	42.9	13.9	12.9
Incr Delay (d2), s/veh	0.8	0.0	1.9	24.9	0.0	1.1	13.3	0.1	2.0	22.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.6	0.0	1.2	15.4	0.0	11.9	0.7	2.8	17.9	19.9	2.8	0.5
LnGrp Delay(d), s/veh	56.1	0.0	57.7	71.1	0.0	22.2	73.3	35.1	25.0	65.4	14.0	12.9
LnGrp LOS	E		E	E		C	E	D	C	E	B	B
Approach Vol, veh/h	53			1334			746			1359		
Approach Delay, s/veh	57.2			36.0			29.0			51.6		
Approach LOS	E			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.0	37.7		11.6	6.7	72.0		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	33.0	34.0		33.0	5.7	64.8		28.5				
Max Q Clear Time (g_c+Q), s	32.6	32.6		4.3	3.2	7.8		30.5				
Green Ext Time (p_c), s	0.0	0.5		0.2	0.0	2.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				40.9								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↗	↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	385	22	46	54	50	1	36	697	22	13	1103	1043
Future Volume (veh/h)	385	22	46	54	50	1	36	697	22	13	1103	1043
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	418	24	0	59	54	1	39	758	24	14	1199	1134
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	592	320	272	81	74	136	72	1401	44	31	1334	1529
Arrive On Green	0.17	0.17	0.00	0.09	0.09	0.09	0.04	0.40	0.40	0.02	0.38	0.38
Sat Flow, veh/h	3442	1863	1583	948	868	1583	1774	3502	111	1774	3539	2787
Grp Volume(v), veh/h	418	24	0	113	0	1	39	383	399	14	1199	1134
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1815	0	1583	1774	1770	1843	1774	1770	1393
Q Serve(g_s), s	6.3	0.6	0.0	3.4	0.0	0.0	1.2	9.2	9.2	0.4	17.7	17.2
Cycle Q Clear(g_c), s	6.3	0.6	0.0	3.4	0.0	0.0	1.2	9.2	9.2	0.4	17.7	17.2
Prop In Lane	1.00		1.00	0.52		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	592	320	272	156	0	136	72	708	737	31	1334	1529
V/C Ratio(X)	0.71	0.07	0.00	0.72	0.00	0.01	0.54	0.54	0.54	0.45	0.90	0.74
Avail Cap(c_a), veh/h	1117	605	514	589	0	514	160	708	737	160	1340	1535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	19.3	0.0	24.7	0.0	23.2	26.1	12.7	12.7	27.0	16.3	9.5
Incr Delay (d2), s/veh	1.6	0.1	0.0	6.3	0.0	0.0	6.1	0.8	0.8	9.9	8.5	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.1	0.3	0.0	1.9	0.0	0.0	0.7	4.6	4.8	0.3	10.1	8.9
LnGrp Delay(d), s/veh	23.2	19.4	0.0	31.0	0.0	23.2	32.2	13.6	13.5	36.9	24.7	11.5
LnGrp LOS	C	B		C		C	C	B	B	D	C	B
Approach Vol, veh/h	442			114			821			2347		
Approach Delay, s/veh	23.0			30.9			14.4			18.4		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	26.7		14.0	6.8	25.4		9.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q), s	11.2	11.2		8.3	3.2	19.7		5.4				
Green Ext Time (p_c), s	0.0	3.5		1.2	0.0	1.2		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				18.5								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	164	111	112	167	277	61	134	258	118	108	885	385
Future Volume (veh/h)	164	111	112	167	277	61	134	258	118	108	885	385
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	121	0	182	301	66	146	280	128	117	962	418
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	573	256	277	471	102	184	1341	600	151	1275	683
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.16	0.10	0.38	0.38	0.09	0.36	0.36
Sat Flow, veh/h	3442	3539	1583	3442	2885	622	1774	3539	1583	1774	3539	1548
Grp Volume(v), veh/h	178	121	0	182	183	184	146	280	128	117	962	418
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1738	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	3.1	1.8	0.0	3.1	5.9	6.1	4.9	3.3	3.4	4.0	14.6	12.7
Cycle Q Clear(g_c), s	3.1	1.8	0.0	3.1	5.9	6.1	4.9	3.3	3.4	4.0	14.6	12.7
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	573	256	277	289	284	184	1341	600	151	1275	683
V/C Ratio(X)	0.65	0.21	0.00	0.66	0.63	0.65	0.79	0.21	0.21	0.77	0.75	0.61
Avail Cap(c_a), veh/h	309	1038	465	309	519	510	217	1341	600	304	1500	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	22.3	0.0	27.4	24.0	24.0	26.8	12.9	12.9	27.5	17.2	13.2
Incr Delay (d2), s/veh	4.1	0.2	0.0	4.3	2.3	2.5	15.6	0.1	0.2	8.1	1.9	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.9	0.0	1.7	3.1	3.1	3.2	1.6	1.5	2.3	7.4	5.6
LnGrp Delay(d), s/veh	31.5	22.5	0.0	31.7	26.2	26.5	42.4	12.9	13.1	35.6	19.1	14.3
LnGrp LOS	C	C		C	C	C	D	B	B	D	B	B
Approach Vol, veh/h	299				549			554			1497	
Approach Delay, s/veh	27.9				28.2			20.7			19.1	
Approach LOS	C				C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s/7	27.7	9.4	14.4	10.9	26.6	9.4	14.5					
Change Period (Y+Rc), s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	23.0	5.5	18.0	7.5	26.0	5.5	18.0					
Max Q Clear Time (g_c+1/3), s	5.4	5.1	3.8	6.9	16.6	5.1	8.1					
Green Ext Time (p_c), s	0.1	2.0	0.0	0.5	0.0	5.5	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay					22.0							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	34	249	57	50	447	288	118	367	7	459	828	40
Future Volume (veh/h)	34	249	57	50	447	288	118	367	7	459	828	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	271	62	54	486	313	128	399	8	499	900	43
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	913	408	79	549	352	163	556	11	545	1279	61
Arrive On Green	0.04	0.26	0.26	0.04	0.27	0.27	0.09	0.16	0.16	0.31	0.37	0.37
Sat Flow, veh/h	3442	3539	1581	1774	2055	1319	1774	3547	71	1774	3439	164
Grp Volume(v), veh/h	37	271	62	54	418	381	128	199	208	499	463	480
Grp Sat Flow(s), veh/h/ln	1721	1770	1581	1774	1770	1605	1774	1770	1848	1774	1770	1834
Q Serve(g_s), s	0.8	4.7	2.3	2.3	17.5	17.6	5.4	8.2	8.2	20.9	17.1	17.1
Cycle Q Clear(g_c), s	0.8	4.7	2.3	2.3	17.5	17.6	5.4	8.2	8.2	20.9	17.1	17.1
Prop In Lane	1.00		1.00	1.00		0.82	1.00		0.04	1.00		0.09
Lane Grp Cap(c), veh/h	122	913	408	79	472	428	163	277	290	545	658	682
V/C Ratio(X)	0.30	0.30	0.15	0.68	0.89	0.89	0.78	0.72	0.72	0.92	0.70	0.70
Avail Cap(c_a), veh/h	223	974	435	122	494	448	297	413	432	633	749	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	23.0	22.1	36.3	27.1	27.1	34.2	30.9	30.9	25.7	20.6	20.6
Incr Delay (d2), s/veh	1.4	0.2	0.2	10.0	16.8	18.8	8.0	3.5	3.3	16.6	2.6	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	2.3	1.0	1.3	10.7	10.0	3.0	4.3	4.5	12.6	8.8	9.1
LnGrp Delay(d), s/veh	37.6	23.1	22.2	46.3	43.9	45.9	42.3	34.3	34.2	42.3	23.1	23.0
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		370			853			535			1442	
Approach Delay, s/veh		24.4			45.0			36.2			29.7	
Approach LOS		C			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s/7	24.4	11.6	33.2	7.2	25.1	28.2	16.6					
Change Period (Y+Rc), s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	21.2	12.9	32.6	5.0	21.5	27.5	18.0					
Max Q Clear Time (g_c+1/3), s	6.7	7.4	19.1	2.8	19.6	22.9	10.2					
Green Ext Time (p_c), s	0.0	1.6	0.1	5.1	0.0	1.0	0.8	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay					34.3							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔		↔	↔	↔
Traffic Volume (veh/h)	288	906	0	0	1736	209	0	0	0	278	0	586
Future Volume (veh/h)	288	906	0	0	1736	209	0	0	0	278	0	586
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	313	985	0	0	1887	227	0	0	0	302	0	637
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(V), veh/h	313	985	0	0	1887	227	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	3.1	0.0	0.0	75.1	17.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	3.1	0.0	0.0	75.1	17.5	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.09	0.29	0.00	0.00	0.64	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	37.1	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	80.7	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	1.5	0.0	0.0	36.9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	154.1	0.5	0.0	0.0	37.2	16.2	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1298				2114			0				
Approach Delay, s/veh	37.5				34.9			0.0				
Approach LOS	D				C							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	73.9				* 13	54.9		44.0				
Max Q Clear Time (g_c+1), s	5.1				15.3	77.1		0.0				
Green Ext Time (p_c), s	7.6				0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay					35.9							
HCM 2010 LOS					D							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	38	863	311	310	1507	140	268	288	318	66	349	95
Future Volume (veh/h)	38	863	311	310	1507	140	268	288	318	66	349	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	938	338	337	1638	152	291	313	346	72	379	103
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1380	617	236	1536	687	280	435	389	248	653	175
Arrive On Green	0.18	0.78	0.78	0.13	0.43	0.43	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2760	741
Grp Volume(V), veh/h	41	938	338	337	1638	152	291	313	346	72	241	241
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1732
Q Serve(g_s), s	3.2	19.9	13.1	21.3	69.4	9.6	13.0	25.9	33.7	3.2	19.3	19.7
Cycle Q Clear(g_c), s	3.2	19.9	13.1	21.3	69.4	9.6	13.0	25.9	33.7	3.2	19.3	19.7
Prop In Lane	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.43
Lane Grp Cap(c), veh/h	158	1380	617	236	1536	687	280	435	389	248	418	410
V/C Ratio(X)	0.26	0.68	0.55	1.43	1.07	0.22	1.04	0.72	0.89	0.29	0.58	0.59
Avail Cap(c_a), veh/h	188	1380	617	236	1536	687	280	542	485	258	531	520
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	13.0	12.2	69.3	45.3	28.4	73.5	55.3	58.2	70.4	54.0	54.2
Incr Delay (d2), s/veh	0.7	2.1	2.7	194.4	31.6	0.1	64.8	3.5	15.6	0.6	1.3	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	9.8	6.0	23.2	40.7	4.2	8.7	13.1	16.5	1.5	9.6	9.6
LnGrp Delay(d), s/veh	61.9	15.1	14.9	263.7	76.9	28.4	138.3	58.8	73.8	71.0	55.3	55.5
LnGrp LOS	E	B	B	F	F	C	F	E	E	E	E	E
Approach Vol, veh/h	1317				2127			950			554	
Approach Delay, s/veh	16.5				103.1			88.6			57.4	
Approach LOS	B				F			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	70.4	18.7	43.9	20.0	77.4	17.2	45.4				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	22.5	52.2	* 13	48.0	* 17	56.5	* 12	49.0				
Max Q Clear Time (g_c+1), s	21.9	15.0	21.7	5.2	71.4	5.2	35.7					
Green Ext Time (p_c), s	0.0	8.1	0.0	3.1	0.0	0.0	0.1	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay					72.1							
HCM 2010 LOS					E							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	154	866	227	190	1488	14	174	173	167	33	294	295
Future Volume (veh/h)	154	866	227	190	1488	14	174	173	167	33	294	295
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	941	247	207	1617	15	189	188	182	36	320	321
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1457	643	208	1558	14	280	436	377	115	407	359
Arrive On Green	0.10	0.41	0.41	0.12	0.43	0.43	0.08	0.25	0.25	0.06	0.23	0.23
Sat Flow, veh/h	1774	3539	1562	1774	3593	33	3442	1770	1529	1774	1770	1560
Grp Volume(v), veh/h	167	941	247	207	796	836	189	188	182	36	320	321
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1529	1774	1770	1560
Q Serve(g_s), s	15.0	34.1	17.7	18.7	69.4	69.4	8.5	14.3	16.3	3.1	27.2	31.9
Cycle Q Clear(g_c), s	15.0	34.1	17.7	18.7	69.4	69.4	8.5	14.3	16.3	3.1	27.2	31.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1457	643	208	767	805	280	436	377	115	407	359
V/C Ratio(X)	0.98	0.65	0.38	0.99	1.04	1.04	0.68	0.43	0.48	0.31	0.79	0.89
Avail Cap(c_a), veh/h	170	1457	643	208	767	805	286	487	420	144	483	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	0.54	0.47	0.47	0.47	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	37.7	32.9	70.5	45.3	45.3	71.5	50.8	51.5	71.4	57.9	59.7
Incr Delay (d2), s/veh	46.4	1.2	0.9	40.8	32.6	32.5	6.0	0.7	1.0	1.5	7.1	18.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	19.6	16.8	7.8	11.5	40.8	42.8	4.3	7.1	7.0	1.6	14.1	15.6
LnGrp Delay(d), s/veh	118.6	38.9	33.8	111.3	77.9	77.8	77.5	51.5	52.5	72.9	64.9	78.3
LnGrp LOS	F	D	C	F	F	F	E	D	D	E	E	E
Approach Vol, veh/h	1355			1839			559			677		
Approach Delay, s/veh	47.8			81.6			60.6			71.7		
Approach LOS	D			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.5	73.9	18.7	42.9	21.0	77.4	16.1	45.6				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	19.5	58.7	* 13	43.7	* 15	62.2	* 13	44.0				
Max Q Clear Time (g_c+Q), s	20.7	36.1	10.5	33.9	17.0	71.4	5.1	18.3				
Green Ext Time (p_c), s	0.0	7.1	0.2	2.9	0.0	0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				67.1								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	52	922	73	68	1533	62	71	89	122	82	142	73
Future Volume (veh/h)	52	922	73	68	1533	62	71	89	122	82	142	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	1002	79	74	1666	67	77	97	133	89	154	79
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2029	1031	128	2041	1029	271	216	183	253	206	283
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	57	1002	79	74	1666	67	77	97	133	89	154	79
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.9	27.0	2.9	6.5	60.3	2.5	3.4	7.8	13.0	3.9	12.8	7.0
Cycle Q Clear(g_c), s	4.9	27.0	2.9	6.5	60.3	2.5	3.4	7.8	13.0	3.9	12.8	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	2029	1031	128	2041	1029	271	216	183	253	206	283
V/C Ratio(X)	0.47	0.49	0.08	0.58	0.82	0.07	0.28	0.45	0.73	0.35	0.75	0.28
Avail Cap(c_a), veh/h	133	2029	1031	146	2041	1029	280	512	435	258	501	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	20.3	10.2	71.9	27.1	10.2	69.5	66.0	68.3	70.5	69.0	56.7
Incr Delay (d2), s/veh	2.0	0.6	0.1	4.2	3.8	0.1	0.6	1.5	5.4	0.8	5.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.5	13.3	1.3	3.3	30.4	1.1	1.6	4.1	5.9	1.9	6.9	3.1
LnGrp Delay(d), s/veh	73.6	20.9	10.3	76.1	30.9	10.3	70.0	67.4	73.6	71.3	74.3	57.2
LnGrp LOS	E	C	B	E	C	B	E	E	E	E	E	E
Approach Vol, veh/h	1138			1807			307			322		
Approach Delay, s/veh	22.8			31.9			70.8			69.3		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.3	99.7	18.3	24.7	16.7	100.3	17.5	25.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	13.5	64.4	* 13	43.0	* 12	65.6	* 12	44.0				
Max Q Clear Time (g_c+Q), s	13.5	29.0	5.4	14.8	6.9	62.3	5.9	15.0				
Green Ext Time (p_c), s	0.1	7.8	0.1	1.1	0.0	2.9	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				35.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml AM
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	450	695	41	546	1302	531	57	493	197	602	810	321
Future Volume (veh/h)	450	695	41	546	1302	531	57	493	197	602	810	321
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	489	755	45	593	1415	577	62	536	214	654	880	349
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	469	1189	476	631	1428	729	242	590	235	617	1235	767
Arrive On Green	0.14	0.23	0.23	0.18	0.28	0.28	0.07	0.24	0.24	0.18	0.35	0.35
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2463	979	3442	3539	1579
Grp Volume(v), veh/h	489	755	45	593	1415	577	62	385	365	654	880	349
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1672	1721	1770	1579
Q Serve(g_s), s	21.8	21.4	3.3	27.2	44.4	44.9	2.7	33.8	34.0	28.7	34.5	23.4
Cycle Q Clear(g_c), s	21.8	21.4	3.3	27.2	44.4	44.9	2.7	33.8	34.0	28.7	34.5	23.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.59	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	469	1189	476	631	1428	729	242	424	401	617	1235	767
V/C Ratio(X)	1.04	0.64	0.09	0.94	0.99	0.79	0.26	0.91	0.91	1.06	0.71	0.46
Avail Cap(c_a), veh/h	469	1189	476	631	1428	729	258	453	429	617	1276	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	55.2	39.9	64.5	57.3	36.7	70.4	59.1	59.2	65.7	45.1	27.2
Incr Delay (d2), s/veh	53.2	2.6	0.4	21.8	21.7	8.6	0.6	20.9	22.7	53.0	1.8	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	18.8	10.3	1.5	14.8	23.7	23.3	1.3	19.0	18.3	18.2	17.2	10.3
LnGrp Delay(d), s/veh	122.3	57.8	40.3	86.3	79.0	45.3	71.0	80.0	81.8	118.6	47.0	27.6
LnGrp LOS	F	E	D	F	E	D	E	F	F	F	D	C
Approach Vol, veh/h	1289			2585			812			1883		
Approach Delay, s/veh	81.6			73.1			80.1			68.3		
Approach LOS	F			E			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	45.4	16.9	62.6	27.5	52.9	34.4	45.2				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	34.4	* 12	57.7	* 22	42.3	* 29	41.0					
Max Q Clear Time (g_c+Q), s	23.4	4.7	36.5	23.8	46.9	30.7	36.0					
Green Ext Time (p_c), s	0.1	3.6	0.1	7.9	0.0	0.0	2.1					
Intersection Summary												
HCM 2010 Ctrl Delay				74.3								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\5. Existing + Cuml AM.syn

Synchro 9 Report

Existing + Cuml AM
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	9	879	589	749	1800	23	551	7	642	4	29	23
Future Volume (veh/h)	9	879	589	749	1800	23	551	7	642	4	29	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	955	640	814	1957	25	605	0	698	4	32	25
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	1230	955	566	1744	22	909	0	665	124	68	53
Arrive On Green	0.02	0.35	0.35	0.16	0.49	0.49	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1581	3442	3579	46	3548	0	1580	1774	971	758
Grp Volume(v), veh/h	10	955	640	814	966	1016	605	0	698	4	0	57
Grp Sat Flow(s), veh/h/ln	1774	1770	1581	1721	1770	1855	1774	0	1580	1774	0	1729
Q Serve(g_s), s	0.9	38.6	43.1	26.3	78.0	78.0	24.5	0.0	41.0	0.3	0.0	5.1
Cycle Q Clear(g_c), s	0.9	38.6	43.1	26.3	78.0	78.0	24.5	0.0	41.0	0.3	0.0	5.1
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.02	1.00	1.00	1.00	1.00	0.44	1.00
Lane Grp Cap(c), veh/h	44	1230	955	566	862	904	909	0	665	124	0	121
V/C Ratio(X)	0.23	0.78	0.67	1.44	1.12	1.12	0.67	0.00	1.05	0.03	0.00	0.47
Avail Cap(c_a), veh/h	122	1230	955	566	862	904	909	0	665	221	0	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.5	46.6	21.1	66.8	41.0	41.0	53.4	0.0	46.4	69.3	0.0	71.5
Incr Delay (d2), s/veh	2.6	4.9	3.7	207.4	69.2	70.5	1.8	0.0	48.6	0.1	0.0	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	19.7	29.3	28.8	54.7	57.6	12.2	0.0	38.3	0.2	0.0	2.5
LnGrp Delay(d), s/veh	79.1	51.5	24.8	274.3	110.2	111.5	55.2	0.0	95.0	69.5	0.0	74.4
LnGrp LOS	E	D	C	F	F	F	E		F	E		E
Approach Vol, veh/h	1605			2796			1303			61		
Approach Delay, s/veh	41.0			158.5			76.5			74.1		
Approach LOS	D			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	63.6		17.3	9.6	86.0		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	28.8	46.9		19.9	* 11	62.2		41.0				
Max Q Clear Time (g_c+Q), s	23.3	45.1		7.1	2.9	80.0		43.0				
Green Ext Time (p_c), s	0.0	1.4		0.2	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				106.4								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\5. Existing + Cuml AM.syn

Synchro 9 Report

Existing + Cuml AM
21: Melrose Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	477	705	239	73	1622	223	264	87	108	102	48	310
Future Volume (veh/h)	477	705	239	73	1622	223	264	87	108	102	48	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	518	766	260	79	1763	242	287	95	117	111	52	337
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
Arrive On Green	0.14	0.45	0.45	0.08	0.39	0.39	0.09	0.23	0.23	0.08	0.22	0.22
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1571	3442	3539	1566
Grp Volume(v), veh/h	518	766	260	79	1763	242	287	95	117	111	52	337
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1571	1721	1770	1566
Q Serve(g_s), s	22.3	15.6	14.5	3.5	51.7	15.5	13.3	3.4	8.9	4.9	1.9	27.9
Cycle Q Clear(g_c), s	22.3	15.6	14.5	3.5	51.7	15.5	13.3	3.4	8.9	4.9	1.9	27.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
V/C Ratio(X)	1.08	0.33	0.30	0.29	0.89	0.33	0.95	0.12	0.24	0.40	0.07	0.59
Avail Cap(c_a), veh/h	480	2296	853	280	1988	737	301	1084	606	280	1062	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	28.3	20.4	69.5	45.4	26.4	72.7	48.6	41.2	69.9	48.9	41.3
Incr Delay (d2), s/veh	64.3	0.4	0.9	0.6	6.3	1.2	39.3	0.1	0.3	0.9	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	14.9	7.4	6.6	1.7	25.3	6.9	8.0	1.7	3.9	2.4	0.9	12.2
LnGrp Delay(d), s/veh	133.2	28.7	21.3	70.1	51.8	27.6	112.0	48.7	41.4	70.8	48.9	42.3
LnGrp LOS	F	C	C	E	D	C	F	D	D	E	D	D
Approach Vol, veh/h	1544			2084			499			500		
Approach Delay, s/veh	62.5			49.7			83.4			49.3		
Approach LOS	E			D			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	58.3	79.7	19.7	42.3	28.0	70.0	18.6	43.4				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13.5	59.7	* 14	48.0	* 22	50.4	* 13	49.0				
Max Q Clear Time (g_c+1/3), s	17.6	15.3	29.9	24.3	53.7	6.9	10.9					
Green Ext Time (p_c), s	0.1	7.6	0.0	1.4	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				57.5								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\5. Existing + Cuml AM.syn

Synchro 9 Report

Existing + Cuml AM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	37	698	197	603	1398	10	320	14	272	3	67	88
Future Volume (veh/h)	37	698	197	603	1398	10	320	14	272	3	67	88
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	759	214	655	1520	11	359	0	296	3	73	96
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1535	478	699	2280	17	483	0	537	7	177	157
Arrive On Green	0.07	0.30	0.30	0.20	0.44	0.44	0.14	0.00	0.14	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5209	38	3548	0	1583	73	1786	1583
Grp Volume(v), veh/h	40	759	214	655	989	542	359	0	296	76	0	96
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1859	0	1583
Q Serve(g_s), s	2.2	12.2	10.9	18.7	23.2	23.2	9.7	0.0	13.6	3.8	0.0	5.8
Cycle Q Clear(g_c), s	2.2	12.2	10.9	18.7	23.2	23.2	9.7	0.0	13.6	3.8	0.0	5.8
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.02	1.00	1.00	1.00	0.04	1.00	1.00
Lane Grp Cap(c), veh/h	119	1535	478	699	1484	813	483	0	537	184	0	157
V/C Ratio(X)	0.34	0.49	0.45	0.94	0.67	0.67	0.74	0.00	0.55	0.41	0.00	0.61
Avail Cap(c_a), veh/h	177	1535	478	699	1484	813	483	0	537	186	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	28.6	28.2	39.2	22.3	22.3	41.5	0.0	26.9	42.3	0.0	43.2
Incr Delay (d2), s/veh	1.6	1.1	3.0	20.3	2.4	4.3	6.2	0.0	1.2	1.5	0.0	6.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	5.9	5.2	10.9	11.3	12.9	5.2	0.0	6.8	2.0	0.0	2.8
LnGrp Delay(d), s/veh	46.2	29.8	31.2	59.5	24.7	26.6	47.7	0.0	28.1	43.8	0.0	49.8
LnGrp LOS	D	C	C	E	C	C	D		C	D		D
Approach Vol, veh/h	1013			2186			655			172		
Approach Delay, s/veh	30.7			35.6			38.8			47.2		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	37.7		16.3	12.4	51.3		20.0				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	20.0	30.1		10.0	* 10	40.4		13.6				
Max Q Clear Time (g_c+1/3), s	14.2	14.2		7.8	4.2	25.2		15.6				
Green Ext Time (p_c), s	0.0	5.5		0.2	0.0	9.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				35.4								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\5. Existing + Cuml AM.syn

Synchro 9 Report

Existing + Cuml AM
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (veh/h)	78	58	125	54	77	35	65	554	15	30	1070	109
Future Volume (veh/h)	78	58	125	54	77	35	65	554	15	30	1070	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	78	136	59	84	38	71	602	16	33	1163	118
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	242	201	151	159	132	103	1586	709	63	1506	664
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.06	0.45	0.45	0.04	0.43	0.43
Sat Flow, veh/h	1774	1863	1547	1774	1863	1549	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	74	78	136	59	84	38	71	602	16	33	1163	118
Grp Sat Flow(s), veh/h/ln	1774	1863	1547	1774	1863	1549	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.3	2.3	5.0	1.9	2.6	1.4	2.3	6.7	0.3	1.1	16.8	2.8
Cycle Q Clear(g_c), s	2.3	2.3	5.0	1.9	2.6	1.4	2.3	6.7	0.3	1.1	16.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	242	201	151	159	132	103	1586	709	63	1506	664
V/C Ratio(X)	0.32	0.32	0.68	0.39	0.53	0.29	0.69	0.38	0.02	0.53	0.77	0.18
Avail Cap(c_a), veh/h	535	562	467	535	562	467	164	1786	798	175	1809	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	23.6	24.8	25.8	26.1	25.6	27.6	11.0	9.2	28.3	14.7	10.7
Incr Delay (d2), s/veh	0.8	0.8	4.0	1.6	2.7	1.2	8.0	0.2	0.0	6.7	1.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.2	1.2	2.3	1.0	1.4	0.6	1.4	3.3	0.1	0.6	8.4	1.2
LnGrp Delay(d), s/veh	24.4	24.3	28.7	27.5	28.9	26.8	35.6	11.1	9.2	35.0	16.4	10.8
LnGrp LOS	C	C	C	C	C	C	D	B	A	C	B	B
Approach Vol, veh/h	288				181			689			1314	
Approach Delay, s/veh	26.4				28.0			13.6			16.4	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.2			12.2	8.0	29.9		9.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.1			18.0	5.5	30.5		18.0				
Max Q Clear Time (g_c+I), s	8.7			7.0	4.3	18.8		4.6				
Green Ext Time (p_c), s	0.0	4.2		0.8	0.0	6.6		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				17.6								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\5. Existing + Cuml AM.syn

Synchro 9 Report

Existing + Cuml PM
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (veh/h)	129	69	53	75	51	10	96	328	79	45	807	328
Future Volume (veh/h)	129	69	53	75	51	10	96	328	79	45	807	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	75	58	82	55	11	104	357	86	49	877	357
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	125	97	227	332	65	134	2137	665	86	1391	564
Arrive On Green	0.08	0.13	0.13	0.07	0.11	0.11	0.08	0.42	0.42	0.05	0.39	0.39
Sat Flow, veh/h	3442	972	752	3442	2953	573	1774	5085	1583	1774	3539	1436
Grp Volume(v), veh/h	140	0	133	82	32	34	104	357	86	49	840	394
Grp Sat Flow(s), veh/h/ln	1721	0	1724	1721	1770	1756	1774	1695	1583	1774	1695	1585
Q Serve(g_s), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.3	1.8	1.4	10.7	10.7
Cycle Q Clear(g_c), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.3	1.8	1.4	10.7	10.7
Prop In Lane	1.00		0.44	1.00		0.33	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	282	0	222	227	199	198	134	2137	665	86	1333	623
V/C Ratio(X)	0.50	0.00	0.60	0.36	0.16	0.17	0.78	0.17	0.13	0.57	0.63	0.63
Avail Cap(c_a), veh/h	354	0	597	322	596	592	249	2137	665	206	1333	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	22.0	23.9	21.4	21.4	24.3	9.7	9.5	24.9	13.1	13.1
Incr Delay (d2), s/veh	1.4	0.0	2.6	1.0	0.4	0.4	9.3	0.2	0.4	5.9	2.3	4.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	0.0	2.0	0.6	0.5	0.5	1.8	1.1	0.8	0.8	5.3	5.4
LnGrp Delay(d), s/veh	24.8	0.0	24.6	24.8	21.8	21.8	33.5	9.8	9.9	30.7	15.3	17.9
LnGrp LOS	C		C	C	C	C	C	A	A	C	B	B
Approach Vol, veh/h	273				148			547			1283	
Approach Delay, s/veh	24.7				23.5			14.3			16.7	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	26.9	8.0	11.4	8.5	25.5	8.9	10.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.2	22.3	5.0	18.5	7.5	21.0	5.5	18.0				
Max Q Clear Time (g_c+I), s	3.4	4.3	3.2	5.9	5.1	12.7	4.1	2.9				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.5	0.0	5.0	0.1	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay					17.6							
HCM 2010 LOS					B							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	93	84	114	333	125	73	226	741	564	244	1016	66
Future Volume (veh/h)	93	84	114	333	125	73	226	741	564	244	1016	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	91	124	362	136	79	246	805	613	265	1104	72
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	376	305	418	275	160	276	1704	521	297	1226	536
Arrive On Green	0.07	0.20	0.20	0.12	0.25	0.25	0.16	0.34	0.34	0.17	0.35	0.35
Sat Flow, veh/h	1774	1863	1513	3442	1097	638	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	101	91	124	362	0	215	246	805	613	265	1104	72
Grp Sat Flow(s), veh/h/ln	1774	1863	1513	1721	0	1735	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	5.8	4.2	7.3	10.6	0.0	10.9	14.0	12.9	34.5	15.1	30.5	3.3
Cycle Q Clear(g_c), s	5.8	4.2	7.3	10.6	0.0	10.9	14.0	12.9	34.5	15.1	30.5	3.3
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	376	305	418	0	435	276	1704	521	297	1226	536
V/C Ratio(X)	0.79	0.24	0.41	0.87	0.00	0.49	0.89	0.47	1.18	0.89	0.90	0.13
Avail Cap(c_a), veh/h	231	651	529	418	0	591	284	1704	521	327	1272	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	34.5	35.7	44.4	0.0	33.0	42.6	27.1	34.2	42.0	32.0	23.1
Incr Delay (d2), s/veh	10.3	0.3	0.9	17.2	0.0	0.9	27.1	0.2	97.8	23.9	8.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	2.2	3.1	6.1	0.0	5.3	8.9	6.1	28.9	9.3	16.4	1.4
LnGrp Delay(d), s/veh	57.3	34.8	36.6	61.6	0.0	33.8	69.7	27.3	132.0	65.9	40.7	23.2
LnGrp LOS	E	C	D	E		C	E	C	F	E	D	C
Approach Vol, veh/h	316				577			1664			1441	
Approach Delay, s/veh	42.7				51.3			72.1			44.5	
Approach LOS	D				D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.7	39.0	17.0	25.3	20.5	40.2	11.9	30.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	34.5	34.5	12.5	36.0	16.5	37.0	13.4	35.1				
Max Q Clear Time (g_c+I), s	36.5	12.6	9.3	16.0	32.5	7.8	12.9					
Green Ext Time (p_c), s	0.2	0.0	0.0	0.9	0.0	2.9	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				56.8								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	15	675	7	7	445	4	28	0	10	5	1	26
Future Volume (veh/h)	15	675	7	7	445	4	28	0	10	5	1	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	734	0	8	484	4	30	0	11	5	1	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1269	568	19	1254	10	124	0	107	10	2	54
Arrive On Green	0.02	0.36	0.00	0.01	0.35	0.35	0.07	0.00	0.07	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3596	30	1774	0	1530	238	48	1331
Grp Volume(v), veh/h	16	734	0	8	238	250	30	0	11	34	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1856	1774	0	1530	1616	0	0
Q Serve(g_s), s	0.3	5.8	0.0	0.2	3.5	3.5	0.6	0.0	0.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	5.8	0.0	0.2	3.5	3.5	0.6	0.0	0.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.15		0.82
Lane Grp Cap(c), veh/h	37	1269	568	19	617	647	124	0	107	65	0	0
V/C Ratio(X)	0.44	0.58	0.00	0.42	0.39	0.39	0.24	0.00	0.10	0.52	0.00	0.00
Avail Cap(c_a), veh/h	257	2150	962	257	1075	1128	924	0	796	841	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.7	9.0	0.0	17.0	8.5	8.5	15.2	0.0	15.1	16.3	0.0	0.0
Incr Delay (d2), s/veh	8.0	0.4	0.0	14.2	0.4	0.4	1.0	0.0	0.4	6.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	2.8	0.0	0.1	1.7	1.8	0.3	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	24.8	9.4	0.0	31.2	8.9	8.8	16.2	0.0	15.5	22.6	0.0	0.0
LnGrp LOS	C	A		C	A	A	B		B	C		
Approach Vol, veh/h	750			496			41			34		
Approach Delay, s/veh	9.7			9.2			16.0			22.6		
Approach LOS	A			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.9	16.9		5.9	5.2	16.6		6.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	7.8	2.7		2.3	5.5	2.6						
Green Ext Time (p_c), s	0.0	4.2		0.1	0.0	2.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				10.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	525	317	47	47	66
Future Vol, veh/h	95	525	317	47	47	66
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	571	345	51	51	72

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	397	0	0	1149	372
Stage 1	-	-	-	372	-
Stage 2	-	-	-	777	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1162	-	-	219	674
Stage 1	-	-	-	697	-
Stage 2	-	-	-	453	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1161	-	-	199	673
Mov Cap-2 Maneuver	-	-	-	284	-
Stage 1	-	-	-	634	-
Stage 2	-	-	-	453	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1161	-	-	-	429
HCM Lane V/C Ratio	0.089	-	-	-	0.286
HCM Control Delay (s)	8.4	-	-	-	16.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2

Existing + Cuml PM
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	567	360	1	0	5
Future Vol, veh/h	6	567	360	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	616	391	1	0	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	392	0	0	1021	391
Stage 1	-	-	-	391	-
Stage 2	-	-	-	630	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1167	-	-	262	658
Stage 1	-	-	-	683	-
Stage 2	-	-	-	531	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1167	-	-	260	658
Mov Cap-2 Maneuver	-	-	-	260	-
Stage 1	-	-	-	679	-
Stage 2	-	-	-	531	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1167	-	-	-	658
HCM Lane V/C Ratio	0.006	-	-	-	0.008
HCM Control Delay (s)	8.1	-	-	-	10.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Existing + Cuml PM
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	550	313	13	19	47
Future Vol, veh/h	17	550	313	13	19	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	598	340	14	21	51

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	354	0	0 981 347
Stage 1	-	-	- 347 -
Stage 2	-	-	- 634 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1205	-	- 277 696
Stage 1	-	-	- 716 -
Stage 2	-	-	- 529 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1205	-	- 271 696
Mov Cap-2 Maneuver	-	-	- 271 -
Stage 1	-	-	- 700 -
Stage 2	-	-	- 529 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.1
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1205	-	-	-	271	696
HCM Lane V/C Ratio	0.015	-	-	-	0.076	0.073
HCM Control Delay (s)	8	0	-	-	19.4	10.6
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2

Existing + Cuml PM
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	509	256	13	16	57
Future Vol, veh/h	87	509	256	13	16	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	553	278	14	17	62

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	292	0	0 1028 285
Stage 1	-	-	- 285 -
Stage 2	-	-	- 743 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1270	-	- 259 754
Stage 1	-	-	- 763 -
Stage 2	-	-	- 470 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1270	-	- 231 754
Mov Cap-2 Maneuver	-	-	- 231 -
Stage 1	-	-	- 681 -
Stage 2	-	-	- 470 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.5
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1270	-	-	-	504
HCM Lane V/C Ratio	0.074	-	-	-	0.157
HCM Control Delay (s)	8.1	0	-	-	13.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Existing + Cuml PM
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	220	262	93	1884	1175	143		
Future Volume (veh/h)	220	262	93	1884	1175	143		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	239	285	101	2048	1277	155		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	365	325	139	2374	1915	857		
Arrive On Green	0.21	0.21	0.08	0.67	0.54	0.54		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	239	285	101	2048	1277	155		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	13.6	19.2	6.1	49.7	28.5	5.5		
Cycle Q Clear(g_c), s	13.6	19.2	6.1	49.7	28.5	5.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	365	325	139	2374	1915	857		
V/C Ratio(X)	0.66	0.88	0.73	0.86	0.67	0.18		
Avail Cap(c_a), veh/h	532	475	150	2374	1915	857		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.1	42.3	49.6	14.1	18.1	12.8		
Incr Delay (d2), s/veh	2.0	12.0	15.2	4.4	1.9	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	16.6	3.6	25.4	14.3	2.5		
LnGrp Delay(d),s/veh	42.1	54.3	64.7	18.6	20.0	13.3		
LnGrp LOS	D	D	E	B	B	B		
Approach Vol, veh/h	524			2149	1432			
Approach Delay, s/veh	48.8			20.8	19.3			
Approach LOS	D			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		81.3		28.7	14.3	67.0		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9.3	48.4		
Max Q Clear Time (g_c+I), s		51.7		21.2	8.1	30.5		
Green Ext Time (p_c), s		10.0		1.4	0.0	9.6		
Intersection Summary								
HCM 2010 Ctrl Delay			23.8					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↰
Traffic Volume (veh/h)	47	106	89	706	60	41	188	780	1242	38	767	37
Future Volume (veh/h)	47	106	89	706	60	41	188	780	1242	38	767	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	51	115	97	767	65	45	204	848	1350	41	834	40
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	388	167	873	251	174	239	1423	1780	64	1041	50
Arrive On Green	0.11	0.11	0.11	0.25	0.25	0.25	0.13	0.40	0.40	0.04	0.30	0.30
Sat Flow, veh/h	1774	3539	1527	3548	1019	705	1774	3539	2722	1774	3435	165
Grp Volume(v), veh/h	51	115	97	767	0	110	204	848	1350	41	430	444
Grp Sat Flow(s),veh/h/ln	1774	1770	1527	1774	0	1724	1774	1770	1361	1774	1770	1830
Q Serve(g_s), s	2.3	2.6	5.3	18.1	0.0	4.5	9.8	16.4	30.2	2.0	19.5	19.5
Cycle Q Clear(g_c), s	2.3	2.6	5.3	18.1	0.0	4.5	9.8	16.4	30.2	2.0	19.5	19.5
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	194	388	167	873	0	424	239	1423	1780	64	536	555
V/C Ratio(X)	0.26	0.30	0.58	0.88	0.00	0.26	0.85	0.60	0.76	0.64	0.80	0.80
Avail Cap(c_a), veh/h	366	731	315	956	0	465	258	1441	1794	102	564	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	35.7	36.9	31.6	0.0	26.5	36.9	20.5	10.7	41.5	28.0	28.0
Incr Delay (d2), s/veh	0.7	0.4	3.2	8.9	0.0	0.3	21.8	0.7	1.9	10.2	7.8	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.3	2.4	9.9	0.0	2.2	6.3	8.1	16.6	1.2	10.6	10.9
LnGrp Delay(d),s/veh	36.3	36.2	40.1	40.5	0.0	26.8	58.7	21.2	12.6	51.6	35.8	35.5
LnGrp LOS	D	D	D	D		C	E	C	B	D	D	D
Approach Vol, veh/h	263			877			2402				915	
Approach Delay, s/veh	37.6			38.8			19.6				36.4	
Approach LOS	D			D			B				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		39.5		14.0	16.3	30.9		26.0				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		35.5		18.0	12.7	27.8		23.5				
Max Q Clear Time (g_c+I), s		32.2		7.3	11.8	21.5		20.1				
Green Ext Time (p_c), s		0.0	2.9	0.8	0.1	2.9		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				27.9								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	108	908	8	23	686	85	2	4	30	72	4	93
Future Volume (veh/h)	108	908	8	23	686	85	2	4	30	72	4	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	117	987	9	25	746	92	2	4	33	78	4	101
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	1570	14	55	1174	145	177	224	236	392	15	242
Arrive On Green	0.10	0.44	0.44	0.03	0.37	0.37	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3593	33	1774	3160	389	275	1464	1539	1275	100	1583
Grp Volume(v), veh/h	117	486	510	25	418	420	6	0	33	82	0	101
Grp Sat Flow(s), veh/h/ln	1774	1770	1856	1774	1770	1780	1739	0	1539	1375	0	1583
Q Serve(g_s), s	2.3	7.6	7.6	0.5	6.9	6.9	0.0	0.0	0.7	1.8	0.0	2.1
Cycle Q Clear(g_c), s	2.3	7.6	7.6	0.5	6.9	6.9	0.1	0.0	0.7	1.9	0.0	2.1
Prop In Lane	1.00		0.02	1.00		0.22	0.33		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	171	773	811	55	657	661	401	0	236	408	0	242
V/C Ratio(X)	0.69	0.63	0.63	0.46	0.64	0.64	0.01	0.00	0.14	0.20	0.00	0.42
Avail Cap(c_a), veh/h	423	1168	1225	249	994	1000	972	0	778	889	0	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	7.8	7.8	17.0	9.2	9.2	12.8	0.0	13.1	13.6	0.0	13.6
Incr Delay (d2), s/veh	4.8	0.8	0.8	5.9	1.0	1.0	0.0	0.0	0.3	0.2	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.8	4.0	0.3	3.6	3.6	0.1	0.0	0.3	0.8	0.0	1.0	0.0
LnGrp Delay(d), s/veh	20.4	8.6	8.6	22.8	10.2	10.2	12.8	0.0	13.3	13.8	0.0	14.8
LnGrp LOS	C	A	A	C	B	B	B		B	B		B
Approach Vol, veh/h	1113			863			39			183		
Approach Delay, s/veh	9.8			10.6			13.2			14.3		
Approach LOS	A			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.1			10.0	7.9	17.7		10.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	8.5	20.0		18.0				
Max Q Clear Time (g_c+I), s	9.6			4.1	4.3	8.9		2.7				
Green Ext Time (p_c), s	0.0	5.5		0.6	0.1	4.1		0.1				

Intersection Summary

HCM 2010 Ctrl Delay 10.6
HCM 2010 LOS B

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	26	27	17	401	24	1033	18	397	431	1035	295	33
Future Volume (veh/h)	26	27	17	401	24	1033	18	397	431	1035	295	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	29	18	436	26	1123	20	432	468	1125	321	36
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	60	37	426	25	1488	36	893	794	988	1837	822
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.25	0.25	0.29	0.52	0.52
Sat Flow, veh/h	1774	1054	654	1679	100	2711	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	28	0	47	462	0	1123	20	432	468	1125	321	36
Grp Sat Flow(s), veh/h/ln	1774	0	1709	1779	0	1355	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	12.5	25.6	34.5	5.8	1.3
Cycle Q Clear(g_c), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	12.5	25.6	34.5	5.8	1.3
Prop In Lane	1.00		0.38	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	98	451	0	1488	36	893	794	988	1837	822
V/C Ratio(X)	0.28	0.00	0.48	1.02	0.00	0.75	0.56	0.48	0.59	1.14	0.17	0.04
Avail Cap(c_a), veh/h	487	0	469	451	0	1488	87	1001	842	988	1843	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	54.9	44.9	0.0	21.6	58.3	38.3	21.0	42.9	15.3	14.2
Incr Delay (d2), s/veh	1.5	0.0	3.6	48.5	0.0	2.2	12.8	0.4	1.0	75.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.9	0.0	1.6	21.0	0.0	14.8	0.8	6.2	15.7	26.6	2.8	0.6
LnGrp Delay(d), s/veh	55.7	0.0	58.5	93.4	0.0	23.9	71.1	38.7	22.0	117.8	15.3	14.3
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	75			1585			920			1482		
Approach Delay, s/veh	57.5			44.1			30.9			93.1		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0			34.8	11.4	6.9	66.9	35.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0			33.0	5.9	62.6		30.5				
Max Q Clear Time (g_c+I), s	27.6			5.2	3.3	7.8		32.5				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	2.5		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 59.2
HCM 2010 LOS E

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	1073	53	44	52	30	3	75	1236	46	9	788	717
Future Volume (veh/h)	1073	53	44	52	30	3	75	1236	46	9	788	717
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1166	58	0	57	33	3	82	1343	50	10	857	779
Adj No. of Lanes	2	1	1	0	1	1	2	0	1	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1218	659	560	75	43	103	105	1433	53	21	1291	2003
Arrive On Green	0.35	0.35	0.00	0.07	0.07	0.07	0.06	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1144	662	1583	1774	3480	129	1774	3539	2787
Grp Volume(v), veh/h	1166	58	0	90	0	3	82	682	711	10	857	779
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1806	0	1583	1774	1770	1840	1774	1770	1393
Q Serve(g_s), s	37.9	2.4	0.0	5.6	0.0	0.2	5.2	42.2	42.4	0.6	23.2	12.5
Cycle Q Clear(g_c), s	37.9	2.4	0.0	5.6	0.0	0.2	5.2	42.2	42.4	0.6	23.2	12.5
Prop In Lane	1.00		1.00	0.63		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	1218	659	560	118	0	103	105	729	758	21	1291	2003
V/C Ratio(X)	0.96	0.09	0.00	0.76	0.00	0.03	0.78	0.94	0.94	0.47	0.66	0.39
Avail Cap(c_a), veh/h	1230	666	566	284	0	249	194	744	773	78	1291	2003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	24.7	0.0	52.6	0.0	50.1	53.1	32.2	32.3	56.2	30.5	6.3
Incr Delay (d2), s/veh	16.5	0.1	0.0	9.8	0.0	0.1	12.0	18.9	18.8	15.6	1.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	20.8	1.2	0.0	3.1	0.0	0.1	2.9	24.5	25.5	0.4	11.5	10.9
LnGrp Delay(d), s/veh	52.6	24.7	0.0	62.5	0.0	50.2	65.1	51.2	51.0	71.8	31.8	6.4
LnGrp LOS	D	C		E		D	E	D	D	E	C	A
Approach Vol, veh/h	1224				93			1475			1646	
Approach Delay, s/veh	51.3				62.1			51.9			20.0	
Approach LOS	D				E			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	51.6			45.0	11.2	46.3		12.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	48.1			40.9	12.5	40.6		18.0				
Max Q Clear Time (g_c+I), s	44.4			39.9	7.2	25.2		7.6				
Green Ext Time (p_c), s	0.0	2.8		0.6	0.1	8.5		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				40.1								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	505	492	132	233	362	124	197	748	287	190	590	341
Future Volume (veh/h)	505	492	132	233	362	124	197	748	287	190	590	341
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	549	535	0	253	393	135	214	813	312	207	641	371
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	632	972	435	338	488	165	251	970	434	244	956	713
Arrive On Green	0.18	0.27	0.00	0.10	0.19	0.19	0.14	0.27	0.27	0.14	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	2577	873	1774	3539	1583	1774	3539	1564
Grp Volume(v), veh/h	549	535	0	253	268	260	214	813	312	207	641	371
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1680	1774	1770	1583	1774	1770	1564
Q Serve(g_s), s	12.9	10.8	0.0	6.0	12.1	12.4	9.8	18.1	14.9	9.5	13.5	14.2
Cycle Q Clear(g_c), s	12.9	10.8	0.0	6.0	12.1	12.4	9.8	18.1	14.9	9.5	13.5	14.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	632	972	435	338	335	318	251	970	434	244	956	713
V/C Ratio(X)	0.87	0.55	0.00	0.75	0.80	0.82	0.85	0.84	0.72	0.85	0.67	0.52
Avail Cap(c_a), veh/h	680	992	444	457	381	362	266	1059	474	266	1059	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	25.9	0.0	36.6	32.3	32.5	35.0	28.6	27.4	35.2	27.2	16.3
Incr Delay (d2), s/veh	11.1	0.6	0.0	4.5	10.3	12.2	21.9	5.7	4.8	20.8	1.4	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	17.1	5.4	0.0	3.1	6.8	6.8	6.3	9.6	7.0	6.1	6.8	6.2
LnGrp Delay(d), s/veh	44.2	26.5	0.0	41.2	42.6	44.7	56.9	34.3	32.2	56.0	28.6	16.9
LnGrp LOS	D	C		D	D	D	E	C	C	E	C	B
Approach Vol, veh/h	1084				781			1339			1219	
Approach Delay, s/veh	35.5				42.8			37.4			29.7	
Approach LOS	D				D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.0	27.4	12.7	27.4	16.3	27.1	19.8	20.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	42.5	25.0	11.1	23.4	12.5	25.0	16.5	18.0				
Max Q Clear Time (g_c+I), s	20.1	8.0	12.8	11.8	16.2	14.9	14.4					
Green Ext Time (p_c), s	0.1	2.8	0.3	2.6	0.0	3.8	0.4	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay					35.8							
HCM 2010 LOS					D							

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	207	735	140	39	351	380	182	649	6	265	555	33
Future Volume (veh/h)	207	735	140	39	351	380	182	649	6	265	555	33
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	225	799	152	42	382	413	198	705	7	288	603	36
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	1108	484	68	463	407	239	813	8	331	943	56
Arrive On Green	0.09	0.31	0.31	0.04	0.26	0.26	0.13	0.23	0.23	0.19	0.28	0.28
Sat Flow, veh/h	3442	3539	1545	1774	1770	1554	1774	3589	36	1774	3390	202
Grp Volume(v), veh/h	225	799	152	42	382	413	198	348	364	288	314	325
Grp Sat Flow(s), veh/h/ln	1721	1770	1545	1774	1770	1554	1774	1770	1855	1774	1770	1822
Q Serve(g_s), s	4.9	15.3	5.7	1.8	15.5	20.0	8.3	14.4	14.4	12.0	11.9	11.9
Cycle Q Clear(g_c), s	4.9	15.3	5.7	1.8	15.5	20.0	8.3	14.4	14.4	12.0	11.9	11.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	309	1108	484	68	463	407	239	401	420	331	492	507
V/C Ratio(X)	0.73	0.72	0.31	0.61	0.82	1.02	0.83	0.87	0.87	0.87	0.64	0.64
Avail Cap(c_a), veh/h	338	1108	484	116	463	407	295	417	437	383	505	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	23.3	20.0	36.2	26.5	28.2	32.2	28.4	28.4	30.2	24.2	24.2
Incr Delay (d2), s/veh	7.0	2.3	0.4	8.6	11.5	48.5	14.9	16.9	16.3	17.3	2.6	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.6	7.8	2.5	1.0	9.0	14.0	5.1	8.9	9.3	7.5	6.1	6.3
LnGrp Delay(d), s/veh	40.9	25.6	20.4	44.7	38.1	76.7	47.1	45.3	44.7	47.5	26.8	26.8
LnGrp LOS	D	C	C	D	D	F	D	D	D	D	C	C
Approach Vol, veh/h	1176				837			910			927	
Approach Delay, s/veh	27.9				57.5			45.5			33.2	
Approach LOS	C				E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s/7.4	28.4	14.8	25.8	11.4	24.5	18.7	21.8	
Change Period (Y+Rc), s/4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Max Green Setting (Gmax), s/22.5	22.5	12.7	21.8	7.5	20.0	16.5	18.0	
Max Q Clear Time (g_c+1), s/17.3	17.3	10.3	13.9	6.9	22.0	14.0	16.4	
Green Ext Time (p_c), s/0.0	0.0	2.7	0.1	2.4	0.1	0.0	0.2	0.7

Intersection Summary								
HCM 2010 Ctrl Delay					39.8			
HCM 2010 LOS					D			

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	600	1973	0	0	1363	246	0	0	0	250	0	362
Future Volume (veh/h)	600	1973	0	0	1363	246	0	0	0	250	0	362
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	652	2145	0	0	1482	267	0	0	0	272	0	393
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	522	3382	0	0	2733	1223	0	1	0	0	0	0
Arrive On Green	0.15	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	652	2145	0	0	1482	267	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	27.3	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.3	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	522	3382	0	0	2733	1223	0	1	0	0	0	0
V/C Ratio(X)	1.25	0.63	0.00	0.00	0.54	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	522	3382	0	0	2733	1223	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	76.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	127.3	0.9	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	22.2	5.8	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	203.7	1.4	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	2797				1749			0				
Approach Delay, s/veh	48.5				0.3			0.0				
Approach LOS	D				A							

Timer	1	2	3	4	5	6	7	8
Assigned Phs	2				5	6		8
Phs Duration (G+Y+Rc), s	180.0				33.0	147.0		0.0
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1
Max Green Setting (Gmax), s	92.9				* 27	59.9		44.0
Max Q Clear Time (g_c+1), s	14.3				29.3	2.0		0.0
Green Ext Time (p_c), s	35.0				0.0	20.8		0.0

Intersection Summary								
HCM 2010 Ctrl Delay					30.0			
HCM 2010 LOS					C			

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	74	1787	284	278	1143	123	252	344	279	101	258	57
Future Volume (veh/h)	74	1787	284	278	1143	123	252	344	279	101	258	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00	0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	80	1942	309	302	1242	134	274	374	303	110	280	62
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1564	700	210	1655	740	249	430	344	229	651	142
Arrive On Green	0.06	0.30	0.30	0.12	0.47	0.47	0.07	0.23	0.23	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1856	1483	3442	2884	628
Grp Volume(V), veh/h	80	1942	309	302	1242	134	274	356	321	110	170	172
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1569	1721	1770	1742
Q Serve(g_s), s	7.9	79.5	28.4	21.3	51.8	8.9	13.0	34.9	35.5	5.5	14.8	15.3
Cycle Q Clear(g_c), s	7.9	79.5	28.4	21.3	51.8	8.9	13.0	34.9	35.5	5.5	14.8	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.36
Lane Grp Cap(c), veh/h	164	1564	700	210	1655	740	249	410	364	229	400	393
V/C Ratio(X)	0.49	1.24	0.44	1.44	0.75	0.18	1.10	0.87	0.88	0.48	0.43	0.44
Avail Cap(c_a), veh/h	168	1564	700	210	1655	740	249	482	427	229	472	465
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	0.38	0.54	0.54	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	63.4	45.4	79.3	39.3	27.9	83.5	66.5	66.8	81.0	59.7	59.8
Incr Delay (d2), s/veh	0.9	111.0	0.8	211.4	1.7	0.3	87.2	14.0	17.1	1.6	0.7	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.9	63.1	12.6	22.8	25.8	3.9	9.2	18.6	17.1	2.7	7.4	7.4
LnGrp Delay(d), s/veh	81.1	174.3	46.1	290.8	41.0	28.2	170.7	80.5	83.8	82.6	60.4	60.6
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2331			1678			951			452		
Approach Delay, s/veh	154.1			85.0			107.6			65.9		
Approach LOS	F			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	87.5	18.7	46.8	22.4	92.2	17.7	47.8					
Change Period (Y+Rc), s	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1					
Max Green Setting (Gmax), s	72.2	* 13	48.0	* 17	76.5	* 12	49.0					
Max Q Clear Time (g_c+Q), s	81.5	15.0	17.3	9.9	53.8	7.5	37.5					
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.1	10.6	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay				117.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	207	1714	246	175	1217	14	196	260	200	10	107	131
Future Volume (veh/h)	207	1714	246	175	1217	14	196	260	200	10	107	131
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00	0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	225	1863	267	190	1323	15	213	283	217	11	116	142
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	2001	884	148	1893	21	251	345	256	54	242	216
Arrive On Green	0.12	0.57	0.57	0.08	0.53	0.53	0.07	0.18	0.18	0.03	0.14	0.14
Sat Flow, veh/h	1774	3539	1563	1774	3585	41	3442	1925	1428	1774	1770	1580
Grp Volume(V), veh/h	225	1863	267	190	653	685	213	259	241	11	116	142
Grp Sat Flow(s), veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1583	1774	1770	1580
Q Serve(g_s), s	21.7	86.9	16.1	15.0	49.7	49.7	11.0	25.4	26.5	1.1	10.9	15.3
Cycle Q Clear(g_c), s	21.7	86.9	16.1	15.0	49.7	49.7	11.0	25.4	26.5	1.1	10.9	15.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	214	2001	884	148	935	980	251	317	283	54	242	216
V/C Ratio(X)	1.05	0.93	0.30	1.29	0.70	0.70	0.85	0.82	0.85	0.20	0.48	0.66
Avail Cap(c_a), veh/h	214	2001	884	148	935	980	273	433	387	128	420	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.1	35.9	20.5	82.5	31.7	31.8	82.5	71.1	71.5	85.1	71.8	73.7
Incr Delay (d2), s/veh	34.0	1.1	0.1	160.7	3.2	3.1	20.5	8.7	12.3	1.8	1.5	3.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.7	42.7	6.9	14.0	25.1	26.3	5.9	13.2	12.6	0.6	5.4	6.9
LnGrp Delay(d), s/veh	113.1	36.9	20.6	243.2	35.0	34.8	102.9	79.7	83.9	86.9	73.2	77.1
LnGrp LOS	F	D	C	F	C	C	F	E	F	F	E	E
Approach Vol, veh/h	2355			1528			713			269		
Approach Delay, s/veh	42.4			60.8			88.1			75.8		
Approach LOS	D			E			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	80.7	109.8	18.8	30.7	27.4	103.1	11.2	38.3				
Change Period (Y+Rc), s	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1					
Max Green Setting (Gmax), s	82.5	* 14	42.7	* 22	75.8	* 13	44.0					
Max Q Clear Time (g_c+Q), s	88.9	13.0	17.3	23.7	51.7	3.1	28.5					
Green Ext Time (p_c), s	0.0	0.0	0.1	1.6	0.0	10.5	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay				56.7								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	53	1694	144	141	1245	75	81	161	172	39	79	39
Future Volume (veh/h)	53	1694	144	141	1245	75	81	161	172	39	79	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.97	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	58	1841	157	153	1353	82	88	175	187	42	86	42
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1966	991	148	2038	993	246	291	244	201	267	319
Arrive On Green	0.06	0.56	0.56	0.08	0.58	0.58	0.07	0.16	0.16	0.06	0.14	0.14
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1533
Grp Volume(v), veh/h	58	1841	157	153	1353	82	88	175	187	42	86	42
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1533
Q Serve(g_s), s	5.7	86.7	7.4	15.0	47.3	3.6	4.4	15.8	20.7	2.1	7.5	4.0
Cycle Q Clear(g_c), s	5.7	86.7	7.4	15.0	47.3	3.6	4.4	15.8	20.7	2.1	7.5	4.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	112	1966	991	148	2038	993	246	291	244	201	267	319
V/C Ratio(X)	0.52	0.94	0.16	1.03	0.66	0.08	0.36	0.60	0.77	0.21	0.32	0.13
Avail Cap(c_a), veh/h	118	1966	991	148	2038	993	249	455	382	229	445	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.7	37.1	13.9	82.5	26.2	12.7	79.7	70.8	72.8	80.8	69.3	58.3
Incr Delay (d2), s/veh	0.3	1.2	0.0	83.6	1.7	0.2	0.9	2.0	5.0	0.5	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	82.8	42.5	3.2	10.8	23.6	1.6	2.1	8.3	9.3	1.0	3.9	1.7
LnGrp Delay(d), s/veh	82.0	38.2	13.9	166.4	27.9	12.9	80.5	72.8	77.8	81.3	70.0	58.5
LnGrp LOS	F	D	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2056			1588			450			170		
Approach Delay, s/veh	37.6			40.5			76.4			69.9		
Approach LOS	D			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	108.0	18.5	32.8	17.0	111.6	16.2	35.1				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	11.5	82.6	* 13	43.0	* 12	85.6	* 12	44.0				
Max Q Clear Time (g_c+maxg), s	88.7	6.4	9.5	7.7	49.3	4.1	22.7					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	14.3	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				44.1								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	699	1374	74	302	971	664	68	1066	367	536	968	419
Future Volume (veh/h)	699	1374	74	302	971	664	68	1066	367	536	968	419
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.98	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	760	1493	80	328	1055	722	74	1159	399	583	1052	455
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	598	1497	569	273	1017	539	224	881	296	484	1471	920
Arrive On Green	0.17	0.29	0.29	0.08	0.20	0.20	0.07	0.34	0.34	0.14	0.42	0.42
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2591	872	3442	3539	1550
Grp Volume(v), veh/h	760	1493	80	328	1055	722	74	783	775	583	1052	455
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1693	1721	1770	1550
Q Serve(g_s), s	31.3	52.8	6.1	14.3	36.0	36.0	3.7	61.2	61.2	25.3	44.5	30.7
Cycle Q Clear(g_c), s	31.3	52.8	6.1	14.3	36.0	36.0	3.7	61.2	61.2	25.3	44.5	30.7
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	598	1497	569	273	1017	539	224	602	576	484	1471	920
V/C Ratio(X)	1.27	1.00	0.14	1.20	1.04	1.34	0.33	1.30	1.35	1.21	0.72	0.49
Avail Cap(c_a), veh/h	598	1497	569	273	1017	539	229	602	576	484	1471	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.3	63.4	38.9	82.8	72.0	59.3	80.4	59.4	59.4	77.3	43.7	21.5
Incr Delay (d2), s/veh	134.3	22.6	0.5	119.6	38.3	164.8	0.9	147.6	167.0	110.6	1.7	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	206.0	27.9	2.8	11.3	20.5	51.4	1.8	54.6	55.3	19.5	22.1	13.2
LnGrp Delay(d), s/veh	208.6	86.0	39.4	202.4	110.3	224.1	81.3	207.0	226.4	187.9	45.4	21.9
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2333			2105			1632			2090		
Approach Delay, s/veh	124.3			163.7			210.5			80.1		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	61.0	17.4	81.6	37.0	44.0	31.0	68.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	11.4	53.0	* 12	74.5	* 31	36.0	* 25	61.2				
Max Q Clear Time (g_c+maxg), s	54.8	5.7	46.5	33.3	38.0	27.3	63.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	11.3	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				140.4								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 			 		 	 	 
Traffic Volume (veh/h)	18	1775	487	428	1404	20	552	21	766	6	4	6
Future Volume (veh/h)	18	1775	487	428	1404	20	552	21	766	6	4	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	20	1929	529	465	1526	22	616	0	833	7	4	7
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1665	1096	407	1964	28	808	0	543	70	24	42
Arrive On Green	0.04	0.47	0.47	0.12	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3570	51	3548	0	1563	1774	600	1050
Grp Volume(v), veh/h	20	1929	529	465	756	792	616	0	833	7	0	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1721	1770	1852	1774	0	1563	1774	0	1650
Q Serve(g_s), s	2.0	84.7	27.8	21.3	60.3	60.5	29.2	0.0	41.0	0.7	0.0	1.2
Cycle Q Clear(g_c), s	2.0	84.7	27.8	21.3	60.3	60.5	29.2	0.0	41.0	0.7	0.0	1.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	69	1665	1096	407	974	1019	808	0	543	70	0	65
V/C Ratio(X)	0.29	1.16	0.48	1.14	0.78	0.78	0.76	0.00	1.53	0.10	0.00	0.17
Avail Cap(c_a), veh/h	108	1665	1096	407	974	1019	808	0	543	196	0	182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	84.1	47.7	12.4	79.3	31.8	31.8	64.9	0.0	58.9	83.3	0.0	83.6
Incr Delay (d2), s/veh	2.3	78.5	1.5	89.2	6.0	5.8	4.3	0.0	249.1	0.6	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	59.6	21.5	15.2	31.0	32.5	14.8	0.0	64.6	0.3	0.0	0.6
LnGrp Delay(d),s/veh	86.5	126.2	13.9	168.6	37.8	37.7	69.2	0.0	308.0	84.0	0.0	84.8
LnGrp LOS	F	F	B	F	D	D	E		F	F		F
Approach Vol, veh/h	2478			2013			1449			18		
Approach Delay, s/veh	101.9			68.0			206.5			84.5		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	92.7		13.2	12.7	107.0		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	21.3	71.9		19.9	* 11	82.2		41.0				
Max Q Clear Time (g_c+Q), s	23.3	86.7		3.2	4.0	62.5		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	9.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	115.8											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\6. Existing + Cuml PM.syn

Synchro 9 Report

Existing + Cuml PM
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 		 	 	
Traffic Volume (veh/h)	108	1717	399	44	1154	35	243	9	89	50	10	104
Future Volume (veh/h)	108	1717	399	44	1154	35	243	9	89	50	10	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	1866	434	48	1254	38	264	10	97	54	11	113
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	3186	1132	226	3154	1076	305	354	262	232	279	239
Arrive On Green	0.07	0.63	0.63	0.07	0.62	0.62	0.09	0.10	0.10	0.07	0.08	0.08
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	117	1866	434	48	1254	38	264	10	97	54	11	113
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	5.9	39.0	19.4	2.4	22.4	1.4	13.6	0.5	9.8	2.7	0.5	11.7
Cycle Q Clear(g_c), s	5.9	39.0	19.4	2.4	22.4	1.4	13.6	0.5	9.8	2.7	0.5	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	3186	1132	226	3154	1076	305	354	262	232	279	239
V/C Ratio(X)	0.47	0.59	0.38	0.21	0.40	0.04	0.87	0.03	0.37	0.23	0.04	0.47
Avail Cap(c_a), veh/h	250	3186	1132	249	3154	1076	369	1068	582	249	944	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.2	19.8	10.1	79.7	17.2	9.0	81.0	73.1	66.8	79.5	76.6	69.9
Incr Delay (d2), s/veh	1.4	0.8	1.0	0.5	0.4	0.1	16.6	0.0	0.9	0.5	0.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	18.4	8.7	1.1	10.6	0.6	7.2	0.2	4.4	1.3	0.3	5.2
LnGrp Delay(d),s/veh	81.6	20.6	11.1	80.1	17.6	9.1	97.6	73.2	67.6	80.0	76.7	71.4
LnGrp LOS	F	C	B	F	B	A	F	E	E	F	E	E
Approach Vol, veh/h	2417			1340			371			178		
Approach Delay, s/veh	21.9			19.6			89.1			74.3		
Approach LOS	C			B			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.5	120.3	21.6	20.6	18.7	119.1	17.8	24.4				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax),s	13.3	74.4	* 19	48.0	* 13	74.3	* 13	54.3				
Max Q Clear Time (g_c+Q),s	13.4	41.0	15.6	13.7	7.9	24.4	4.7	11.8				
Green Ext Time (p_c), s	0.0	22.1	0.3	0.4	0.1	10.7	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	29.1											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\6. Existing + Cuml PM.syn

Synchro 9 Report

Existing + Cuml PM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			   						 	
Traffic Volume (veh/h)	37	1673	230	584	917	6	163	26	288	16	31	63
Future Volume (veh/h)	37	1673	230	584	917	6	163	26	288	16	31	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	1818	250	635	997	7	197	0	313	17	34	68
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	2003	624	686	2771	19	384	0	487	50	100	129
Arrive On Green	0.06	0.39	0.39	0.20	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5210	37	3548	0	1583	611	1221	1583
Grp Volume(v), veh/h	40	1818	250	635	649	355	197	0	313	51	0	68
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1832	0	1583
Q Serve(g_s), s	2.6	40.5	13.6	21.7	13.3	13.3	6.3	0.0	13.0	3.2	0.0	4.9
Cycle Q Clear(g_c), s	2.6	40.5	13.6	21.7	13.3	13.3	6.3	0.0	13.0	3.2	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	109	2003	624	686	1803	987	384	0	487	150	0	129
V/C Ratio(X)	0.37	0.91	0.40	0.93	0.36	0.36	0.51	0.00	0.64	0.34	0.00	0.53
Avail Cap(c_a), veh/h	148	2003	624	697	1803	987	384	0	487	153	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	34.3	26.2	47.2	16.3	16.3	50.5	0.0	35.8	52.0	0.0	52.9
Incr Delay (d2), s/veh	2.1	7.5	1.9	18.2	0.6	1.0	1.2	0.0	2.9	1.3	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	20.2	6.3	12.1	6.4	7.1	3.2	0.0	9.4	1.7	0.0	2.3
LnGrp Delay(d),s/veh	56.1	41.8	28.1	65.4	16.8	17.3	51.7	0.0	38.7	53.4	0.0	56.5
LnGrp LOS	E	D	C	E	B	B	D		D	D		E
Approach Vol, veh/h	2108			1639			510			119		
Approach Delay, s/veh	40.4			35.7			43.7			55.2		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.6	54.8		16.2	13.1	71.3		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	46.7			10.0	* 10	61.0		13.0				
Max Q Clear Time (g_c+Qg), s	42.5			6.9	4.6	15.3		15.0				
Green Ext Time (p_c), s	0.2	3.7		0.1	0.0	8.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				39.5								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

Existing + Cuml PM
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	95	128	21	82	40	203	978	48	49	934	209
Future Volume (veh/h)	170	95	128	21	82	40	203	978	48	49	934	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	144	160	139	23	89	43	221	1063	52	53	1015	227
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	256	213	141	148	124	268	1603	693	85	1238	553
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.15	0.45	0.45	0.05	0.35	0.35
Sat Flow, veh/h	1774	1863	1552	1774	1863	1560	1774	3539	1530	1774	3539	1582
Grp Volume(v), veh/h	144	160	139	23	89	43	221	1063	52	53	1015	227
Grp Sat Flow(s),veh/h/ln	1774	1863	1552	1774	1863	1560	1774	1770	1530	1774	1770	1582
Q Serve(g_s), s	4.9	5.2	5.4	0.8	2.9	1.7	7.7	15.0	1.2	1.9	16.7	6.9
Cycle Q Clear(g_c), s	4.9	5.2	5.4	0.8	2.9	1.7	7.7	15.0	1.2	1.9	16.7	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	256	213	141	148	124	268	1603	693	85	1238	553
V/C Ratio(X)	0.59	0.62	0.65	0.16	0.60	0.35	0.83	0.66	0.08	0.63	0.82	0.41
Avail Cap(c_a), veh/h	501	526	438	501	526	440	320	1721	744	139	1360	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	25.9	26.0	27.4	28.4	27.8	26.2	13.6	9.9	29.8	18.9	15.7
Incr Delay (d2), s/veh	2.3	2.5	3.3	0.5	3.9	1.7	13.9	0.9	0.0	7.4	3.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	2.8	2.5	0.4	1.7	0.8	4.8	7.4	0.5	1.1	8.7	3.1
LnGrp Delay(d),s/veh	28.1	28.4	29.4	27.9	32.2	29.4	40.2	14.5	9.9	37.1	22.7	16.2
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	C	B
Approach Vol, veh/h	443			155			1336			1295		
Approach Delay, s/veh	28.6			30.8			18.6			22.2		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.4			13.3	14.1	26.8		9.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (G_max), s	31.0			18.0	11.5	24.5		18.0				
Max Q Clear Time (g_c+Qg), s	17.0			7.4	9.7	18.7		4.9				
Green Ext Time (p_c), s	0.0	6.6		1.4	0.1	3.6		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				22.0								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 9 Report

APPENDIX I

INTERSECTION ANALYSIS WORKSHEETS – EXISTING + NEAR-TERM CUMULATIVE PROJECTS + PROJECT

Existing + Cuml + Proj AM
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/05/2018

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖↗	↖	↗	↖↗	↖↗	↖	↖	↖↗	↖	↖↗	↖↗	↖	
Traffic Volume (veh/h)	435	22	78	139	83	51	48	956	50	13	280	30	
Future Volume (veh/h)	435	22	78	139	83	51	48	956	50	13	280	30	
Number	7	4	14	3	8	18	5	2	12	1	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	473	24	85	151	90	55	52	1039	54	14	304	33	
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	601	67	238	287	207	117	89	1914	594	31	1604	171	
Arrive On Green	0.17	0.19	0.19	0.08	0.10	0.10	0.05	0.38	0.38	0.02	0.34	0.34	
Sat Flow, veh/h	3442	361	1277	3442	2174	1235	1774	5085	1577	1774	4668	496	
Grp Volume(v), veh/h	473	0	109	151	72	73	52	1039	54	14	219	118	
Grp Sat Flow(s), veh/h/ln	1721	0	1637	1721	1770	1640	1774	1695	1577	1774	1695	1774	
Q Serve(g_s), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.6	1.2	0.4	2.4	2.5	
Cycle Q Clear(g_c), s	7.0	0.0	3.1	2.3	2.1	2.3	1.5	8.6	1.2	0.4	2.4	2.5	
Prop In Lane	1.00		0.78	1.00		0.75	1.00		1.00	1.00		0.28	
Lane Grp Cap(c), veh/h	601	0	305	287	168	156	89	1914	594	31	1165	610	
V/C Ratio(X)	0.79	0.00	0.36	0.53	0.43	0.47	0.58	0.54	0.09	0.45	0.19	0.19	
Avail Cap(c_a), veh/h	681	0	664	444	595	551	166	1914	594	166	1165	610	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	21.1	0.0	19.0	23.5	22.9	22.9	24.9	13.1	10.8	26.0	12.3	12.3	
Incr Delay (d2), s/veh	5.4	0.0	0.7	1.5	1.7	2.2	5.9	1.1	0.3	9.8	0.4	0.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.8	0.0	1.5	1.1	1.1	1.1	0.9	4.1	0.6	0.3	1.2	1.3	
LnGrp Delay(d),s/veh	26.6	0.0	19.7	25.0	24.6	25.1	30.8	14.2	11.1	35.9	12.7	13.1	
LnGrp LOS	C		B	C	C	C	C	B	B	D	B	B	
Approach Vol, veh/h	582			296			1145			351			
Approach Delay, s/veh	25.3			24.9			14.8			13.7			
Approach LOS	C			C			B			B			
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	24.7	9.0	14.5	7.2	22.9	13.9	9.6					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	5.0	18.4	6.9	21.7	5.0	18.4	10.6	18.0					
Max Q Clear Time (g_c+1), s	2.4	10.6	4.3	5.1	3.5	4.5	9.0	4.3					
Green Ext Time (p_c), s	0.0	4.3	0.1	0.5	0.0	1.7	0.3	0.6					
Intersection Summary													
HCM 2010 Ctrl Delay	18.5												
HCM 2010 LOS	B												

Existing + Cuml + Proj AM
2: N. River Rd & Vandegrift Blvd

North River Farms
06/05/2018

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↖	↖	↖↗	↖	↖	↖	↖↗	↖	↖↗	↖↗	↖	
Traffic Volume (veh/h)	43	48	113	689	50	231	95	854	375	120	735	36	
Future Volume (veh/h)	43	48	113	689	50	231	95	854	375	120	735	36	
Number	7	4	14	3	8	18	5	2	12	1	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	47	52	123	749	54	251	103	928	408	130	799	39	
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	67	332	272	759	103	480	131	1607	496	162	1180	528	
Arrive On Green	0.04	0.18	0.18	0.22	0.36	0.36	0.07	0.32	0.32	0.09	0.33	0.33	
Sat Flow, veh/h	1774	1863	1526	3442	286	1329	1774	5085	1570	1774	3539	1583	
Grp Volume(v), veh/h	47	52	123	749	0	305	103	928	408	130	799	39	
Grp Sat Flow(s), veh/h/ln	1774	1863	1526	1721	0	1615	1774	1695	1570	1774	1770	1583	
Q Serve(g_s), s	2.4	2.2	6.7	20.1	0.0	13.8	5.3	14.2	22.3	6.7	18.1	1.6	
Cycle Q Clear(g_c), s	2.4	2.2	6.7	20.1	0.0	13.8	5.3	14.2	22.3	6.7	18.1	1.6	
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	67	332	272	759	0	583	131	1607	496	162	1180	528	
V/C Ratio(X)	0.70	0.16	0.45	0.99	0.00	0.52	0.79	0.58	0.82	0.80	0.68	0.07	
Avail Cap(c_a), veh/h	166	722	591	759	0	831	200	1806	557	239	1333	596	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	44.2	32.3	34.1	36.1	0.0	23.4	42.3	26.6	29.4	41.4	26.7	21.2	
Incr Delay (d2), s/veh	12.4	0.2	1.2	29.2	0.0	0.7	10.9	0.4	8.8	11.5	1.2	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.4	1.1	2.9	12.6	0.0	6.2	3.0	6.7	10.8	3.8	9.0	0.7	
LnGrp Delay(d),s/veh	56.6	32.5	35.3	65.3	0.0	24.1	53.2	26.9	38.1	52.9	27.8	21.2	
LnGrp LOS	E	C	D	E		C	D	C	D	D	C	C	
Approach Vol, veh/h	222			1054			1439			968			
Approach Delay, s/veh	39.1			53.4			32.0			30.9			
Approach LOS	D			D			C			C			
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	3.0	33.9	25.0	21.1	11.3	35.5	8.0	38.1					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	3.0	33.0	20.5	36.0	10.5	35.0	8.7	47.8					
Max Q Clear Time (g_c+1), s	1.3	10.6	4.3	24.3	22.1	8.7	7.3	20.1	4.4	15.8			
Green Ext Time (p_c), s	0.1	5.0	0.0	0.7	0.1	5.0	0.0	2.2					
Intersection Summary													
HCM 2010 Ctrl Delay	38.3												
HCM 2010 LOS	D												

Existing + Cuml + Proj AM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲		↰	↱	↲	↰	↱
Traffic Volume (veh/h)	4	543	2	8	894	2	40	0	8	3	0	26
Future Volume (veh/h)	4	543	2	8	894	2	40	0	8	3	0	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	4	590	0	9	972	2	43	0	9	3	0	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	1408	630	21	1465	3	127	0	111	6	0	53
Arrive On Green	0.01	0.40	0.00	0.01	0.40	0.07	0.00	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3623	7	1774	0	1559	155	0	1445
Grp Volume(v), veh/h	4	590	0	9	475	499	43	0	9	31	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1861	1774	0	1559	1600	0	0
Q Serve(g_s), s	0.1	4.5	0.0	0.2	8.2	8.2	0.9	0.0	0.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.1	4.5	0.0	0.2	8.2	8.2	0.9	0.0	0.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.10		0.90
Lane Grp Cap(c), veh/h	10	1408	630	21	715	752	127	0	111	59	0	0
V/C Ratio(X)	0.41	0.42	0.00	0.43	0.66	0.66	0.34	0.00	0.08	0.53	0.00	0.00
Avail Cap(c_a), veh/h	238	1991	891	238	996	1047	855	0	752	772	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	8.1	0.0	18.3	9.1	9.1	16.5	0.0	16.2	17.7	0.0	0.0
Incr Delay (d2), s/veh	25.9	0.2	0.0	12.9	1.1	1.0	1.6	0.0	0.3	7.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	2.2	0.0	0.2	4.2	4.4	0.5	0.0	0.1	0.4	0.0	0.0
LnGrp Delay(d), s/veh	44.4	8.3	0.0	31.2	10.1	10.1	18.1	0.0	16.5	24.8	0.0	0.0
LnGrp LOS	D	A		C	B	B	B		B	C		
Approach Vol, veh/h	594			983			52			31		
Approach Delay, s/veh	8.6			10.3			17.8			24.8		
Approach LOS	A			B			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	19.3		5.9	4.7	19.6		7.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+1), s	2.5	6.5		2.7	2.1	10.2		2.9				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	4.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	10.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
4: N. River Rd & Leon St

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	350	740	45	67	101
Future Vol, veh/h	46	350	740	45	67	101
Conflicting Peds, #/hr	5	0	0	5	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	380	804	49	73	110
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	858	0	-	0	1314	836
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	480	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	783	-	-	-	174	367
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	779	-	-	-	161	365
Mov Cap-2 Maneuver	-	-	-	-	283	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	619	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		29.1		
HCM LOS	D					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	779	-	-	-	327	
HCM Lane V/C Ratio	0.064	-	-	-	0.558	
HCM Control Delay (s)	9.9	-	-	-	29.1	
HCM Lane LOS	A	-	-	-	D	
HCM 95th %tile Q(veh)	0.2	-	-	-	3.2	

HCM 2010 TWSC
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Synchro 10 Report

Existing + Cuml + Proj AM
5: N. River Rd & Stallion Dr

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	416	778	1	1	7
Future Vol, veh/h	3	416	778	1	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	452	846	1	1	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	847	0	0 1304 846
Stage 1	-	-	- 846 -
Stage 2	-	-	- 458 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	790	-	- 177 362
Stage 1	-	-	- 421 -
Stage 2	-	-	- 637 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	790	-	- 176 362
Mov Cap-2 Maneuver	-	-	- 176 -
Stage 1	-	-	- 419 -
Stage 2	-	-	- 637 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	790	-	-	-	320
HCM Lane V/C Ratio	0.004	-	-	-	0.027
HCM Control Delay (s)	9.6	-	-	-	16.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Existing + Cuml + Proj AM
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	349	393	9	24	111
Future Vol, veh/h	35	349	393	9	24	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	379	427	10	26	121

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	437	0	0 887 432
Stage 1	-	-	- 432 -
Stage 2	-	-	- 455 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1123	-	- 315 624
Stage 1	-	-	- 655 -
Stage 2	-	-	- 639 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1123	-	- 301 624
Mov Cap-2 Maneuver	-	-	- 301 -
Stage 1	-	-	- 627 -
Stage 2	-	-	- 639 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1123	-	-	-	524
HCM Lane V/C Ratio	0.034	-	-	-	0.28
HCM Control Delay (s)	8.3	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Existing + Cuml + Proj AM
8: SR-76 & N. River Rd

North River Farms
06/05/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	151	146	222	873	1725	229		
Future Volume (veh/h)	151	146	222	873	1725	229		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	164	159	241	949	1875	249		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	231	206	183	2544	1954	874		
Arrive On Green	0.13	0.13	0.10	0.72	0.55	0.55		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	164	159	241	949	1875	249		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	8.0	8.7	9.3	9.3	45.4	7.5		
Cycle Q Clear(g_c), s	8.0	8.7	9.3	9.3	45.4	7.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	231	206	183	2544	1954	874		
V/C Ratio(X)	0.71	0.77	1.31	0.37	0.96	0.28		
Avail Cap(c_a), veh/h	650	581	183	2544	1954	874		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.5	37.9	40.3	4.9	19.2	10.7		
Incr Delay (d2), s/veh	4.0	6.0	174.8	0.4	12.8	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.2	7.7	13.4	4.6	25.4	3.4		
LnGrp Delay(d),s/veh	41.5	43.9	215.2	5.3	32.0	11.5		
LnGrp LOS	D	D	F	A	C	B		
Approach Vol, veh/h	323			1190	2124			
Approach Delay, s/veh	42.7			47.8	29.6			
Approach LOS	D			D	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		72.2		17.8	15.0	57.2		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		43.4		33.0	* 9.3	28.4		
Max Q Clear Time (g_c+I1), s		11.3		10.7	11.3	47.4		
Green Ext Time (p_c), s		8.1		1.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			36.7					
HCM 2010 LOS			D					
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
9: Douglas Dr & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	70	184	1182	31	31	72	421	532	15	787	8
Future Volume (veh/h)	38	70	184	1182	31	31	72	421	532	15	787	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	41	76	200	1285	34	34	78	458	578	16	855	9
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	528	231	1308	315	315	98	1050	1835	31	930	10
Arrive On Green	0.15	0.15	0.15	0.37	0.37	0.06	0.30	0.30	0.30	0.02	0.26	0.26
Sat Flow, veh/h	1774	3539	1547	3548	856	856	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	41	76	200	1285	0	68	78	458	578	16	422	442
Grp Sat Flow(s), veh/h/ln	1774	1770	1547	1774	0	1712	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.2	2.0	13.5	38.4	0.0	2.8	4.7	11.2	9.7	1.0	24.8	24.8
Cycle Q Clear(g_c), s	2.2	2.0	13.5	38.4	0.0	2.8	4.7	11.2	9.7	1.0	24.8	24.8
Prop In Lane	1.00	1.00	1.00	1.00	0.50	1.00		1.00	1.00	1.00		0.02
Lane Grp Cap(c), veh/h	265	528	231	1308	0	631	98	1050	1835	31	459	481
V/C Ratio(X)	0.15	0.14	0.87	0.98	0.00	0.11	0.80	0.44	0.32	0.51	0.92	0.92
Avail Cap(c_a), veh/h	298	594	260	1308	0	631	98	1050	1835	83	472	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	39.6	44.6	33.5	0.0	22.2	50.0	30.4	7.6	52.2	38.6	38.6
Incr Delay (d2), s/veh	0.3	0.1	23.4	20.7	0.0	0.1	35.8	0.3	0.1	12.2	22.8	22.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	7.3	22.5	0.0	1.3	3.2	5.5	7.7	0.6	15.0	15.6
LnGrp Delay(d),s/veh	40.0	39.8	67.9	54.2	0.0	22.3	85.9	30.7	7.7	64.4	61.4	60.6
LnGrp LOS	D	D	E	D		C	F	C	A	E	E	E
Approach Vol, veh/h		317			1353			1114			880	
Approach Delay, s/veh		57.6			52.6			22.7			61.1	
Approach LOS		E			D			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s		36.3		20.5	10.4	32.3		44.0				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		29.5		18.0	5.9	28.6		39.5				
Max Q Clear Time (g_c+I1), s		13.2		15.5	6.7	26.8		40.4				
Green Ext Time (p_c), s	0.0	5.2		0.3	0.0	1.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay					46.0							
HCM 2010 LOS					D							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
10: Ave Descanso & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰	↱		↰	↱
Traffic Volume (veh/h)	45	475	3	10	891	56	5	3	21	84	0	98
Future Volume (veh/h)	45	475	3	10	891	56	5	3	21	84	0	98
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	49	516	3	11	968	61	5	3	23	91	0	107
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	1425	8	25	1218	77	109	42	525	135	0	536
Arrive On Green	0.05	0.40	0.40	0.01	0.36	0.36	0.34	0.34	0.34	0.34	0.00	0.34
Sat Flow, veh/h	1774	3607	21	1774	3375	213	0	123	1550	0	0	1583
Grp Volume(v), veh/h	49	253	266	11	508	521	8	0	23	91	0	107
Grp Sat Flow(s), veh/h/ln	1774	1770	1858	1774	1770	1818	124	0	1550	0	0	1583
Q Serve(g_s), s	1.4	5.4	5.4	0.3	13.7	13.8	0.0	0.0	0.5	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.4	5.4	5.4	0.3	13.7	13.8	18.1	0.0	0.5	18.1	0.0	2.6
Prop In Lane	1.00		0.01	1.00		0.12	0.62		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	699	734	25	639	656	151	0	525	135	0	536
V/C Ratio(X)	0.57	0.36	0.36	0.44	0.79	0.79	0.05	0.00	0.04	0.68	0.00	0.20
Avail Cap(c_a), veh/h	196	771	810	169	744	765	151	0	525	135	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	11.4	11.4	26.2	15.3	15.3	14.4	0.0	11.9	26.7	0.0	12.6
Incr Delay (d2), s/veh	5.9	0.3	0.3	11.7	5.2	5.1	0.1	0.0	0.0	12.6	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.7	2.8	0.2	7.5	7.7	0.1	0.0	0.2	1.8	0.0	1.1
LnGrp Delay(d),s/veh	30.8	11.7	11.7	37.8	20.5	20.4	14.6	0.0	11.9	39.4	0.0	12.7
LnGrp LOS	C	B	B	D	C	C	B		B	D		B
Approach Vol, veh/h	568			1040			31			198		
Approach Delay, s/veh	13.4			20.6			12.6			25.0		
Approach LOS	B			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	25.6		22.6	7.1	23.8		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	23.3		18.1	5.9	22.5		18.1				
Max Q Clear Time (g_c+I), s	12.3	7.4		20.1	3.4	15.8		20.1				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	3.6		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
11: College Blvd & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↰	↱	↰	↱
Traffic Volume (veh/h)	17	29	3	325	22	963	16	221	475	1113	367	27
Future Volume (veh/h)	17	29	3	325	22	963	16	221	475	1113	367	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	32	3	353	24	1047	17	240	516	1210	399	29
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	96	9	385	26	1459	32	953	784	1019	1938	867
Arrive On Green	0.06	0.06	0.06	0.23	0.23	0.23	0.02	0.27	0.27	0.30	0.55	0.55
Sat Flow, veh/h	1774	1672	157	1666	113	2738	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	18	0	35	377	0	1047	17	240	516	1210	399	29
Grp Sat Flow(s), veh/h/ln	1774	0	1829	1779	0	1369	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	6.6	30.6	36.5	7.1	1.0
Cycle Q Clear(g_c), s	1.2	0.0	2.3	25.5	0.0	28.5	1.2	6.6	30.6	36.5	7.1	1.0
Prop In Lane	1.00		0.09	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	101	0	105	412	0	1459	32	953	784	1019	1938	867
V/C Ratio(X)	0.18	0.00	0.33	0.92	0.00	0.72	0.54	0.25	0.66	1.19	0.21	0.03
Avail Cap(c_a), veh/h	475	0	490	412	0	1459	82	976	795	1019	1938	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	55.8	46.2	0.0	22.3	60.0	35.3	23.0	43.4	14.2	12.8
Incr Delay (d2), s/veh	0.8	0.0	1.9	25.0	0.0	1.7	13.3	0.1	2.0	94.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.2	15.4	0.0	13.9	0.7	3.2	17.9	30.6	3.4	0.5
LnGrp Delay(d),s/veh	56.2	0.0	57.7	71.2	0.0	24.0	73.3	35.4	25.0	137.6	14.3	12.9
LnGrp LOS	E		E	E		C	E	D	C	F	B	B
Approach Vol, veh/h	53			1424			773			1638		
Approach Delay, s/veh	57.2			36.5			29.3			105.3		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	1.0	37.7		11.6	6.7	72.0		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.3	34.0		33.0	5.7	64.8		28.5				
Max Q Clear Time (g_c+I), s	12.3	32.6		4.3	3.2	9.1		30.5				
Green Ext Time (p_c), s	0.0	0.6		0.2	0.0	3.1		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	64.3
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
12: Douglas Dr & El Camino Real

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱		↰	↑	↱	↰	↑	↱	↰	↑
Traffic Volume (veh/h)	395	22	46	54	50	1	36	712	22	13	1139	1067
Future Volume (veh/h)	395	22	46	54	50	1	36	712	22	13	1139	1067
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	429	24	0	59	54	1	39	774	24	14	1238	1160
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	602	326	277	81	74	136	72	1399	43	31	1331	1535
Arrive On Green	0.18	0.18	0.00	0.09	0.09	0.04	0.04	0.40	0.02	0.38	0.38	0.38
Sat Flow, veh/h	3442	1863	1583	948	868	1583	1774	3505	109	1774	3539	2787
Grp Volume(v), veh/h	429	24	0	113	0	1	39	391	407	14	1238	1160
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1815	0	1583	1774	1770	1844	1774	1770	1393
Q Serve(g_s), s	6.6	0.6	0.0	3.4	0.0	0.0	1.2	9.5	9.5	0.4	18.7	17.9
Cycle Q Clear(g_c), s	6.6	0.6	0.0	3.4	0.0	0.0	1.2	9.5	9.5	0.4	18.7	17.9
Prop In Lane	1.00		1.00	0.52		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	602	326	277	156	0	136	72	706	736	31	1331	1535
V/C Ratio(X)	0.71	0.07	0.00	0.73	0.00	0.01	0.54	0.55	0.55	0.45	0.93	0.76
Avail Cap(c_a), veh/h	1110	601	511	585	0	511	159	706	736	159	1332	1536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	19.2	0.0	24.9	0.0	23.3	26.3	12.9	12.9	27.2	16.7	9.6
Incr Delay (d2), s/veh	1.6	0.1	0.0	6.3	0.0	0.0	6.2	0.9	0.9	9.9	11.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.3	0.0	2.0	0.0	0.0	0.7	4.7	4.9	0.3	11.3	9.2
LnGrp Delay(d),s/veh	23.3	19.3	0.0	31.1	0.0	23.4	32.4	13.9	13.8	37.1	28.4	11.8
LnGrp LOS	C	B		C		C	C	B	B	D	C	B
Approach Vol, veh/h	453			114			837			2412		
Approach Delay, s/veh	23.1			31.1			14.7			20.5		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	26.8		14.3	6.8	25.5		9.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	11.5			8.6	3.2	20.7		5.4				
Green Ext Time (p_c), s	0.0	3.5		1.2	0.0	0.2		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	19.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
13: El Camino Real & Mission Ave

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	166	111	112	167	277	61	134	265	118	108	901	389
Future Volume (veh/h)	166	111	112	167	277	61	134	265	118	108	901	389
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	180	121	0	182	301	66	146	288	128	117	979	423
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	574	257	276	469	101	184	1349	603	151	1283	688
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.16	0.10	0.38	0.38	0.09	0.36	0.36
Sat Flow, veh/h	3442	3539	1583	3442	2885	622	1774	3539	1583	1774	3539	1548
Grp Volume(v), veh/h	180	121	0	182	183	184	146	288	128	117	979	423
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1738	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	3.1	1.8	0.0	3.2	6.0	6.1	5.0	3.4	3.4	4.0	15.1	13.0
Cycle Q Clear(g_c), s	3.1	1.8	0.0	3.2	6.0	6.1	5.0	3.4	3.4	4.0	15.1	13.0
Prop In Lane	1.00		1.00	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	574	257	276	288	283	184	1349	603	151	1283	688
V/C Ratio(X)	0.66	0.21	0.00	0.66	0.63	0.65	0.79	0.21	0.21	0.77	0.76	0.62
Avail Cap(c_a), veh/h	306	1030	461	306	515	506	215	1349	603	301	1488	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	22.5	0.0	27.6	24.2	24.2	27.1	12.9	12.9	27.7	17.4	13.2
Incr Delay (d2), s/veh	4.3	0.2	0.0	4.4	2.3	2.5	15.8	0.1	0.2	8.1	2.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.9	0.0	1.7	3.1	3.1	3.2	1.7	1.5	2.3	7.7	5.7
LnGrp Delay(d),s/veh	31.9	22.7	0.0	32.0	26.5	26.8	42.9	13.0	13.1	35.8	19.4	14.4
LnGrp LOS	C	C		C	C	C	D	B	B	D	B	B
Approach Vol, veh/h	301			549			562			1519		
Approach Delay, s/veh	28.2			28.4			20.8			19.3		
Approach LOS	C			C			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	28.1	9.5	14.5	10.9	26.9	9.4	14.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	11.5	23.0	5.5	18.0	7.5	26.0	5.5	18.0				
Max Q Clear Time (g_c+I), s	11.5	5.4	5.2	3.8	7.0	17.1	5.1	8.1				
Green Ext Time (p_c), s	0.1	2.1	0.0	0.5	0.0	5.4	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay	22.2											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
14: Douglas Dr & Mission Ave

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	37	249	57	50	447	291	118	375	7	467	848	48
Future Volume (veh/h)	37	249	57	50	447	291	118	375	7	467	848	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	40	271	62	54	486	316	128	408	8	508	922	52
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	913	408	78	542	351	163	560	11	551	1284	72
Arrive On Green	0.04	0.26	0.26	0.04	0.27	0.27	0.09	0.16	0.31	0.38	0.38	0.38
Sat Flow, veh/h	3442	3539	1581	1774	2047	1326	1774	3549	69	1774	3406	192
Grp Volume(v), veh/h	40	271	62	54	420	382	128	203	213	508	479	495
Grp Sat Flow(s), veh/h/ln	1721	1770	1581	1774	1770	1603	1774	1770	1848	1774	1770	1829
Q Serve(g_s), s	0.9	4.8	2.4	2.4	18.0	18.1	5.5	8.6	8.6	21.7	18.2	18.2
Cycle Q Clear(g_c), s	0.9	4.8	2.4	2.4	18.0	18.1	5.5	8.6	8.6	21.7	18.2	18.2
Prop In Lane	1.00	1.00	1.00	1.00	0.83	1.00	0.04	1.00	0.04	1.00	0.11	0.11
Lane Grp Cap(c), veh/h	128	913	408	78	469	425	163	279	292	551	667	689
V/C Ratio(X)	0.31	0.30	0.15	0.69	0.90	0.90	0.79	0.73	0.73	0.92	0.72	0.72
Avail Cap(c_a), veh/h	219	955	427	120	484	439	291	406	424	621	734	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	23.4	22.5	37.0	27.8	27.9	34.9	31.5	31.5	26.1	20.9	20.9
Incr Delay (d2), s/veh	1.4	0.2	0.2	10.3	18.6	20.7	8.1	3.6	3.5	18.1	3.1	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.4	1.1	1.4	11.2	10.4	3.1	4.5	4.7	13.4	9.3	9.6
LnGrp Delay(d), s/veh	38.2	23.6	22.7	47.4	46.4	48.5	43.0	35.1	35.0	44.2	24.0	23.9
LnGrp LOS	D	C	C	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h	373			856				544			1482	
Approach Delay, s/veh	25.0			47.4				36.9			30.9	
Approach LOS	C			D				D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	24.8	11.7	34.1	7.4	25.3	28.9	16.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	3.3	21.2	12.9	32.6	5.0	21.5	27.5	18.0				
Max Q Clear Time (g_c+1), s	4.6	6.8	7.5	20.2	2.9	20.1	23.7	10.6				
Green Ext Time (p_c), s	0.0	1.6	0.1	5.1	0.0	0.8	0.7	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay	35.6											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
15: SR-76 & Douglas Dr

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	918	0	0	1764	209	0	0	0	278	0	606
Future Volume (veh/h)	296	918	0	0	1764	209	0	0	0	278	0	606
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	322	998	0	0	1917	227	0	0	0	302	0	659
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	322	998	0	0	1917	227	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	3.1	0.0	0.0	76.6	17.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	3.1	0.0	0.0	76.6	17.5	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.13	0.30	0.00	0.00	0.65	0.17	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	37.6	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	91.4	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.0	0.0	37.6	7.7	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	164.7	0.5	0.0	0.0	37.7	16.2	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1320			2144				0				
Approach Delay, s/veh	40.6			35.4				0.0				
Approach LOS	D			D								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			5				8				
Phs Duration (G+Y+Rc), s	160.0			19.0				141.0				
Change Period (Y+Rc), s	8.0			* 5.7				8.0				
Max Green Setting (Gmax), s	73.9			* 13				54.9				
Max Q Clear Time (g_c+1), s	5.1			15.3				78.6				
Green Ext Time (p_c), s	7.8			0.0				0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	37.4											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
16: Rancho Del Oro Dr & SR-76

North River Farms
06/05/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	 
Traffic Volume (veh/h)	38	875	311	318	1535	140	268	288	321	66	349	95
Future Volume (veh/h)	38	875	311	318	1535	140	268	288	321	66	349	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	951	338	346	1668	152	291	313	349	72	379	103
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1374	614	236	1529	684	280	438	392	248	657	177
Arrive On Green	0.18	0.78	0.78	0.13	0.43	0.43	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2760	741
Grp Volume(v), veh/h	41	951	338	346	1668	152	291	313	349	72	241	241
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1732
Q Serve(g_s), s	3.2	20.8	13.3	21.3	69.1	9.6	13.0	25.9	34.0	3.2	19.3	19.7
Cycle Q Clear(g_c), s	3.2	20.8	13.3	21.3	69.1	9.6	13.0	25.9	34.0	3.2	19.3	19.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	158	1374	614	236	1529	684	280	438	392	248	421	412
V/C Ratio(X)	0.26	0.69	0.55	1.47	1.09	0.22	1.04	0.71	0.89	0.29	0.57	0.58
Avail Cap(c_a), veh/h	188	1374	614	236	1529	684	280	542	485	258	531	520
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	13.3	12.5	69.3	45.4	28.5	73.5	55.0	58.1	70.4	53.8	53.9
Incr Delay (d2), s/veh	0.7	2.2	2.7	211.4	42.0	0.1	64.8	3.4	15.9	0.6	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	6.1	24.3	42.7	4.2	8.7	13.1	16.7	1.5	9.5	9.6	9.6
LnGrp Delay(d),s/veh	61.9	15.5	15.2	280.8	87.4	28.6	138.3	58.4	74.0	71.0	55.0	55.2
LnGrp LOS	E	B	B	F	F	C	F	E	E	E	D	E
Approach Vol, veh/h	1330			2166				953			554	
Approach Delay, s/veh	16.9			114.2				88.5			57.2	
Approach LOS	B			F				F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	18.7	44.2	20.0	77.1	17.2	45.7					
Change Period (Y+Rc), s	5.7	8.0	5.7	6.1	5.7	8.0	5.7	6.1				
Max Green Setting (Gmax), s	52.2	13	48.0	17	56.5	12	49.0					
Max Q Clear Time (g_c+2.0), s	22.8	15.0	21.7	5.2	71.1	5.2	36.0					
Green Ext Time (p_c), s	0.0	8.2	0.0	3.1	0.0	0.0	0.1	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay	77.1											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
17: Old Grove Rd & SR-76

North River Farms
06/05/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	881	227	194	1524	14	174	173	169	33	294	295
Future Volume (veh/h)	154	881	227	194	1524	14	174	173	169	33	294	295
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	958	247	211	1657	15	189	188	184	36	320	321
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1413	624	232	1583	14	280	435	376	115	406	358
Arrive On Green	0.09	0.40	0.40	0.13	0.44	0.44	0.08	0.25	0.25	0.06	0.23	0.23
Sat Flow, veh/h	1774	3539	1562	1774	3594	33	3442	1770	1529	1774	1770	1560
Grp Volume(v), veh/h	167	958	247	211	815	857	189	188	184	36	320	321
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1529	1774	1770	1560
Q Serve(g_s), s	14.3	35.7	18.1	18.8	70.5	70.5	8.5	14.3	16.5	3.1	27.2	31.9
Cycle Q Clear(g_c), s	14.3	35.7	18.1	18.8	70.5	70.5	8.5	14.3	16.5	3.1	27.2	31.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	1413	624	232	779	818	280	435	376	115	406	358
V/C Ratio(X)	1.05	0.68	0.40	0.91	1.05	1.05	0.68	0.43	0.49	0.31	0.79	0.90
Avail Cap(c_a), veh/h	159	1413	624	253	779	818	301	487	420	144	476	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.43	0.43	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.8	39.6	34.3	68.6	44.8	44.8	71.5	50.9	51.7	71.4	58.0	59.8
Incr Delay (d2), s/veh	66.4	1.4	1.0	17.5	34.3	34.3	5.4	0.7	1.0	1.5	7.4	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	7.9	10.3	41.8	43.9	4.3	7.1	7.1	1.6	14.2	15.7	15.7
LnGrp Delay(d),s/veh	139.3	41.0	35.3	86.2	79.0	79.1	76.8	51.6	52.7	72.9	65.4	79.2
LnGrp LOS	F	D	D	F	F	F	E	D	D	E	E	E
Approach Vol, veh/h	1372			1883				561			677	
Approach Delay, s/veh	51.9			79.9				60.5			72.4	
Approach LOS	D			E				E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.6	71.9	18.7	42.8	20.0	78.5	16.1	45.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax),s	23	54.7	* 14	43.0	* 14	63.2	* 13	44.0				
Max Q Clear Time (g_c+2.0),s	20	37.7	10.5	33.9	16.3	72.5	5.1	18.5				
Green Ext Time (p_c), s	0.1	6.4	0.2	2.8	0.0	0.0	0.0	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	67.8											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
18: Frazee Rd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	939	73	68	1573	70	71	89	122	85	142	73
Future Volume (veh/h)	52	939	73	68	1573	70	71	89	122	85	142	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	1021	79	74	1710	76	77	97	133	92	154	79
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2029	1031	128	2041	1030	271	215	183	254	206	283
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	57	1021	79	74	1710	76	77	97	133	92	154	79
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.9	27.7	2.9	6.5	63.3	2.8	3.4	7.8	13.0	4.1	12.8	7.0
Cycle Q Clear(g_c), s	4.9	27.7	2.9	6.5	63.3	2.8	3.4	7.8	13.0	4.1	12.8	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	2029	1031	128	2041	1030	271	215	183	254	206	283
V/C Ratio(X)	0.47	0.50	0.08	0.58	0.84	0.07	0.28	0.45	0.73	0.36	0.75	0.28
Avail Cap(c_a), veh/h	133	2029	1031	146	2041	1030	280	512	435	258	501	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	20.5	10.2	71.9	27.8	10.3	69.5	66.0	68.3	70.5	69.0	56.7
Incr Delay (d2), s/veh	2.0	0.6	0.1	4.2	4.3	0.1	0.6	1.5	5.4	0.9	5.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	13.7	1.3	3.3	32.1	1.3	1.6	4.1	5.9	2.0	6.9	3.1
LnGrp Delay(d),s/veh	73.6	21.1	10.3	76.1	32.1	10.4	70.0	67.5	73.7	71.4	74.3	57.2
LnGrp LOS	E	C	B	E	C	B	E	E	E	E	E	E
Approach Vol, veh/h	1157			1860			307			325		
Approach Delay, s/veh	22.9			32.9			70.8			69.3		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	99.7	18.3	24.7	16.7	100.3	17.5	25.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	13	64.4	* 13	43.0	* 12	65.6	* 12	44.0				
Max Q Clear Time (g_c+I), s	13.5	29.7	5.4	14.8	6.9	65.3	6.1	15.0				
Green Ext Time (p_c), s	0.1	7.9	0.1	1.1	0.0	0.2	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	36.2											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
19: College Blvd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	695	41	546	1302	558	57	525	197	665	885	369
Future Volume (veh/h)	470	695	41	546	1302	558	57	525	197	665	885	369
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	511	755	45	593	1415	607	62	571	214	723	962	401
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	469	1157	466	631	1396	719	242	618	231	617	1257	777
Arrive On Green	0.14	0.23	0.23	0.18	0.27	0.27	0.07	0.25	0.25	0.18	0.36	0.36
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2511	939	3442	3539	1579
Grp Volume(v), veh/h	511	755	45	593	1415	607	62	402	383	723	962	401
Grp Sat Flow(s),veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1680	1721	1770	1579
Q Serve(g_s), s	21.8	21.6	3.3	27.2	43.9	43.9	2.7	35.5	35.6	28.7	38.5	27.7
Cycle Q Clear(g_c), s	21.8	21.6	3.3	27.2	43.9	43.9	2.7	35.5	35.6	28.7	38.5	27.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	469	1157	466	631	1396	719	242	435	413	617	1257	777
V/C Ratio(X)	1.09	0.65	0.10	0.94	1.01	0.84	0.26	0.92	0.93	1.17	0.77	0.52
Avail Cap(c_a), veh/h	469	1157	466	639	1396	719	258	453	431	617	1276	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	56.1	40.6	64.5	58.0	38.7	70.4	58.8	58.9	65.7	45.7	27.7
Incr Delay (d2), s/veh	68.0	2.9	0.4	21.8	27.4	11.7	0.6	24.1	25.6	93.5	2.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	10.4	1.5	14.8	24.1	26.0	1.3	20.2	19.5	21.6	19.3	12.2
LnGrp Delay(d),s/veh	137.1	58.9	41.0	86.3	85.5	50.3	71.0	82.9	84.5	159.1	48.5	28.3
LnGrp LOS	F	E	D	F	F	D	E	F	F	F	D	C
Approach Vol, veh/h	1311			2615			847			2086		
Approach Delay, s/veh	88.8			77.5			82.8			82.9		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.0	44.4	16.9	63.6	27.5	51.9	34.4	46.2				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	38	34.4	* 12	57.7	* 22	42.3	* 29	41.0				
Max Q Clear Time (g_c+I), s	39.2	23.6	4.7	40.5	23.8	45.9	30.7	37.6				
Green Ext Time (p_c), s	0.1	3.5	0.1	8.0	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	82.0											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
20: N. Santa Fe Ave & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	9	903	629	749	1810	23	568	7	642	4	29	23
Future Volume (veh/h)	9	903	629	749	1810	23	568	7	642	4	29	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	982	684	814	1967	25	623	0	698	4	32	25
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	1230	955	566	1744	22	909	0	665	124	68	53
Arrive On Green	0.02	0.35	0.35	0.16	0.49	0.49	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1581	3442	3579	45	3548	0	1580	1774	971	758
Grp Volume(v), veh/h	10	982	684	814	970	1022	623	0	698	4	0	57
Grp Sat Flow(s), veh/h/ln	1774	1770	1581	1721	1770	1855	1774	0	1580	1774	0	1729
Q Serve(g_s), s	0.9	40.1	48.4	26.3	78.0	78.0	25.3	0.0	41.0	0.3	0.0	5.1
Cycle Q Clear(g_c), s	0.9	40.1	48.4	26.3	78.0	78.0	25.3	0.0	41.0	0.3	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	44	1230	955	566	862	904	909	0	665	124	0	121
V/C Ratio(X)	0.23	0.80	0.72	1.44	1.13	1.13	0.69	0.00	1.05	0.03	0.00	0.47
Avail Cap(c_a), veh/h	122	1230	955	566	862	904	909	0	665	221	0	215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.5	47.1	22.1	66.8	41.0	41.0	53.7	0.0	46.4	69.3	0.0	71.5
Incr Delay (d2), s/veh	2.6	5.5	4.6	207.4	71.4	72.7	2.2	0.0	48.6	0.1	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	20.6	31.4	28.8	55.2	58.2	12.7	0.0	38.3	0.2	0.0	2.5
LnGrp Delay(d),s/veh	79.1	52.6	26.7	274.3	112.4	113.7	55.8	0.0	95.0	69.5	0.0	74.4
LnGrp LOS	E	D	C	F	F	F	E		F	E		E
Approach Vol, veh/h	1676			2806			1321			61		
Approach Delay, s/veh	42.2			159.8			76.5			74.1		
Approach LOS	D			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	63.6		17.3	9.6	86.0		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	26	46.9		19.9	* 11	62.2		41.0				
Max Q Clear Time (g_c+R), s	23.3	50.4		7.1	2.9	80.0		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	106.5											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
21: Melrose Dr & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↰
Traffic Volume (veh/h)	477	725	243	73	1630	223	266	87	108	102	48	310
Future Volume (veh/h)	477	725	243	73	1630	223	266	87	108	102	48	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	518	788	264	79	1772	242	289	95	117	111	52	337
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
Arrive On Green	0.14	0.45	0.45	0.08	0.39	0.39	0.09	0.23	0.23	0.08	0.22	0.22
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1571	3442	3539	1566
Grp Volume(v), veh/h	518	788	264	79	1772	242	289	95	117	111	52	337
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1571	1721	1770	1566
Q Serve(g_s), s	22.3	16.1	14.8	3.5	52.1	15.5	13.4	3.4	8.9	4.9	1.9	27.9
Cycle Q Clear(g_c), s	22.3	16.1	14.8	3.5	52.1	15.5	13.4	3.4	8.9	4.9	1.9	27.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	2296	853	271	1988	737	301	817	488	278	793	572
V/C Ratio(X)	1.08	0.34	0.31	0.29	0.89	0.33	0.96	0.12	0.24	0.40	0.07	0.59
Avail Cap(c_a), veh/h	480	2296	853	280	1988	737	301	1084	606	280	1062	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	28.5	20.4	69.5	45.6	26.4	72.7	48.6	41.2	69.9	48.9	41.3
Incr Delay (d2), s/veh	64.3	0.4	0.9	0.6	6.6	1.2	40.9	0.1	0.3	0.9	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	7.6	6.7	1.7	25.7	6.9	8.1	1.7	3.9	2.4	0.9	12.2
LnGrp Delay(d),s/veh	133.2	28.9	21.4	70.1	52.1	27.6	113.6	48.7	41.4	70.8	48.9	42.3
LnGrp LOS	F	C	C	E	D	C	F	D	D	E	D	D
Approach Vol, veh/h	1570			2093			501			500		
Approach Delay, s/veh	62.0			50.0			84.5			49.3		
Approach LOS	E			D			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.3	79.7	19.7	42.3	28.0	70.0	18.6	43.4				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13	59.7	* 14	48.0	* 22	50.4	* 13	49.0				
Max Q Clear Time (g_c+R), s	13.5	18.1	15.4	29.9	24.3	54.1	6.9	10.9				
Green Ext Time (p_c), s	0.1	7.8	0.0	1.4	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	57.7											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰ ↱ ↱	↱ ↱ ↱	↰	↰ ↱ ↱ ↱	↱ ↱ ↱ ↱		↰	↱ ↱	↰		↱ ↱	
Traffic Volume (veh/h)	37	710	205	643	1403	18	323	14	289	6	67	88
Future Volume (veh/h)	37	710	205	643	1403	18	323	14	289	6	67	88
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	772	223	699	1525	20	362	0	314	7	73	96
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh. %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1509	470	737	2295	30	461	0	545	16	168	157
Arrive On Green	0.07	0.30	0.30	0.21	0.44	0.44	0.13	0.00	0.13	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5173	68	3548	0	1583	162	1692	1583
Grp Volume(v), veh/h	40	772	223	699	999	546	362	0	314	80	0	96
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1851	1774	0	1583	1855	0	1583
Q Serve(g_s), s	2.2	12.6	11.5	20.0	23.3	23.3	9.9	0.0	13.0	4.1	0.0	5.8
Cycle Q Clear(g_c), s	2.2	12.6	11.5	20.0	23.3	23.3	9.9	0.0	13.0	4.1	0.0	5.8
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.09		1.00
Lane Grp Cap(c), veh/h	119	1509	470	737	1504	821	461	0	545	184	0	157
V/C Ratio(X)	0.34	0.51	0.47	0.95	0.66	0.66	0.78	0.00	0.58	0.43	0.00	0.61
Avail Cap(c_a), veh/h	177	1509	470	737	1504	821	461	0	545	185	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	29.2	28.8	38.8	21.9	21.9	42.1	0.0	26.8	42.4	0.0	43.2
Incr Delay (d2), s/veh	1.6	1.2	3.4	21.6	2.3	4.2	8.7	0.0	1.5	1.6	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.0	5.5	11.7	11.3	12.8	5.4	0.0	7.3	2.2	0.0	2.8
LnGrp Delay(d),s/veh	46.2	30.4	32.2	60.3	24.3	26.2	50.8	0.0	28.3	44.0	0.0	49.8
LnGrp LOS	D	C	C	E	C	C	D		C	D		D
Approach Vol, veh/h	1035			2244			676			176		
Approach Delay, s/veh	31.4			36.0			40.4			47.2		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.1	37.2		16.3	12.4	51.9		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.6			10.0	* 10	41.0		13.0				
Max Q Clear Time (g_c+Q2), s	14.6			7.8	4.2	25.3		15.0				
Green Ext Time (p_c), s	0.0	5.5		0.2	0.0	9.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	36.0											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
23: College Blvd & Frazee Rd

North River Farms
06/05/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	58	125	54	77	35	65	584	15	30	1141	109
Future Volume (veh/h)	78	58	125	54	77	35	65	584	15	30	1141	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	78	136	59	84	38	71	635	16	33	1240	118
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	239	199	150	157	131	101	1623	726	62	1545	682
Arrive On Green	0.13	0.13	0.13	0.08	0.08	0.08	0.06	0.46	0.46	0.04	0.44	0.44
Sat Flow, veh/h	1774	1863	1547	1774	1863	1549	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	74	78	136	59	84	38	71	635	16	33	1240	118
Grp Sat Flow(s),veh/h/ln	1774	1863	1547	1774	1863	1549	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.3	2.3	5.2	1.9	2.7	1.4	2.4	7.3	0.3	1.1	18.7	2.8
Cycle Q Clear(g_c), s	2.3	2.3	5.2	1.9	2.7	1.4	2.4	7.3	0.3	1.1	18.7	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	239	199	150	157	131	101	1623	726	62	1545	682
V/C Ratio(X)	0.32	0.33	0.68	0.39	0.53	0.29	0.70	0.39	0.02	0.53	0.80	0.17
Avail Cap(c_a), veh/h	520	546	454	520	546	454	159	1735	776	171	1758	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	24.3	25.6	26.6	26.9	26.4	28.4	11.0	9.1	29.1	15.0	10.5
Incr Delay (d2), s/veh	0.8	0.8	4.1	1.7	2.8	1.2	8.4	0.2	0.0	6.9	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	2.4	1.0	1.5	0.6	1.4	3.6	0.1	0.7	9.5	1.2
LnGrp Delay(d),s/veh	25.1	25.1	29.7	28.3	29.7	27.6	36.8	11.1	9.1	36.0	17.5	10.7
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h	288			181			722			1391		
Approach Delay, s/veh	27.3			28.8			13.6			17.3		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	32.7				12.4	8.0	31.3	9.7				
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.1				18.0	5.5	30.5	18.0				
Max Q Clear Time (g_c+I2), s	9.3				7.2	4.4	20.7	4.7				
Green Ext Time (p_c), s	0.0	4.4			0.8	0.0	6.1	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	18.2											
HCM 2010 LOS	B											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj AM
25: Main Access & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	25	350	37	13	560	8	87	0	31	20	0	59
Future Volume (veh/h)	25	350	37	13	560	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	380	40	14	609	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1270	568	33	1216	544	405	0	239	433	0	239
Arrive On Green	0.03	0.36	0.36	0.02	0.34	0.34	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	380	40	14	609	9	95	0	34	22	0	64
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.4	2.2	0.5	0.2	3.9	0.1	1.9	0.0	0.5	0.4	0.0	1.0
Cycle Q Clear(g_c), s	0.4	2.2	0.5	0.2	3.9	0.1	3.0	0.0	0.5	0.9	0.0	1.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	60	1270	568	33	1216	544	405	0	239	433	0	239
V/C Ratio(X)	0.45	0.30	0.07	0.43	0.50	0.02	0.23	0.00	0.14	0.05	0.00	0.27
Avail Cap(c_a), veh/h	310	2904	1299	310	2904	1299	1041	0	995	1086	0	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	6.6	6.0	13.9	7.5	6.2	12.1	0.0	10.5	10.9	0.0	10.7
Incr Delay (d2), s/veh	5.2	0.1	0.1	8.7	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	0.2	0.2	1.9	0.0	0.7	0.0	0.2	0.2	0.0	0.5
LnGrp Delay(d),s/veh	18.8	6.7	6.1	22.6	7.8	6.2	12.4	0.0	10.8	11.0	0.0	11.3
LnGrp LOS	B	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h	447			632			129			86		
Approach Delay, s/veh	7.4			8.1			11.9			11.3		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.8			8.8	5.5	14.3		8.8				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+1), s	4.2			3.0	2.4	5.9		5.0				
Green Ext Time (p_c), s	0.0	2.5		0.3	0.0	3.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	8.4											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	129	69	53	75	51	10	96	348	79	45	848	328
Future Volume (veh/h)	129	69	53	75	51	10	96	348	79	45	848	328
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	75	58	82	55	11	104	378	86	49	922	357
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	125	97	227	332	65	134	2137	665	86	1413	546
Arrive On Green	0.08	0.13	0.13	0.07	0.11	0.11	0.08	0.42	0.42	0.05	0.39	0.39
Sat Flow, veh/h	3442	972	752	3442	2953	573	1774	5085	1583	1774	3595	1389
Grp Volume(v), veh/h	140	0	133	82	32	34	104	378	86	49	869	410
Grp Sat Flow(s), veh/h/ln	1721	0	1724	1721	1770	1756	1774	1695	1583	1774	1695	1594
Q Serve(g_s), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.5	1.8	1.4	11.2	11.2
Cycle Q Clear(g_c), s	2.1	0.0	3.9	1.2	0.9	0.9	3.1	2.5	1.8	1.4	11.2	11.2
Prop In Lane	1.00	0.44	1.00	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87
Lane Grp Cap(c), veh/h	282	0	222	227	199	198	134	2137	665	86	1333	627
V/C Ratio(X)	0.50	0.00	0.60	0.36	0.16	0.17	0.78	0.18	0.13	0.57	0.65	0.65
Avail Cap(c_a), veh/h	354	0	597	322	596	592	249	2137	665	206	1333	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	22.0	23.9	21.4	21.4	24.3	9.7	9.5	24.9	13.2	13.2
Incr Delay (d2), s/veh	1.4	0.0	2.6	1.0	0.4	0.4	9.3	0.2	0.4	5.9	2.5	5.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.0	0.6	0.5	0.5	1.8	1.2	0.8	0.8	5.7	5.8
LnGrp Delay(d),s/veh	24.8	0.0	24.6	24.8	21.8	21.8	33.5	9.9	9.9	30.7	15.7	18.5
LnGrp LOS	C		C	C	C	C	C	A	A	C	B	B
Approach Vol, veh/h	273			148			568			1328		
Approach Delay, s/veh	24.7			23.5			14.2			17.1		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	26.9	8.0	11.4	8.5	25.5	8.9	10.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.2	22.3	5.0	18.5	7.5	21.0	5.5	18.0				
Max Q Clear Time (g_c+1), s	3.4	4.5	3.2	5.9	5.1	13.2	4.1	2.9				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.5	0.0	4.9	0.1	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	17.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
2: N. River Rd & Vandegrift Blvd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	93	84	114	499	125	93	226	741	894	285	1016	66
Future Volume (veh/h)	93	84	114	499	125	93	226	741	894	285	1016	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	91	124	542	136	101	246	805	972	310	1104	72
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	373	303	410	243	181	275	1671	511	321	1254	548
Arrive On Green	0.07	0.20	0.20	0.12	0.25	0.25	0.16	0.33	0.33	0.18	0.35	0.35
Sat Flow, veh/h	1774	1863	1512	3442	985	731	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	101	91	124	542	0	237	246	805	972	310	1104	72
Grp Sat Flow(s), veh/h/ln	1774	1863	1512	1721	0	1716	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	5.9	4.3	7.5	12.5	0.0	12.7	14.3	13.3	34.5	18.2	30.7	3.3
Cycle Q Clear(g_c), s	5.9	4.3	7.5	12.5	0.0	12.7	14.3	13.3	34.5	18.2	30.7	3.3
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	373	303	410	0	424	275	1671	511	321	1254	548
V/C Ratio(X)	0.79	0.24	0.41	1.32	0.00	0.56	0.89	0.48	1.90	0.97	0.88	0.13
Avail Cap(c_a), veh/h	226	639	518	410	0	574	279	1671	511	321	1254	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	35.3	36.6	46.3	0.0	34.5	43.5	28.1	35.3	42.7	31.8	23.0
Incr Delay (d2), s/veh	10.4	0.3	0.9	161.6	0.0	1.2	28.3	0.2	412.9	41.0	7.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	2.3	3.2	15.1	0.0	6.1	9.1	6.2	73.5	12.6	16.3	1.4
LnGrp Delay(d),s/veh	58.3	35.7	37.5	207.9	0.0	35.7	71.8	28.3	448.2	83.7	39.4	23.1
LnGrp LOS	E	D	D	F		D	E	C	F	F	D	C
Approach Vol, veh/h	316			779			2023			1486		
Approach Delay, s/veh	43.6			155.5			235.4			47.8		
Approach LOS	D			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.5	39.0	17.0	25.5	20.8	41.7	12.1	30.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	19.5	34.5	12.5	36.0	16.5	37.0	13.4	35.1				
Max Q Clear Time (g_c+1.2), s	20.2	36.5	14.5	9.5	16.3	32.7	7.9	14.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	2.8	0.1	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay	148.1											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	15	1045	7	10	632	4	28	0	15	5	1	26
Future Volume (veh/h)	15	1045	7	10	632	4	28	0	15	5	1	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	1136	0	11	687	4	30	0	16	5	1	28
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1533	686	25	1541	9	127	0	109	9	2	52
Arrive On Green	0.02	0.43	0.00	0.01	0.43	0.43	0.07	0.00	0.07	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3607	21	1774	0	1524	238	48	1331
Grp Volume(v), veh/h	16	1136	0	11	337	354	30	0	16	34	0	0
Grp Sat Flow(s), veh/h/ln	1774	1583	1774	1770	1858	1774	0	1524	1616	0	0	0
Q Serve(g_s), s	0.4	10.9	0.0	0.3	5.5	5.5	0.7	0.0	0.4	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.4	10.9	0.0	0.3	5.5	5.5	0.7	0.0	0.4	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.15		0.82
Lane Grp Cap(c), veh/h	36	1533	686	25	756	794	127	0	109	63	0	0
V/C Ratio(X)	0.44	0.74	0.00	0.43	0.45	0.45	0.24	0.00	0.15	0.54	0.00	0.00
Avail Cap(c_a), veh/h	218	1823	815	218	911	957	783	0	673	713	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.7	9.6	0.0	19.9	8.3	8.3	17.9	0.0	17.8	19.2	0.0	0.0
Incr Delay (d2), s/veh	8.3	1.4	0.0	11.1	0.4	0.4	0.9	0.0	0.6	6.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.5	0.0	0.2	2.7	2.8	0.3	0.0	0.2	0.5	0.0	0.0
LnGrp Delay(d),s/veh	28.1	11.0	0.0	31.0	8.7	8.7	18.8	0.0	18.4	26.1	0.0	0.0
LnGrp LOS	C	B		C	A	A	B		B	C		
Approach Vol, veh/h	1152			702			46			34		
Approach Delay, s/veh	11.2			9.0			18.7			26.1		
Approach LOS	B			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	22.2		6.1	5.3	21.9		7.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+1.2), s	12.9	28.2		2.8	2.4	7.5		2.7				
Green Ext Time (p_c), s	0.0	4.7		0.1	0.0	3.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	10.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
4: N. River Rd & Leon St

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	900	506	50	52	66
Future Vol, veh/h	95	900	506	50	52	66
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	978	550	54	57	72

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	605	0	-	0	1762
Stage 1	-	-	-	-	578
Stage 2	-	-	-	-	1184
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	973	-	-	-	93
Stage 1	-	-	-	-	561
Stage 2	-	-	-	-	290
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	972	-	-	-	83
Mov Cap-2 Maneuver	-	-	-	-	152
Stage 1	-	-	-	-	501
Stage 2	-	-	-	-	290

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	33.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	972	-	-	-	251
HCM Lane V/C Ratio	0.106	-	-	-	0.511
HCM Control Delay (s)	9.1	-	-	-	33.4
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.7

Existing + Cuml + Proj PM
5: N. River Rd & Stallion Dr

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	947	552	1	0	5
Future Vol, veh/h	6	947	552	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1029	600	1	0	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	601	0	-	0	1643
Stage 1	-	-	-	-	600
Stage 2	-	-	-	-	1043
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	976	-	-	-	110
Stage 1	-	-	-	-	548
Stage 2	-	-	-	-	339
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	976	-	-	-	109
Mov Cap-2 Maneuver	-	-	-	-	109
Stage 1	-	-	-	-	544
Stage 2	-	-	-	-	339

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	976	-	-	-	501
HCM Lane V/C Ratio	0.007	-	-	-	0.011
HCM Control Delay (s)	8.7	-	-	-	12.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Existing + Cuml + Proj PM
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/05/2018

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	↰
Traffic Vol, veh/h	95	565	368	13	16	72
Future Vol, veh/h	95	565	368	13	16	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	614	400	14	17	78

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	414	0	-	0	1227
Stage 1	-	-	-	-	407
Stage 2	-	-	-	-	820
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1145	-	-	-	197
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	433
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1145	-	-	-	170
Mov Cap-2 Maneuver	-	-	-	-	170
Stage 1	-	-	-	-	580
Stage 2	-	-	-	-	433

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1145	-	-	-	427
HCM Lane V/C Ratio	0.09	-	-	-	0.224
HCM Control Delay (s)	8.5	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

Existing + Cuml + Proj PM
8: SR-76 & N. River Rd

North River Farms
06/05/2018

	EBL	EBR	NBL	NBT	SBT	SBR
Movement	↰	↰	↰	↰	↰	↰
Lane Configurations						
Traffic Volume (veh/h)	246	293	154	1892	1190	194
Future Volume (veh/h)	246	293	154	1892	1190	194
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	267	318	167	2057	1293	211
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	401	358	150	2301	1819	814
Arrive On Green	0.23	0.23	0.08	0.65	0.51	0.51
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	267	318	167	2057	1293	211
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583
Q Serve(g_s), s	15.1	21.4	9.3	53.4	30.8	8.2
Cycle Q Clear(g_c), s	15.1	21.4	9.3	53.4	30.8	8.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	401	358	150	2301	1819	814
V/C Ratio(X)	0.67	0.89	1.11	0.89	0.71	0.26
Avail Cap(c_a), veh/h	532	475	150	2301	1819	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	41.2	50.3	16.1	20.5	15.0
Incr Delay (d2), s/veh	1.9	14.9	107.2	5.9	2.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	18.6	9.0	27.6	15.5	3.7
LnGrp Delay(d),s/veh	40.7	56.1	157.5	21.9	22.9	15.8
LnGrp LOS	D	E	F	C	C	B
Approach Vol, veh/h	585			2224	1504	
Approach Delay, s/veh	49.1			32.1	21.9	
Approach LOS	D			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		79.0		31.0	15.0	64.0		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9.3	48.4		
Max Q Clear Time (g_c+1), s		55.4		23.4	11.3	32.8		
Green Ext Time (p_c), s		7.1		1.5	0.0	9.1		

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C
Notes	

Existing + Cuml + Proj PM
9: Douglas Dr & N. River Rd

North River Farms
06/05/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	47	106	89	744	60	41	188	780	1318	38	767	37
Future Volume (veh/h)	47	106	89	744	60	41	188	780	1318	38	767	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	51	115	97	809	65	45	204	848	1433	41	834	40
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	385	166	897	258	178	239	1415	1793	64	1034	50
Arrive On Green	0.11	0.11	0.11	0.25	0.25	0.25	0.13	0.40	0.40	0.04	0.30	0.30
Sat Flow, veh/h	1774	3539	1527	3548	1019	705	1774	3539	2722	1774	3435	165
Grp Volume(v), veh/h	51	115	97	809	0	110	204	848	1433	41	430	444
Grp Sat Flow(s), veh/h/ln	1774	1770	1527	1774	0	1724	1774	1770	1361	1774	1770	1830
Q Serve(g_s), s	2.3	2.7	5.4	19.6	0.0	4.5	10.0	16.8	34.3	2.0	19.9	19.9
Cycle Q Clear(g_c), s	2.3	2.7	5.4	19.6	0.0	4.5	10.0	16.8	34.3	2.0	19.9	19.9
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	193	385	166	897	0	436	239	1415	1793	64	533	551
V/C Ratio(X)	0.26	0.30	0.58	0.90	0.00	0.25	0.85	0.60	0.80	0.65	0.81	0.81
Avail Cap(c_a), veh/h	360	718	310	939	0	456	254	1415	1793	100	554	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	36.4	37.7	32.1	0.0	26.5	37.6	21.0	11.3	42.2	28.6	28.6
Incr Delay (d2), s/veh	0.7	0.4	3.2	11.5	0.0	0.3	22.8	0.7	2.7	10.4	8.3	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.3	2.4	11.0	0.0	2.2	6.4	8.3	18.0	1.2	10.9	11.2
LnGrp Delay(d),s/veh	37.0	36.9	40.9	43.6	0.0	26.8	60.3	21.7	14.0	52.7	37.0	36.7
LnGrp LOS	D	D	D	D		C	E	C	B	D	D	D
Approach Vol, veh/h	263			919			2485			915		
Approach Delay, s/veh	38.4			41.6			20.4			37.5		
Approach LOS	D			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	40.0		14.2	16.4	31.2		26.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	35.5		18.0	12.7	27.8		23.5				
Max Q Clear Time (g_c+1), s	14.5	36.3		7.4	12.0	21.9		21.6				
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	2.7		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	29.1											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
10: Ave Descanso & N. River Rd

North River Farms
06/05/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 					 		
Traffic Volume (veh/h)	108	984	8	23	724	85	2	4	30	72	4	93
Future Volume (veh/h)	108	984	8	23	724	85	2	4	30	72	4	93
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	117	1070	9	25	787	92	2	4	33	78	4	101
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1617	14	54	1226	143	173	219	230	383	15	237
Arrive On Green	0.10	0.45	0.45	0.03	0.39	0.39	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3596	30	1774	3181	372	275	1464	1538	1275	100	1583
Grp Volume(v), veh/h	117	527	552	25	438	441	6	0	33	82	0	101
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	1770	1784	1739	0	1538	1375	0	1583
Q Serve(g_s), s	2.3	8.5	8.5	0.5	7.4	7.4	0.0	0.0	0.7	1.8	0.0	2.1
Cycle Q Clear(g_c), s	2.3	8.5	8.5	0.5	7.4	7.4	0.1	0.0	0.7	1.9	0.0	2.1
Prop In Lane	1.00		0.02	1.00		0.21	0.33		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	169	796	835	54	682	687	392	0	230	398	0	237
V/C Ratio(X)	0.69	0.66	0.66	0.46	0.64	0.64	0.02	0.00	0.14	0.21	0.00	0.43
Avail Cap(c_a), veh/h	413	1139	1195	243	970	977	948	0	759	867	0	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	7.9	7.9	17.4	9.2	9.2	13.2	0.0	13.5	14.0	0.0	14.1
Incr Delay (d2), s/veh	5.0	0.9	0.9	5.9	1.0	1.0	0.0	0.0	0.3	0.3	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.3	4.5	0.3	3.7	3.7	0.1	0.0	0.3	0.8	0.0	1.0
LnGrp Delay(d),s/veh	21.0	8.8	8.8	23.3	10.2	10.2	13.3	0.0	13.8	14.3	0.0	15.3
LnGrp LOS	C	A	A	C	B	B	B		B	B		B
Approach Vol, veh/h	1196			904			39			183		
Approach Delay, s/veh	10.0			10.5			13.7			14.8		
Approach LOS	A			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	20.9		10.0	8.0	18.6		10.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	23.5		18.0	8.5	20.0		18.0				
Max Q Clear Time (g_c+1), s	12.5	10.5		4.1	4.3	9.4		2.7				
Green Ext Time (p_c), s	0.0	5.8		0.6	0.1	4.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	10.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
11: College Blvd & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	27	17	401	24	1287	18	473	431	1163	333	33
Future Volume (veh/h)	26	27	17	401	24	1287	18	473	431	1163	333	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	29	18	436	26	1399	20	514	468	1264	362	36
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	60	37	425	25	1484	36	898	796	986	1840	823
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.25	0.25	0.29	0.52	0.52
Sat Flow, veh/h	1774	1054	654	1679	100	2710	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	28	0	47	462	0	1399	20	514	468	1264	362	36
Grp Sat Flow(s), veh/h/ln	1774	0	1709	1779	0	1355	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	15.3	25.6	34.5	6.6	1.3
Cycle Q Clear(g_c), s	1.8	0.0	3.2	30.5	0.0	30.5	1.3	15.3	25.6	34.5	6.6	1.3
Prop In Lane	1.00	0.38	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	102	0	98	450	0	1484	36	898	796	986	1840	823
V/C Ratio(X)	0.28	0.00	0.48	1.03	0.00	0.94	0.56	0.57	0.59	1.28	0.20	0.04
Avail Cap(c_a), veh/h	486	0	468	450	0	1484	87	999	840	986	1840	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	0.0	55.1	45.0	0.0	26.2	58.5	39.2	20.9	43.0	15.5	14.2
Incr Delay (d2), s/veh	1.5	0.0	3.6	49.2	0.0	12.3	12.8	0.6	1.0	134.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.6	21.0	0.0	24.2	0.8	7.6	15.7	34.8	3.2	0.6
LnGrp Delay(d),s/veh	55.9	0.0	58.7	94.2	0.0	38.5	71.3	39.9	21.9	177.9	15.5	14.2
LnGrp LOS	E		E	F		D	E	D	C	F	B	B
Approach Vol, veh/h	75			1861				1002			1662	
Approach Delay, s/veh	57.6			52.3				32.1			139.0	
Approach LOS	E			D				C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	35.1		11.4	6.9	67.1		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0	34.0		33.0	5.9	62.6		30.5				
Max Q Clear Time (g_c+H), s	27.6	27.6		5.2	3.3	8.6		32.5				
Green Ext Time (p_c), s	0.0	2.9		0.3	0.0	2.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	79.3											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
12: Douglas Dr & El Camino Real

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1103	53	44	52	30	3	75	1282	46	9	811	732
Future Volume (veh/h)	1103	53	44	52	30	3	75	1282	46	9	811	732
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1199	58	0	57	33	3	82	1393	50	10	882	796
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1216	658	559	74	43	103	104	1444	52	21	1299	2008
Arrive On Green	0.35	0.35	0.00	0.07	0.07	0.07	0.06	0.41	0.41	0.01	0.37	0.37
Sat Flow, veh/h	3442	1863	1583	1144	662	1583	1774	3485	125	1774	3539	2787
Grp Volume(v), veh/h	1199	58	0	90	0	3	82	706	737	10	882	796
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1806	0	1583	1774	1770	1841	1774	1770	1393
Q Serve(g_s), s	40.0	2.4	0.0	5.7	0.0	0.2	5.3	45.0	45.2	0.6	24.3	12.9
Cycle Q Clear(g_c), s	40.0	2.4	0.0	5.7	0.0	0.2	5.3	45.0	45.2	0.6	24.3	12.9
Prop In Lane	1.00		1.00	0.63		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	1216	658	559	117	0	103	104	733	762	21	1299	2008
V/C Ratio(X)	0.99	0.09	0.00	0.77	0.00	0.03	0.78	0.96	0.97	0.47	0.68	0.40
Avail Cap(c_a), veh/h	1216	658	559	281	0	246	192	735	765	77	1299	2008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	25.0	0.0	53.2	0.0	50.7	53.7	33.1	33.1	56.8	30.9	6.3
Incr Delay (d2), s/veh	22.4	0.1	0.0	9.9	0.0	0.1	12.1	24.5	24.4	15.6	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.3	0.0	3.1	0.0	0.1	2.9	27.0	28.1	0.4	12.1	11.3
LnGrp Delay(d),s/veh	59.5	25.0	0.0	63.2	0.0	50.8	65.8	57.5	57.5	72.5	32.3	6.5
LnGrp LOS	E	C		E		D	E	E	E	C	B	A
Approach Vol, veh/h	1257			93				1525			1688	
Approach Delay, s/veh	57.9			62.8				58.0			20.4	
Approach LOS	E			E				E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	59.9	52.4		45.4	11.3	47.0		12.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	48.1	48.1		40.9	12.5	40.6		18.0				
Max Q Clear Time (g_c+H), s	47.2	47.2		42.0	7.3	26.3		7.7				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.1	8.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	44.1											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
13: El Camino Real & Mission Ave

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	492	132	233	362	124	197	768	287	190	600	344
Future Volume (veh/h)	510	492	132	233	362	124	197	768	287	190	600	344
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	554	535	0	253	393	135	214	835	312	207	652	374
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	634	973	435	337	486	165	250	979	438	243	965	718
Arrive On Green	0.18	0.27	0.00	0.10	0.19	0.14	0.28	0.28	0.14	0.27	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	3442	2577	873	1774	3539	1583	1774	3539	1564
Grp Volume(v), veh/h	554	535	0	253	268	260	214	835	312	207	652	374
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1680	1774	1770	1583	1774	1770	1564
Q Serve(g_s), s	13.2	10.9	0.0	6.0	12.2	12.5	9.9	18.8	15.0	9.6	13.9	14.4
Cycle Q Clear(g_c), s	13.2	10.9	0.0	6.0	12.2	12.5	9.9	18.8	15.0	9.6	13.9	14.4
Prop In Lane	1.00	1.00	1.00	1.00	0.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	634	973	435	337	334	317	250	979	438	243	965	718
V/C Ratio(X)	0.87	0.55	0.00	0.75	0.80	0.82	0.86	0.85	0.71	0.85	0.68	0.52
Avail Cap(c_a), veh/h	673	982	439	453	378	359	263	1049	469	263	1049	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	26.1	0.0	37.0	32.7	32.8	35.4	28.9	27.5	35.5	27.3	16.4
Incr Delay (d2), s/veh	11.8	0.6	0.0	4.7	10.7	12.7	22.4	6.6	4.7	21.3	1.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.4	0.0	3.1	6.9	6.9	6.4	10.1	7.1	6.2	7.0	6.3
LnGrp Delay(d),s/veh	45.2	26.8	0.0	41.8	43.4	45.5	57.8	35.5	32.2	56.8	28.9	16.9
LnGrp LOS	D	C		D	D	D	E	D	C	E	C	B
Approach Vol, veh/h	1089			781			1361			1233		
Approach Delay, s/veh	36.2			43.6			38.2			30.0		
Approach LOS	D			D			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	27.8	12.8	27.7	16.4	27.5	20.0	20.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.0	11.1	23.4	12.5	25.0	16.5	18.0					
Max Q Clear Time (g_c+1.5), s	20.8	8.0	12.9	11.9	16.4	15.2	14.5					
Green Ext Time (p_c), s	0.1	2.5	0.3	2.6	0.0	3.8	0.3	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	36.4											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
14: Douglas Dr & Mission Ave

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	735	140	39	351	390	182	674	6	270	568	38
Future Volume (veh/h)	217	735	140	39	351	390	182	674	6	270	568	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00	0.98	1.00	0.97	1.00	0.97	1.00	0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	236	799	152	42	382	424	198	733	7	293	617	41
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1105	482	68	457	401	238	821	8	334	952	63
Arrive On Green	0.09	0.31	0.31	0.04	0.26	0.26	0.13	0.23	0.23	0.19	0.28	0.28
Sat Flow, veh/h	3442	3539	1545	1774	1770	1554	1774	3591	34	1774	3364	223
Grp Volume(v), veh/h	236	799	152	42	382	424	198	361	379	293	324	334
Grp Sat Flow(s), veh/h/ln	1721	1770	1545	1774	1770	1554	1774	1770	1855	1774	1770	1818
Q Serve(g_s), s	5.2	15.5	5.8	1.8	15.8	20.0	8.4	15.3	15.3	12.4	12.5	12.5
Cycle Q Clear(g_c), s	5.2	15.5	5.8	1.8	15.8	20.0	8.4	15.3	15.3	12.4	12.5	12.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	318	1105	482	68	457	401	238	405	424	334	501	514
V/C Ratio(X)	0.74	0.72	0.32	0.62	0.84	1.06	0.83	0.89	0.89	0.88	0.65	0.65
Avail Cap(c_a), veh/h	333	1105	482	114	457	401	291	411	431	378	501	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	23.7	20.3	36.7	27.2	28.7	32.7	29.0	29.0	30.6	24.4	24.4
Incr Delay (d2), s/veh	8.3	2.4	0.4	8.7	12.8	60.8	15.5	20.9	20.2	18.5	2.9	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.9	2.5	1.1	9.4	15.2	5.1	9.8	10.2	7.8	6.4	6.6
LnGrp Delay(d),s/veh	42.5	26.0	20.7	45.4	40.0	89.6	48.2	49.9	49.1	49.1	27.3	27.3
LnGrp LOS	D	C	C	D	D	F	D	D	D	D	C	C
Approach Vol, veh/h	1187			848			938			951		
Approach Delay, s/veh	28.6			65.0			49.2			34.0		
Approach LOS	C			E			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	28.7	14.9	26.4	11.7	24.5	19.1	22.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.5	12.7	21.8	7.5	20.0	16.5	18.0					
Max Q Clear Time (g_c+1.5), s	17.5	10.4	14.5	7.2	22.0	14.4	17.3					
Green Ext Time (p_c), s	0.0	2.6	0.1	2.4	0.0	0.0	0.2	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	42.7											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
15: SR-76 & Douglas Dr

North River Farms
06/05/2018

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	625	2008		0	0	1381	246	0	0	0	250	0	375
Future Volume (veh/h)	625	2008		0	0	1381	246	0	0	0	250	0	375
Number	5	2		12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0		0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	679	2183		0	0	1501	267	0	0	0	272	0	408
Adj No. of Lanes	2	2		0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		0	0	2	2	2	2	2	2	0	2
Cap, veh/h	522	3382		0	0	2733	1223	0	1	0	0	0	0
Arrive On Green	0.15	0.96		0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632		0	0	3632	1583	0	1863	0		0	
Grp Volume(v), veh/h	679	2183		0	0	1501	267	0	0	0		0.0	
Grp Sat Flow(s), veh/h/ln	1721	1770		0	0	1770	1583	0	1863	0			
Q Serve(g_s), s	27.3	12.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cycle Q Clear(g_c), s	27.3	12.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Prop In Lane	1.00			0.00	0.00		1.00	0.00		0.00			
Lane Grp Cap(c), veh/h	522	3382		0	0	2733	1223	0	1	0			
V/C Ratio(X)	1.30	0.65		0.00	0.00	0.55	0.22	0.00	0.00	0.00			
Avail Cap(c_a), veh/h	522	3382		0	0	2733	1223	0	455	0			
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00		0.00	0.00	0.47	0.47	0.00	0.00	0.00			
Uniform Delay (d), s/veh	76.3	0.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Incr Delay (d2), s/veh	148.9	1.0		0.0	0.0	0.4	0.2	0.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	28.8	6.2		0.0	0.0	0.1	0.1	0.0	0.0	0.0			
LnGrp Delay(d),s/veh	225.3	1.4		0.0	0.0	0.4	0.2	0.0	0.0	0.0			
LnGrp LOS	F	A				A	A						
Approach Vol, veh/h	2862			1768				0					
Approach Delay, s/veh	54.5			0.3				0.0					
Approach LOS	D			A									
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	2					5	6	8					
Phs Duration (G+Y+Rc), s	180.0					33.0	147.0	0.0					
Change Period (Y+Rc), s	8.0					* 5.7	8.0	6.1					
Max Green Setting (Gmax), s	92.9					* 27	59.9	44.0					
Max Q Clear Time (g_c+1), s	14.9					29.3	2.0	0.0					
Green Ext Time (p_c), s	36.3					0.0	21.2	0.0					
Intersection Summary													
HCM 2010 Ctrl Delay	33.8												
HCM 2010 LOS	C												
Notes													

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
16: Rancho Del Oro Dr & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1822	284	283	1161	123	252	344	289	101	258	57
Future Volume (veh/h)	74	1822	284	283	1161	123	252	344	289	101	258	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	80	1980	309	308	1262	134	274	374	314	110	280	62
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1554	695	210	1644	736	249	428	354	229	660	144
Arrive On Green	0.06	0.29	0.29	0.12	0.46	0.46	0.07	0.23	0.23	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1823	1510	3442	2884	628
Grp Volume(v), veh/h	80	1980	309	308	1262	134	274	363	325	110	170	172
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1564	1721	1770	1742
Q Serve(g_s), s	7.9	79.0	28.5	21.3	53.4	8.9	13.0	35.5	36.2	5.5	14.7	15.2
Cycle Q Clear(g_c), s	7.9	79.0	28.5	21.3	53.4	8.9	13.0	35.5	36.2	5.5	14.7	15.2
Prop In Lane		1.00	1.00	1.00		1.00	1.00		0.97	1.00		0.36
Lane Grp Cap(c), veh/h	164	1554	695	210	1644	736	249	415	367	229	405	399
V/C Ratio(X)	0.49	1.27	0.44	1.47	0.77	0.18	1.10	0.87	0.89	0.48	0.42	0.43
Avail Cap(c_a), veh/h	168	1554	695	210	1644	736	249	482	426	229	472	465
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.36	0.56	0.56	0.56	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	63.5	45.7	79.3	40.1	28.2	83.5	66.3	66.6	81.0	59.2	59.4
Incr Delay (d2), s/veh	0.8	125.5	0.7	224.3	2.0	0.3	87.2	14.6	17.8	1.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	65.8	12.7	23.5	26.6	3.9	9.2	19.1	17.4	2.7	7.3	7.4
LnGrp Delay(d),s/veh	81.1	189.0	46.5	303.7	42.1	28.5	170.7	80.9	84.4	82.6	59.9	60.1
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2369				1704				962			
Approach Delay, s/veh	166.7				88.3				107.7			
Approach LOS	F				F				F			
									E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	87.0	18.7	47.3	22.4	91.6	17.7	48.3					
Change Period (Y+Rc), s	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1					
Max Green Setting (Gmax), s	72.2	* 13	48.0	* 17	76.5	* 12	49.0					
Max Q Clear Time (g_c+1), s	23.3	81.0	15.0	17.2	9.9	55.4	7.5	38.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.1	10.4	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay		123.7										
HCM 2010 LOS		F										
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
17: Old Grove Rd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	207	1760	246	178	1240	14	196	260	205	10	107	131
Future Volume (veh/h)	207	1760	246	178	1240	14	196	260	205	10	107	131
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	225	1913	267	193	1348	15	213	283	223	11	116	142
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	1995	881	148	1826	20	251	344	262	54	245	219
Arrive On Green	0.14	0.56	0.56	0.08	0.51	0.51	0.07	0.18	0.18	0.03	0.14	0.14
Sat Flow, veh/h	1774	3539	1563	1774	3585	40	3442	1900	1448	1774	1770	1580
Grp Volume(v), veh/h	225	1913	267	193	665	698	213	263	243	11	116	142
Grp Sat Flow(s),veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1579	1774	1770	1580
Q Serve(g_s), s	22.5	92.4	16.2	15.0	53.2	53.2	11.0	25.7	26.8	1.1	10.9	15.3
Cycle Q Clear(g_c), s	22.5	92.4	16.2	15.0	53.2	53.2	11.0	25.7	26.8	1.1	10.9	15.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.92	1.00		1.00
Lane Grp Cap(c), veh/h	244	1995	881	148	901	945	251	320	285	54	245	219
V/C Ratio(X)	0.92	0.96	0.30	1.31	0.74	0.74	0.85	0.82	0.85	0.20	0.47	0.65
Avail Cap(c_a), veh/h	279	1995	881	148	901	945	273	433	386	128	420	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.7	37.3	20.7	82.5	34.7	34.7	82.5	70.9	71.4	85.1	71.5	73.4
Incr Delay (d2), s/veh	4.8	1.7	0.1	168.3	3.9	3.8	20.5	9.0	12.7	1.8	1.4	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	45.4	7.0	14.3	27.0	28.3	5.9	13.4	12.8	0.6	5.4	6.9
LnGrp Delay(d),s/veh	81.5	39.0	20.8	250.8	38.6	38.5	102.9	79.9	84.1	86.9	72.9	76.6
LnGrp LOS	F	D	C	F	D	D	F	E	F	F	E	E
Approach Vol, veh/h	2405			1556			719			269		
Approach Delay, s/veh	41.0			64.9			88.2			75.4		
Approach LOS	D			E			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	109.4	18.8	31.0	30.5	99.7	11.2	38.7				
Change Period (Y+Rc), s	5.7	8.0	5.7	6.1	5.7	8.0	5.7	6.1				
Max Green Setting (Gmax), s	15	82.5	14	42.7	28	69.2	13	44.0				
Max Q Clear Time (g_c+M), s	94.4	13.0	17.3	24.5	55.2	3.1	28.8					
Green Ext Time (p_c), s	0.0	0.0	0.1	1.6	0.2	7.9	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	57.2											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
18: Frazee Rd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	1745	144	141	1271	80	81	161	172	49	79	39
Future Volume (veh/h)	53	1745	144	141	1271	80	81	161	172	49	79	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	58	1897	157	153	1382	87	88	175	187	53	86	42
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	1954	986	148	2026	993	246	291	244	213	273	325
Arrive On Green	0.06	0.55	0.55	0.08	0.57	0.57	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1533
Grp Volume(v), veh/h	58	1897	157	153	1382	87	88	175	187	53	86	42
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1533
Q Serve(g_s), s	5.7	93.1	7.5	15.0	49.3	3.9	4.4	15.8	20.7	2.6	7.4	4.0
Cycle Q Clear(g_c), s	5.7	93.1	7.5	15.0	49.3	3.9	4.4	15.8	20.7	2.6	7.4	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	1954	986	148	2026	993	246	291	244	213	273	325
V/C Ratio(X)	0.52	0.97	0.16	1.03	0.68	0.09	0.36	0.60	0.77	0.25	0.31	0.13
Avail Cap(c_a), veh/h	118	1954	986	148	2026	993	249	455	382	229	445	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.7	38.9	14.2	82.5	27.0	12.7	79.7	70.8	72.8	80.4	68.7	57.8
Incr Delay (d2), s/veh	0.3	2.4	0.0	83.6	1.9	0.2	0.9	2.0	5.0	0.6	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	46.0	3.3	10.8	24.5	1.7	2.1	8.3	9.3	1.3	3.9	1.7
LnGrp Delay(d),s/veh	82.0	41.3	14.2	166.4	28.9	12.9	80.5	72.8	77.8	81.0	69.4	58.0
LnGrp LOS	F	D	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2112			1622			450			181		
Approach Delay, s/veh	40.4			41.0			76.4			70.1		
Approach LOS	D			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	107.4	18.5	33.4	17.0	111.0	16.9	35.1				
Change Period (Y+Rc), s	5.7	8.0	5.7	7.0	5.7	8.0	5.7	7.0				
Max Green Setting (Gmax), s	15	82.6	13	43.0	12	85.6	12	44.0				
Max Q Clear Time (g_c+M), s	95.1	6.4	9.4	7.7	51.3	4.6	22.7					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	14.4	0.1	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	45.6											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\8. Existing + Cuml + Proj PM.syn

Synchro 10 Report

Existing + Cuml + Proj PM
19: College Blvd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔↔	↔	↔↔	↔↔↔	↔	↔↔	↔↔		↔↔	↔↔	↔
Traffic Volume (veh/h)	760	1374	74	302	971	745	68	1162	367	577	1017	450
Future Volume (veh/h)	760	1374	74	302	971	745	68	1162	367	577	1017	450
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	826	1493	80	328	1055	810	74	1263	399	627	1105	489
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	598	1497	569	273	1017	539	224	904	277	484	1471	920
Arrive On Green	0.17	0.29	0.29	0.08	0.20	0.20	0.07	0.34	0.34	0.14	0.42	0.42
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2658	816	3442	3539	1550
Grp Volume(v), veh/h	826	1493	80	328	1055	810	74	829	833	627	1105	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1704	1721	1770	1550
Q Serve(g_s), s	31.3	52.8	6.1	14.3	36.0	36.0	3.7	61.2	61.2	25.3	47.8	34.1
Cycle Q Clear(g_c), s	31.3	52.8	6.1	14.3	36.0	36.0	3.7	61.2	61.2	25.3	47.8	34.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	598	1497	569	273	1017	539	224	602	579	484	1471	920
V/C Ratio(X)	1.38	1.00	0.14	1.20	1.04	1.50	0.33	1.38	1.44	1.30	0.75	0.53
Avail Cap(c_a), veh/h	598	1497	569	273	1017	539	229	602	579	484	1471	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.3	63.4	38.9	82.8	72.0	59.3	80.4	59.4	59.4	77.3	44.7	22.2
Incr Delay (d2), s/veh	181.4	22.6	0.5	119.6	38.3	235.6	0.9	180.0	207.0	147.9	2.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	80.0	27.9	2.8	11.3	20.5	62.0	1.8	60.0	62.1	22.0	23.8	14.7
LnGrp Delay(d),s/veh	255.7	86.0	39.4	202.4	110.3	294.9	81.3	239.4	266.4	225.3	46.9	22.8
LnGrp LOS	F	F	D	F	F	F	F	F	F	D	D	C
Approach Vol, veh/h	2399			2193			1736			2221		
Approach Delay, s/veh	142.9			192.3			245.6			91.9		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	61.0	17.4	81.6	37.0	44.0	31.0	68.0				
Change Period (Y+Rc), s	5.7	8.0	5.7	6.8	5.7	8.0	5.7	6.8				
Max Green Setting (Gmax), s	14	53.0	12	74.5	31	36.0	25	61.2				
Max Q Clear Time (g_c+max), s	3	54.8	5.7	49.8	33.3	38.0	27.3	63.2				
Green Ext Time (p_c), s	0.0	0.0	0.1	11.5	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	163.2											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
20: N. Santa Fe Ave & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1790	513	428	1434	20	603	21	766	6	4	6
Future Volume (veh/h)	18	1790	513	428	1434	20	603	21	766	6	4	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	20	1946	558	465	1559	22	671	0	833	7	4	7
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1665	1096	407	1965	28	808	0	543	70	24	42
Arrive On Green	0.04	0.47	0.47	0.12	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3572	50	3548	0	1563	1774	600	1050
Grp Volume(v), veh/h	20	1946	558	465	772	809	671	0	833	7	0	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1721	1770	1852	1774	0	1563	1774	0	1650
Q Serve(g_s), s	2.0	84.7	30.2	21.3	62.6	62.8	32.4	0.0	41.0	0.7	0.0	1.2
Cycle Q Clear(g_c), s	2.0	84.7	30.2	21.3	62.6	62.8	32.4	0.0	41.0	0.7	0.0	1.2
Prop In Lane	1.00	1.00	1.00	1.00	0.03	1.00	1.00	1.00	1.00	1.00	0.64	1.00
Lane Grp Cap(c), veh/h	69	1665	1096	407	974	1019	808	0	543	70	0	65
V/C Ratio(X)	0.29	1.17	0.51	1.14	0.79	0.79	0.83	0.00	1.53	0.10	0.00	0.17
Avail Cap(c_a), veh/h	108	1665	1096	407	974	1019	808	0	543	196	0	182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	84.1	47.7	12.8	79.3	32.3	32.3	66.2	0.0	58.9	83.3	0.0	83.6
Incr Delay (d2), s/veh	2.3	82.8	1.7	89.2	6.6	6.4	7.3	0.0	249.1	0.6	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	60.5	23.3	15.2	32.2	34.0	16.8	0.0	64.6	0.3	0.0	0.0	0.6
LnGrp Delay(d),s/veh	86.5	130.5	14.4	168.6	38.9	38.7	73.5	0.0	308.0	84.0	0.0	84.8
LnGrp LOS	F	F	B	F	D	D	E	F	F	F	F	F
Approach Vol, veh/h	2524			2046			1504			18		
Approach Delay, s/veh	104.5			68.3			203.4			84.5		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	20.0	92.7	13.2		12.7	107.0	47.1					
Change Period (Y+Rc), s	5.7	8.0	6.1		* 5.7	8.0	6.1					
Max Green Setting (Gmax), s	14	71.9	19.9		* 11	82.2	41.0					
Max Q Clear Time (g_c+max), s	3	86.7	3.2		4.0	64.8	43.0					
Green Ext Time (p_c), s	0.0	0.0	0.0		0.0	9.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	116.7											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
21: Melrose Dr & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔↔	↔	↔↔	↔↔↔	↔	↔↔	↔↔	↔	↔↔	↔↔	↔
Traffic Volume (veh/h)	108	1730	402	44	1179	35	248	9	89	50	10	104
Future Volume (veh/h)	108	1730	402	44	1179	35	248	9	89	50	10	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	1880	437	48	1282	38	270	10	97	54	11	113
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	3177	1132	226	3145	1073	311	359	265	232	279	239
Arrive On Green	0.07	0.62	0.62	0.07	0.62	0.62	0.09	0.10	0.10	0.07	0.08	0.08
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	117	1880	437	48	1282	38	270	10	97	54	11	113
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	5.9	39.6	19.6	2.4	23.1	1.4	13.9	0.5	9.8	2.7	0.5	11.7
Cycle Q Clear(g_c), s	5.9	39.6	19.6	2.4	23.1	1.4	13.9	0.5	9.8	2.7	0.5	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	3177	1132	226	3145	1073	311	359	265	232	279	239
V/C Ratio(X)	0.47	0.59	0.39	0.21	0.41	0.04	0.87	0.03	0.37	0.23	0.04	0.47
Avail Cap(c_a), veh/h	250	3177	1132	249	3145	1073	369	1068	582	249	944	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(i)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.2	20.1	10.1	79.7	17.5	9.1	80.8	72.9	66.5	79.5	76.6	69.9
Incr Delay (d2), s/veh	1.4	0.8	1.0	0.5	0.4	0.1	17.3	0.0	0.8	0.5	0.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	18.7	8.8	1.1	10.9	0.6	7.4	0.2	4.3	1.3	0.3	5.2
LnGrp Delay(d),s/veh	81.6	20.9	11.1	80.1	17.9	9.2	98.1	72.9	67.3	80.0	76.7	71.4
LnGrp LOS	F	C	B	F	B	A	F	E	E	F	E	E
Approach Vol, veh/h	2434			1368			377			178		
Approach Delay, s/veh	22.1			19.8			89.5			74.3		
Approach LOS	C			B			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	120.0	21.9	20.6	18.7	118.8	17.8	24.7				
Change Period (Y+Rc), s	5.7	7.5	5.7	6.4	5.7	7.5	5.7	6.4				
Max Green Setting (Gmax), s	13	74.4	19	48.0	13	74.3	13	54.3				
Max Q Clear Time (g_c+1), s	4	41.6	15.9	13.7	7.9	25.1	4.7	11.8				
Green Ext Time (p_c), s	0.0	22.0	0.3	0.4	0.1	11.0	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	29.3											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔↔		↔	↔↔↔↔		↔	↔	↔		↔↔	
Traffic Volume (veh/h)	37	1681	235	610	932	11	173	26	339	26	31	63
Future Volume (veh/h)	37	1681	235	610	932	11	173	26	339	26	31	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	40	1827	255	663	1013	12	208	0	368	28	34	68
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	1985	618	697	2753	33	384	0	492	68	82	130
Arrive On Green	0.06	0.39	0.39	0.20	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5181	61	3548	0	1583	823	999	1583
Grp Volume(v), veh/h	40	1827	255	663	663	362	208	0	368	62	0	68
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1852	1774	0	1583	1822	0	1583
Q Serve(g_s), s	2.6	41.0	14.0	22.8	13.7	13.7	6.7	0.0	13.0	3.9	0.0	4.9
Cycle Q Clear(g_c), s	2.6	41.0	14.0	22.8	13.7	13.7	6.7	0.0	13.0	3.9	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.45		1.00
Lane Grp Cap(c), veh/h	109	1985	618	697	1802	984	384	0	492	150	0	130
V/C Ratio(X)	0.37	0.92	0.41	0.95	0.37	0.37	0.54	0.00	0.75	0.41	0.00	0.52
Avail Cap(c_a), veh/h	148	1985	618	697	1802	984	384	0	492	152	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	34.8	26.6	47.3	16.4	16.4	50.7	0.0	37.1	52.3	0.0	52.8
Incr Delay (d2), s/veh	2.1	8.5	2.0	22.8	0.6	1.1	1.5	0.0	6.2	1.8	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	20.7	6.5	13.1	6.5	7.2	3.3	0.0	11.8	2.0	0.0	2.3
LnGrp Delay(d),s/veh	56.1	43.3	28.6	70.1	17.0	17.4	52.2	0.0	43.3	54.1	0.0	56.4
LnGrp LOS	E	D	C	E	B	B	D		D	D		E
Approach Vol, veh/h	2122			1688			576			130		
Approach Delay, s/veh	41.8			37.9			46.5			55.3		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	54.3		16.3	13.1	71.3		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	5.7	7.5		6.4				
Max Green Setting (Gmax), s	24	46.7		10.0	10	61.0		13.0				
Max Q Clear Time (g_c+1), s	4	43.0		6.9	4.6	15.7		15.0				
Green Ext Time (p_c), s	0.0	3.3		0.2	0.0	8.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	41.3											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
23: College Blvd & Frazee Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	95	128	21	82	40	203	1069	48	49	980	209
Future Volume (veh/h)	170	95	128	21	82	40	203	1069	48	49	980	209
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	144	160	139	23	89	43	221	1162	52	53	1065	227
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	255	212	141	148	124	267	1622	702	84	1257	562
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.15	0.46	0.06	0.05	0.36	0.36
Sat Flow, veh/h	1774	1863	1552	1774	1863	1560	1774	3539	1531	1774	3539	1582
Grp Volume(v), veh/h	144	160	139	23	89	43	221	1162	52	53	1065	227
Grp Sat Flow(s), veh/h/ln	1774	1863	1552	1774	1863	1560	1774	1770	1531	1774	1770	1582
Q Serve(g_s), s	4.9	5.2	5.5	0.8	3.0	1.7	7.8	17.1	1.2	1.9	18.0	7.0
Cycle Q Clear(g_c), s	4.9	5.2	5.5	0.8	3.0	1.7	7.8	17.1	1.2	1.9	18.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	255	212	141	148	124	267	1622	702	84	1257	562
V/C Ratio(X)	0.59	0.63	0.65	0.16	0.60	0.35	0.83	0.72	0.07	0.63	0.85	0.40
Avail Cap(c_a), veh/h	494	518	432	494	518	434	315	1696	733	137	1340	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	26.4	26.5	27.8	28.8	28.2	26.7	14.1	9.8	30.3	19.2	15.7
Incr Delay (d2), s/veh	2.3	2.5	3.4	0.5	3.9	1.7	14.5	1.4	0.0	7.5	5.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.9	2.6	0.4	1.7	0.8	4.9	8.5	0.5	1.1	9.6	3.1
LnGrp Delay(d),s/veh	28.6	28.9	29.9	28.3	32.7	29.9	41.1	15.5	9.9	37.8	24.2	16.2
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	C	B
Approach Vol, veh/h	443			155			1435			1345		
Approach Delay, s/veh	29.1			31.3			19.3			23.4		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	34.2		13.3	14.2	27.5		9.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	31.0			18.0	11.5	24.5		18.0				
Max Q Clear Time (g_c+I), s	19.1			7.5	9.8	20.0		5.0				
Green Ext Time (p_c), s	0.0	6.5		1.4	0.1	3.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	22.8											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Existing + Cuml + Proj PM
25: Main Access & N. River Rd

North River Farms
06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	663	118	42	441	25	61	0	22	13	0	38
Future Volume (veh/h)	76	663	118	42	441	25	61	0	22	13	0	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	721	128	46	479	27	66	0	24	14	0	41
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1410	631	94	1305	584	356	0	182	371	0	182
Arrive On Green	0.08	0.40	0.40	0.05	0.37	0.37	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1360	0	1583	1381	0	1583
Grp Volume(v), veh/h	83	721	128	46	479	27	66	0	24	14	0	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1360	0	1583	1381	0	1583
Q Serve(g_s), s	1.4	4.8	1.6	0.8	3.1	0.3	1.4	0.0	0.4	0.3	0.0	0.7
Cycle Q Clear(g_c), s	1.4	4.8	1.6	0.8	3.1	0.3	2.2	0.0	0.4	0.7	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1410	631	94	1305	584	356	0	182	371	0	182
V/C Ratio(X)	0.57	0.51	0.20	0.49	0.37	0.05	0.19	0.00	0.13	0.04	0.00	0.23
Avail Cap(c_a), veh/h	331	3244	1451	285	3153	1411	987	0	917	1012	0	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	7.1	6.1	14.3	7.2	6.3	13.5	0.0	12.4	12.7	0.0	12.5
Incr Delay (d2), s/veh	3.4	0.3	0.2	4.0	0.2	0.0	0.2	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	0.7	0.5	1.5	0.2	0.6	0.0	0.2	0.1	0.0	0.4
LnGrp Delay(d),s/veh	17.2	7.4	6.3	18.3	7.3	6.3	13.7	0.0	12.7	12.7	0.0	13.1
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h	932			552			90			55		
Approach Delay, s/veh	8.1			8.2			13.5			13.0		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	16.9		8.1	7.1	16.0		8.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	28.5			18.0	5.8	27.7		18.0				
Max Q Clear Time (g_c+I), s	6.8			2.7	3.4	5.1		4.2				
Green Ext Time (p_c), s	0.0	5.6		0.1	0.0	3.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	8.6											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

APPENDIX J

INTERSECTION ANALYSIS WORKSHEETS – YEAR 2035 WITHOUT PROJECT

Year 2035 AM (w. Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	475	30	85	185	105	65	55	1005	65	15	305	35
Future Volume (veh/h)	475	30	85	185	105	65	55	1005	65	15	305	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	516	33	92	201	114	71	60	1092	71	16	332	38
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	90	250	311	220	128	94	1933	599	35	1608	180
Arrive On Green	0.19	0.21	0.21	0.09	0.10	0.10	0.05	0.38	0.38	0.02	0.35	0.35
Sat Flow, veh/h	3442	435	1213	3442	2153	1254	1774	5085	1577	1774	4640	520
Grp Volume(v), veh/h	516	0	125	201	92	93	60	1092	71	16	241	129
Grp Sat Flow(s), veh/h/ln	1721	0	1649	1721	1770	1637	1774	1695	1577	1774	1695	1770
Q Serve(g_s), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.0	1.7	0.5	3.0	3.0
Cycle Q Clear(g_c), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.0	1.7	0.5	3.0	3.0
Prop In Lane	1.00		0.74	1.00		0.77	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	668	0	340	311	181	167	94	1933	599	35	1175	614
V/C Ratio(X)	0.77	0.00	0.37	0.65	0.51	0.55	0.64	0.56	0.12	0.46	0.20	0.21
Avail Cap(c_a), veh/h	959	0	710	523	538	498	210	1933	599	150	1175	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	20.2	26.0	25.2	25.3	27.5	14.5	11.9	28.7	13.6	13.6
Incr Delay (d2), s/veh	2.5	0.0	0.7	2.3	2.2	2.8	7.0	1.2	0.4	9.3	0.4	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.2	0.0	1.8	1.7	1.5	1.6	1.1	4.9	0.8	0.3	1.4	1.6
LnGrp Delay(d), s/veh	25.1	0.0	20.9	28.3	27.4	28.1	34.5	15.7	12.3	38.0	14.0	14.4
LnGrp LOS	C		C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h	641			386			1223			386		
Approach Delay, s/veh	24.3			28.0			16.4			15.1		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	27.0	9.9	16.7	7.6	25.0	16.0	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	22.5	9.0	25.5	7.0	20.5	16.5	18.0				
Max Q Clear Time (g_c+1), s	2.5	12.0	5.3	5.9	4.0	5.0	10.4	5.2				
Green Ext Time (p_c), s	0.0	5.6	0.2	0.6	0.0	2.0	1.1	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	19.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	45	55	115	560	60	260	95	820	345	135	720	35
Future Volume (veh/h)	45	55	115	560	60	260	95	820	345	135	720	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	60	125	609	65	283	103	891	375	147	783	38
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	340	279	717	106	462	131	1544	477	181	1174	525
Arrive On Green	0.04	0.18	0.18	0.21	0.35	0.35	0.07	0.30	0.30	0.10	0.33	0.33
Sat Flow, veh/h	1774	1863	1527	3442	302	1315	1774	5085	1569	1774	3539	1583
Grp Volume(v), veh/h	49	60	125	609	0	348	103	891	375	147	783	38
Grp Sat Flow(s), veh/h/ln	1774	1863	1527	1721	0	1617	1774	1695	1569	1774	1770	1583
Q Serve(g_s), s	2.4	2.4	6.4	15.0	0.0	15.7	5.0	13.1	19.3	7.2	16.8	1.5
Cycle Q Clear(g_c), s	2.4	2.4	6.4	15.0	0.0	15.7	5.0	13.1	19.3	7.2	16.8	1.5
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	340	279	717	0	568	131	1544	477	181	1174	525
V/C Ratio(X)	0.70	0.18	0.45	0.85	0.00	0.61	0.79	0.58	0.79	0.81	0.67	0.07
Avail Cap(c_a), veh/h	179	759	622	915	0	926	203	1784	550	231	1297	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	30.5	32.2	33.7	0.0	23.7	40.2	26.0	28.2	38.9	25.4	20.2
Incr Delay (d2), s/veh	11.8	0.2	1.1	6.2	0.0	1.1	10.4	0.3	6.5	15.8	1.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	1.3	2.8	7.7	0.0	7.1	2.8	6.2	9.3	4.3	8.3	0.6
LnGrp Delay(d), s/veh	53.7	30.8	33.3	39.8	0.0	24.8	50.6	26.3	34.7	54.7	26.5	20.3
LnGrp LOS	D	C	C	D		C	D	C	C	D	C	C
Approach Vol, veh/h	234			957			1369			968		
Approach Delay, s/veh	36.9			34.4			30.4			30.5		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.5	31.3	22.9	20.6	11.0	33.8	8.0	35.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	3.5	31.0	23.5	36.0	10.1	32.4	8.9	50.6				
Max Q Clear Time (g_c+1), s	2.5	21.3	17.0	8.4	7.0	18.8	4.4	17.7				
Green Ext Time (p_c), s	0.1	5.1	1.4	0.7	0.1	4.7	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay	32.0											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↱	↰	↱
Traffic Volume (veh/h)	5	525	5	5	830	10	55	0	10	10	0	25
Future Volume (veh/h)	5	525	5	5	830	10	55	0	10	10	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	5	571	0	5	902	11	60	0	11	11	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	1368	612	12	1384	17	150	0	132	21	0	51
Arrive On Green	0.01	0.39	0.00	0.01	0.39	0.39	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3580	44	1774	0	1558	473	0	1161
Grp Volume(v), veh/h	5	571	0	5	446	467	60	0	11	38	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1854	1774	0	1558	1634	0	0
Q Serve(g_s), s	0.1	4.4	0.0	0.1	7.8	7.8	1.2	0.0	0.2	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	4.4	0.0	0.1	7.8	7.8	1.2	0.0	0.2	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	12	1368	612	12	684	717	150	0	132	71	0	0
V/C Ratio(X)	0.42	0.42	0.00	0.42	0.65	0.65	0.40	0.00	0.08	0.53	0.00	0.00
Avail Cap(c_a), veh/h	236	1976	884	236	988	1035	849	0	746	782	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.6	8.4	0.0	18.6	9.5	9.5	16.3	0.0	15.9	17.6	0.0	0.0
Incr Delay (d2), s/veh	21.4	0.2	0.0	21.4	1.1	1.0	1.7	0.0	0.3	6.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	2.2	0.0	0.1	3.9	4.1	0.7	0.0	0.1	0.5	0.0	0.0
LnGrp Delay(d), s/veh	40.0	8.6	0.0	40.0	10.5	10.5	18.0	0.0	16.1	23.7	0.0	0.0
LnGrp LOS	D	A		D	B	B	B		B	C		
Approach Vol, veh/h	576				918			71			38	
Approach Delay, s/veh	8.9				10.7			17.7			23.7	
Approach LOS	A				B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0			6.1	4.8	19.0		7.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I2), s	6.4			2.9	2.1	9.8		3.2				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	4.4		0.2				

Intersection Summary

HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection												
Int Delay, s/veh	11											
Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↰	↱	↰	↱	↰	↱						
Traffic Vol, veh/h	75	355	680		70	110	165					
Future Vol, veh/h	75	355	680		70	110	165					
Conflicting Peds, #/hr	5	0	0	5	0	2						
Sign Control	Free	Free	Free	Free	Stop	Stop						
RT Channelized	-	None	-	None	-	None						
Storage Length	25	-	-	-	0	-						
Veh in Median Storage, #	-	0	0	-	0	-						
Grade, %	-	0	0	-	0	-						
Peak Hour Factor	94	94	94	94	94	94						
Heavy Vehicles, %	2	2	2	2	2	2						
Mvmt Flow	80	378	723	74	117	176						

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	802	0	0	1303	767
Stage 1	-	-	-	765	-
Stage 2	-	-	-	538	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	822	-	-	177	402
Stage 1	-	-	-	459	-
Stage 2	-	-	-	585	-
Platoon blocked, %	-	-	-		
Mov Cap-1 Maneuver	818	-	-	158	399
Mov Cap-2 Maneuver	-	-	-	278	-
Stage 1	-	-	-	412	-
Stage 2	-	-	-	582	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	55.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	818	-	-	-	340
HCM Lane V/C Ratio	0.098	-	-	-	0.86
HCM Control Delay (s)	9.9	-	-	-	55.5
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	7.9

HCM 2010 TWSC
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Year 2035 AM (w. Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	460	740	5	5	10
Future Vol, veh/h	5	460	740	5	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	500	804	5	5	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	809	0	0 1314 804
Stage 1	-	-	- 804 -
Stage 2	-	-	- 510 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	817	-	- 174 383
Stage 1	-	-	- 440 -
Stage 2	-	-	- 603 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	817	-	- 173 383
Mov Cap-2 Maneuver	-	-	- 173 -
Stage 1	-	-	- 437 -
Stage 2	-	-	- 603 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	817	-	-	-	273
HCM Lane V/C Ratio	0.007	-	-	-	0.06
HCM Control Delay (s)	9.4	-	-	-	19
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Year 2035 AM (w. Melrose)
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	420	705	20	15	40
Future Vol, veh/h	30	420	705	20	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	457	766	22	16	43

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	788	0	0 1300 777
Stage 1	-	-	- 777 -
Stage 2	-	-	- 523 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	831	-	- 178 397
Stage 1	-	-	- 453 -
Stage 2	-	-	- 595 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	831	-	- 169 397
Mov Cap-2 Maneuver	-	-	- 169 -
Stage 1	-	-	- 429 -
Stage 2	-	-	- 595 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	831	-	-	-	169	397
HCM Lane V/C Ratio	0.039	-	-	-	0.096	0.11
HCM Control Delay (s)	9.5	0	-	-	28.6	15.2
HCM Lane LOS	A	A	-	-	D	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.4

Year 2035 AM (w. Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	300	410	20	50	215
Future Vol, veh/h	45	300	410	20	50	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	326	446	22	54	234
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	468	0	-	0	881	457
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1094	-	-	-	317	604
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1094	-	-	-	300	604
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	660	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		21		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1094	-	-	-	507	
HCM Lane V/C Ratio	0.045	-	-	-	0.568	
HCM Control Delay (s)	8.4	0	-	-	21	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	3.5	

HCM 2010 TWSC
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Year 2035 AM (w. Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	115	100	205	880	1760	215		
Future Volume (veh/h)	115	100	205	880	1760	215		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	125	109	223	957	1913	234		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	163	145	197	2814	2253	1008		
Arrive On Green	0.09	0.09	0.11	0.80	0.64	0.64		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	125	109	223	957	1913	234		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	8.3	8.1	13.3	9.1	51.3	7.6		
Cycle Q Clear(g_c), s	8.3	8.1	13.3	9.1	51.3	7.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	163	145	197	2814	2253	1008		
V/C Ratio(X)	0.77	0.75	1.13	0.34	0.85	0.23		
Avail Cap(c_a), veh/h	488	435	197	2814	2253	1008		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	53.3	53.2	53.3	3.5	17.2	9.3		
Incr Delay (d2), s/veh	7.4	7.6	104.9	0.3	4.2	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.4	7.2	12.2	4.5	26.0	3.4		
LnGrp Delay(d),s/veh	60.7	60.8	158.3	3.8	21.5	9.8		
LnGrp LOS	E	E	F	A	C	A		
Approach Vol, veh/h	234			1180	2147			
Approach Delay, s/veh	60.7			33.0	20.2			
Approach LOS	E			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5		6	
Phs Duration (G+Y+Rc), s	102.9		17.1		19.0		83.9	
Change Period (Y+Rc), s	7.5		6.1		* 5.7		7.5	
Max Green Setting (Gmax), s	73.4		33.0		* 13		54.4	
Max Q Clear Time (g_c+I1), s	11.1		10.3		15.3		53.3	
Green Ext Time (p_c), s	8.9		0.7		0.0		1.0	
Intersection Summary								
HCM 2010 Ctrl Delay			27.1					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	75	190	1280	30	35	75	515	600	20	965	10
Future Volume (veh/h)	40	75	190	1280	30	35	75	515	600	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1391	33	38	82	560	652	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	526	230	1347	300	346	81	1061	1874	38	988	10
Arrive On Green	0.15	0.15	0.15	0.38	0.38	0.38	0.05	0.30	0.30	0.02	0.28	0.28
Sat Flow, veh/h	1774	3539	1547	3548	791	911	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1391	0	71	82	560	652	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	0	1702	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.1	1.5	33.0	33.0
Cycle Q Clear(g_c), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.1	1.5	33.0	33.0
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	264	526	230	1347	0	646	81	1061	1874	38	487	511
V/C Ratio(X)	0.16	0.16	0.90	1.03	0.00	0.11	1.01	0.53	0.35	0.57	1.06	1.06
Avail Cap(c_a), veh/h	267	532	232	1347	0	646	81	1061	1874	84	487	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	44.4	50.1	37.2	0.0	24.0	57.2	34.9	8.1	58.1	43.4	43.4
Incr Delay (d2), s/veh	0.3	0.1	33.5	33.2	0.0	0.1	101.6	0.5	0.1	12.7	58.0	57.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3	1.2	8.9	28.3	0.0	1.5	5.0	7.8	10.0	0.9	23.8	24.9
LnGrp Delay(d),s/veh	44.8	44.6	83.6	70.4	0.0	24.1	158.8	35.4	8.2	70.8	101.4	100.5
LnGrp LOS	D	D	F	F		C	F	D	A	E	F	F
Approach Vol, veh/h	332			1462			1294			1082		
Approach Delay, s/veh	69.0			68.1			29.5			100.4		
Approach LOS	E			E			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s7.1	40.4			22.3	10.0	37.5		50.0				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 32.8				18.0	5.5	33.0		45.5				
Max Q Clear Time (g_c+I), s 17.8				17.8	7.5	35.0		47.5				
Green Ext Time (p_c), s 0.0	6.0			0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	64.6											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	525	5	10	915	60	5	5	20	95	0	110
Future Volume (veh/h)	50	525	5	10	915	60	5	5	20	95	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	54	571	5	11	995	65	5	5	22	103	0	120
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1461	13	25	1243	81	99	68	514	132	0	526
Arrive On Green	0.05	0.41	0.41	0.01	0.37	0.37	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1774	3594	31	1774	3366	220	0	205	1550	0	0	1583
Grp Volume(v), veh/h	54	281	295	11	523	537	10	0	22	103	0	120
Grp Sat Flow(s),veh/h/ln	1774	1770	1856	1774	1770	1816	205	0	1550	0	0	1583
Q Serve(g_s), s	1.6	6.1	6.1	0.3	14.4	14.4	0.0	0.0	0.5	0.0	0.0	3.0
Cycle Q Clear(g_c), s	1.6	6.1	6.1	0.3	14.4	14.4	18.1	0.0	0.5	18.1	0.0	3.0
Prop In Lane	1.00		0.02	1.00	0.12	0.50			1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	719	754	25	653	671	167	0	514	132	0	526
V/C Ratio(X)	0.59	0.39	0.39	0.44	0.80	0.80	0.06	0.00	0.04	0.78	0.00	0.23
Avail Cap(c_a), veh/h	166	756	793	166	756	776	167	0	514	132	0	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	11.4	11.4	26.7	15.4	15.4	14.6	0.0	12.3	27.3	0.0	13.2
Incr Delay (d2), s/veh	6.1	0.3	0.3	11.7	5.4	5.3	0.1	0.0	0.0	25.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.0	3.2	0.2	8.0	8.1	0.1	0.0	0.2	2.4	0.0	1.3
LnGrp Delay(d),s/veh	31.4	11.8	11.8	38.4	20.8	20.7	14.8	0.0	12.4	52.5	0.0	13.4
LnGrp LOS	C	B	B	D	C	C	B		B	D		B
Approach Vol, veh/h	630			1071			32			223		
Approach Delay, s/veh	13.4			20.9			13.1			31.5		
Approach LOS	B			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s5.3	26.7			22.6	7.3	24.6		22.6				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 23.3				18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I), s 8.1				20.1	3.6	16.4		20.1				
Green Ext Time (p_c), s 0.0	3.1			0.0	0.0	3.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	19.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	15	30	5	360	20	830	15	230	530	865	370	25
Future Volume (veh/h)	15	30	5	360	20	830	15	230	530	865	370	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	33	5	391	22	902	16	250	576	940	402	27
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	90	14	414	23	1448	30	970	815	957	1893	847
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.27	0.27	0.28	0.53	0.53
Sat Flow, veh/h	1774	1573	238	1684	95	2739	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	16	0	38	413	0	902	16	250	576	940	402	27
Grp Sat Flow(s), veh/h/ln	1774	0	1812	1779	0	1370	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.1	0.0	2.5	28.3	0.0	29.0	1.1	6.8	34.0	33.7	7.4	1.0
Cycle Q Clear(g_c), s	1.1	0.0	2.5	28.3	0.0	29.0	1.1	6.8	34.0	33.7	7.4	1.0
Prop In Lane	1.00		0.13	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	104	437	0	1448	30	970	815	957	1893	847
V/C Ratio(X)	0.16	0.00	0.37	0.94	0.00	0.62	0.53	0.26	0.71	0.98	0.21	0.03
Avail Cap(c_a), veh/h	472	0	482	437	0	1448	80	970	815	957	1893	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	56.3	46.0	0.0	21.0	60.5	35.2	22.5	44.5	15.1	13.7
Incr Delay (d2), s/veh	0.7	0.0	2.2	29.5	0.0	0.8	13.5	0.1	2.8	24.8	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	1.3	17.5	0.0	11.1	0.7	3.4	20.3	19.4	3.6	0.4
LnGrp Delay(d), s/veh	56.4	0.0	58.5	75.4	0.0	21.8	74.0	35.3	25.3	69.3	15.2	13.7
LnGrp LOS	E		E	E		C	E	D	C	E	B	B
Approach Vol, veh/h	54			1315			842			1369		
Approach Delay, s/veh	57.9			38.7			29.2			52.3		
Approach LOS	E			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	38.5		11.6	6.6	70.9		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0	34.0		33.0	5.6	62.9		30.5				
Max Q Clear Time (g_c+I), s	36.0	36.0		4.5	3.1	9.4		31.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				41.9								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	425	20	55	45	45	0	40	715	20	10	1125	1130
Future Volume (veh/h)	425	20	55	45	45	0	40	715	20	10	1125	1130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	462	22	0	49	49	0	43	777	22	11	1223	1228
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	326	277	67	67	116	73	1648	47	25	1563	1719
Arrive On Green	0.18	0.18	0.00	0.07	0.07	0.00	0.04	0.47	0.47	0.01	0.44	0.44
Sat Flow, veh/h	3442	1863	1583	909	909	1583	1774	3515	100	1774	3539	2787
Grp Volume(v), veh/h	462	22	0	98	0	0	43	391	408	11	1223	1228
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1817	0	1583	1774	1770	1845	1774	1770	1393
Q Serve(g_s), s	8.6	0.7	0.0	3.5	0.0	0.0	1.6	10.1	10.1	0.4	19.7	20.2
Cycle Q Clear(g_c), s	8.6	0.7	0.0	3.5	0.0	0.0	1.6	10.1	10.1	0.4	19.7	20.2
Prop In Lane	1.00		1.00	0.50		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	603	326	277	133	0	116	73	830	865	25	1563	1719
V/C Ratio(X)	0.77	0.07	0.00	0.74	0.00	0.00	0.59	0.47	0.47	0.45	0.78	0.71
Avail Cap(c_a), veh/h	931	504	428	489	0	426	133	830	865	133	1634	1774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	23.0	0.0	30.4	0.0	0.0	31.5	12.1	12.1	32.8	15.9	8.8
Incr Delay (d2), s/veh	2.1	0.1	0.0	7.6	0.0	0.0	7.4	0.4	0.4	12.3	2.4	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	0.3	0.0	2.1	0.0	0.0	0.9	5.0	5.2	0.3	10.0	11.6
LnGrp Delay(d), s/veh	28.4	23.1	0.0	38.0	0.0	0.0	38.9	12.5	12.5	45.1	18.4	10.1
LnGrp LOS	C	C		D			D	B	B	D	B	B
Approach Vol, veh/h	484			98			842			2462		
Approach Delay, s/veh	28.1			38.0			13.9			14.4		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.9	35.9		16.2	7.3	34.1		9.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.9	30.9		18.1	5.0	30.9		18.0				
Max Q Clear Time (g_c+I), s	32.4	32.4		10.6	3.6	22.2		5.5				
Green Ext Time (p_c), s	0.0	4.9		1.2	0.0	7.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				16.6								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	220	185	150	185	445	65	210	285	130	115	980	510
Future Volume (veh/h)	220	185	150	185	445	65	210	285	130	115	980	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	239	201	0	201	484	71	228	310	141	125	1065	554
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	715	320	283	587	86	264	1458	652	158	1247	695
Arrive On Green	0.09	0.20	0.00	0.08	0.19	0.19	0.15	0.41	0.41	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3091	451	1774	3539	1583	1774	3539	1548
Grp Volume(V), veh/h	239	201	0	201	276	279	228	310	141	125	1065	554
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1773	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	5.7	4.0	0.0	4.8	12.6	12.7	10.5	4.7	4.8	5.8	23.4	25.9
Cycle Q Clear(g_c), s	5.7	4.0	0.0	4.8	12.6	12.7	10.5	4.7	4.8	5.8	23.4	25.9
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	715	320	283	336	336	264	1458	652	158	1247	695
V/C Ratio(X)	0.74	0.28	0.00	0.71	0.82	0.83	0.86	0.21	0.22	0.79	0.85	0.80
Avail Cap(c_a), veh/h	472	823	368	410	380	381	264	1458	652	273	1266	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	28.3	0.0	37.5	32.6	32.7	34.9	15.9	15.9	37.4	25.2	20.0
Incr Delay (d2), s/veh	3.4	0.2	0.0	3.3	12.2	12.9	24.4	0.1	0.2	8.5	5.8	6.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.8	2.0	0.0	2.4	7.3	7.4	6.9	2.3	2.1	3.2	12.4	12.2
LnGrp Delay(d), s/veh	40.3	28.5	0.0	40.8	44.9	45.6	59.3	16.0	16.1	45.9	31.0	26.3
LnGrp LOS	D	C		D	D	D	E	B	B	D	C	C
Approach Vol, veh/h	440				756			679			1744	
Approach Delay, s/veh	34.9				44.0			30.5			30.6	
Approach LOS	C				D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.0	11.4	21.4	17.0	34.1	12.4	20.4					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	29.6	10.0	19.5	12.5	30.0	11.5	18.0					
Max Q Clear Time (g_c+I), s	6.8	6.8	6.0	12.5	27.9	7.7	14.7					
Green Ext Time (p_c), s	0.1	2.5	0.2	0.9	0.0	1.7	0.3	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay					33.9							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	295	65	50	545	285	130	360	5	440	800	70
Future Volume (veh/h)	50	295	65	50	545	285	130	360	5	440	800	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	321	71	54	592	310	141	391	5	478	870	76
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1077	482	75	680	356	175	529	7	522	1132	99
Arrive On Green	0.04	0.30	0.30	0.04	0.30	0.30	0.10	0.15	0.15	0.29	0.34	0.34
Sat Flow, veh/h	3442	3539	1582	1774	2235	1170	1774	3577	46	1774	3294	288
Grp Volume(V), veh/h	54	321	71	54	469	433	141	193	203	478	467	479
Grp Sat Flow(s), veh/h/ln	1721	1770	1582	1774	1770	1635	1774	1770	1853	1774	1770	1812
Q Serve(g_s), s	1.3	5.9	2.8	2.6	21.4	21.4	6.6	8.9	8.9	22.2	20.1	20.1
Cycle Q Clear(g_c), s	1.3	5.9	2.8	2.6	21.4	21.4	6.6	8.9	8.9	22.2	20.1	20.1
Prop In Lane	1.00		1.00	1.00		0.72	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	146	1077	482	75	539	498	175	262	274	522	608	623
V/C Ratio(X)	0.37	0.30	0.15	0.72	0.87	0.87	0.80	0.74	0.74	0.92	0.77	0.77
Avail Cap(c_a), veh/h	202	1077	482	177	591	546	243	373	391	634	763	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	22.7	21.6	40.4	28.1	28.1	37.6	34.8	34.8	29.1	25.0	25.0
Incr Delay (d2), s/veh	1.6	0.2	0.1	12.1	12.5	13.4	12.6	4.5	4.4	16.1	3.7	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	2.9	1.2	1.5	12.3	11.5	3.9	4.7	4.9	13.2	10.4	10.6
LnGrp Delay(d), s/veh	41.3	22.9	21.8	52.5	40.6	41.5	50.3	39.3	39.2	45.2	28.7	28.6
LnGrp LOS	D	C	C	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h	446				956			537			1424	
Approach Delay, s/veh	24.9				41.7			42.1			34.2	
Approach LOS	C				D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.5	12.9	33.8	8.1	30.5	29.6	17.1					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.0	11.7	36.8	5.0	28.5	30.5	18.0					
Max Q Clear Time (g_c+I), s	7.9	8.6	22.1	3.3	23.4	24.2	10.9					
Green Ext Time (p_c), s	0.0	2.1	0.1	5.4	0.0	2.6	0.9	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay					36.4							
HCM 2010 LOS					D							

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔		↔	↔	↔
Traffic Volume (veh/h)	290	1075	0	0	1935	215	0	0	0	275	0	575
Future Volume (veh/h)	290	1075	0	0	1935	215	0	0	0	275	0	575
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	315	1168	0	0	2103	234	0	0	0	299	0	625
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	315	1168	0	0	2103	234	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	3.9	0.0	0.0	85.8	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	3.9	0.0	0.0	85.8	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.10	0.35	0.00	0.00	0.71	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	40.9	16.3	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	83.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.6	1.9	0.0	0.0	42.2	7.9	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	156.4	0.6	0.0	0.0	41.1	16.4	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1483			2337			0					
Approach Delay, s/veh	33.7			38.6			0.0					
Approach LOS	C			D								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	74.9				* 13	55.9		44.0				
Max Q Clear Time (g_c+1), s	5.9				15.3	87.8		0.0				
Green Ext Time (p_c), s	10.0				0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				36.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	40	950	360	340	1730	140	325	305	350	65	365	95
Future Volume (veh/h)	40	950	360	340	1730	140	325	305	350	65	365	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	1033	391	370	1880	152	353	332	380	71	397	103
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1332	596	225	1461	654	286	470	420	247	709	182
Arrive On Green	0.18	0.75	0.75	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2790	716
Grp Volume(v), veh/h	43	1033	391	370	1880	152	353	332	380	71	250	250
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1736
Q Serve(g_s), s	3.3	27.7	19.3	20.3	66.0	10.0	13.3	27.1	37.1	3.1	19.7	20.0
Cycle Q Clear(g_c), s	3.3	27.7	19.3	20.3	66.0	10.0	13.3	27.1	37.1	3.1	19.7	20.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.41
Lane Grp Cap(c), veh/h	161	1332	596	225	1461	654	286	470	420	247	450	441
V/C Ratio(X)	0.27	0.78	0.66	1.64	1.29	0.23	1.23	0.71	0.90	0.29	0.56	0.57
Avail Cap(c_a), veh/h	188	1332	596	225	1461	654	286	545	488	258	531	521
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	15.7	14.7	69.9	47.0	30.5	73.3	53.1	56.8	70.4	51.8	52.0
Incr Delay (d2), s/veh	0.7	3.3	4.1	291.6	129.5	0.1	131.8	3.5	18.5	0.6	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.7	13.8	8.9	28.2	58.6	4.4	11.6	13.7	18.4	1.5	9.7	9.8
LnGrp Delay(d), s/veh	61.6	19.1	18.8	361.4	176.5	30.6	205.1	56.6	75.3	71.0	52.9	53.1
LnGrp LOS	E	B	B	F	F	C	F	E	E	E	D	D
Approach Vol, veh/h	1467			2402			1065				571	
Approach Delay, s/veh	20.3			195.8			112.5				55.3	
Approach LOS	C			F			F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	68.2	19.0	46.8	20.2	74.0	17.2	48.6				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	20.3	52.9	* 13	48.0	* 17	56.2	* 12	49.3				
Max Q Clear Time (g_c+1), s	29.7	15.3	22.0	5.3	68.0	5.1	39.1					
Green Ext Time (p_c), s	0.0	8.6	0.0	3.2	0.0	0.0	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay				118.3								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	940	250	200	1665	15	210	190	180	35	320	335
Future Volume (veh/h)	175	940	250	200	1665	15	210	190	180	35	320	335
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	190	1022	272	217	1810	16	228	207	196	38	348	364
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1321	583	238	1480	13	280	473	409	118	446	393
Arrive On Green	0.10	0.37	0.37	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1562	1774	3595	32	3442	1770	1531	1774	1770	1560
Grp Volume(v), veh/h	190	1022	272	217	890	936	228	207	196	38	348	364
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1531	1774	1770	1560
Q Serve(g_s), s	15.3	40.7	21.1	19.3	65.9	65.9	10.4	15.5	17.2	3.3	29.3	36.4
Cycle Q Clear(g_c), s	15.3	40.7	21.1	19.3	65.9	65.9	10.4	15.5	17.2	3.3	29.3	36.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1321	583	238	728	764	280	473	409	118	446	393
V/C Ratio(X)	1.12	0.77	0.47	0.91	1.22	1.22	0.82	0.44	0.48	0.32	0.78	0.93
Avail Cap(c_a), veh/h	170	1321	583	264	728	764	299	487	421	144	477	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.30	0.30	0.30	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	44.2	38.1	68.3	47.1	47.1	72.3	48.7	49.3	71.3	55.7	58.4
Incr Delay (d2), s/veh	81.7	1.9	1.1	12.9	103.7	104.8	15.1	0.6	0.9	1.6	7.7	25.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	20.2	9.3	10.3	53.2	56.0	5.6	7.7	7.4	1.7	15.3	18.5
LnGrp Delay(d),s/veh	154.0	46.1	39.2	81.2	150.8	151.9	87.4	49.3	50.1	72.9	63.4	83.8
LnGrp LOS	F	D	D	F	F	F	F	D	D	E	E	F
Approach Vol, veh/h	1484			2043			631			750		
Approach Delay, s/veh	58.7			143.9			63.3			73.8		
Approach LOS	E			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.2	67.7	18.7	46.4	21.0	73.9	16.3	48.8				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	53.7	* 14	43.1	* 15	62.2	* 13	44.0					
Max Q Clear Time (g_c+Q), s	42.7	12.4	38.4	17.3	67.9	5.3	19.2					
Green Ext Time (p_c), s	0.1	5.4	0.1	1.9	0.0	0.0	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				97.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1025	80	75	1695	60	75	85	130	75	140	70
Future Volume (veh/h)	50	1025	80	75	1695	60	75	85	130	75	140	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1114	87	82	1842	65	82	92	141	82	152	76
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	2028	1032	130	2046	1031	272	216	183	251	204	280
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	54	1114	87	82	1842	65	82	92	141	82	152	76
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.7	31.4	3.2	7.2	73.3	2.4	3.6	7.4	13.8	3.6	12.7	6.7
Cycle Q Clear(g_c), s	4.7	31.4	3.2	7.2	73.3	2.4	3.6	7.4	13.8	3.6	12.7	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	2028	1032	130	2046	1031	272	216	183	251	204	280
V/C Ratio(X)	0.45	0.55	0.08	0.63	0.90	0.06	0.30	0.43	0.77	0.33	0.74	0.27
Avail Cap(c_a), veh/h	133	2028	1032	165	2046	1031	280	512	435	258	501	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	21.3	10.2	72.1	29.7	10.2	69.5	65.8	68.7	70.4	69.0	56.8
Incr Delay (d2), s/veh	1.6	0.7	0.1	5.0	6.9	0.1	0.6	1.3	6.6	0.7	5.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.3	15.5	1.4	3.7	37.5	1.1	1.7	3.9	6.4	1.7	6.8	2.9
LnGrp Delay(d), s/veh	73.2	21.9	10.3	77.1	36.6	10.3	70.1	67.1	75.3	71.2	74.3	57.3
LnGrp LOS	E	C	B	E	D	B	E	E	E	E	E	E
Approach Vol, veh/h	1255			1989			315			310		
Approach Delay, s/veh	23.3			37.4			71.6			69.3		
Approach LOS	C			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.4	99.7	18.4	24.6	16.6	100.5	17.4	25.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	62.7	* 13	43.0	* 12	65.6	* 12	44.0					
Max Q Clear Time (g_c+Q), s	33.4	5.6	14.7	6.7	75.3	5.6	15.8					
Green Ext Time (p_c), s	0.1	8.6	0.1	1.1	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				38.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	455	845	45	595	1470	550	60	490	215	610	775	330
Future Volume (veh/h)	455	845	45	595	1470	550	60	490	215	610	775	330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	495	918	49	647	1598	598	65	533	234	663	842	359
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1186	476	671	1533	738	244	581	254	566	1193	733
Arrive On Green	0.13	0.23	0.23	0.20	0.30	0.30	0.07	0.24	0.24	0.16	0.34	0.34
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2386	1044	3442	3539	1579
Grp Volume(v), veh/h	495	918	49	647	1598	598	65	395	372	663	842	359
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1660	1721	1770	1579
Q Serve(g_s), s	20.3	27.0	3.6	29.8	48.2	48.2	2.9	34.8	35.0	26.3	33.1	25.2
Cycle Q Clear(g_c), s	20.3	27.0	3.6	29.8	48.2	48.2	2.9	34.8	35.0	26.3	33.1	25.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	437	1186	476	671	1533	738	244	431	404	566	1193	733
V/C Ratio(X)	1.13	0.77	0.10	0.96	1.04	0.81	0.27	0.92	0.92	1.17	0.71	0.49
Avail Cap(c_a), veh/h	437	1186	476	671	1533	738	258	425	566	1223	747	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	57.4	40.0	63.8	55.9	36.7	70.4	58.9	59.0	66.8	46.1	29.7
Incr Delay (d2), s/veh	84.9	4.9	0.4	26.0	34.9	9.4	0.6	22.7	24.6	95.0	1.8	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	14.8	13.2	1.6	16.6	27.5	24.6	1.4	19.7	18.8	20.0	16.4	11.0
LnGrp Delay(d), s/veh	154.7	62.3	40.4	89.9	90.8	46.1	71.0	81.6	83.6	161.9	47.9	30.3
LnGrp LOS	F	E	D	F	F	D	E	F	F	F	D	C
Approach Vol, veh/h	1462			2843			832			1864		
Approach Delay, s/veh	92.9			81.2			81.7			85.1		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.9	45.3	17.0	60.7	26.0	56.2	32.0	45.8				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	35.3	* 12	55.3	* 20	46.2	* 26	41.0					
Max Q Clear Time (g_c+Q), s	29.0	4.9	35.1	22.3	50.2	28.3	37.0					
Green Ext Time (p_c), s	0.0	3.0	0.1	7.4	0.0	0.0	1.8					
Intersection Summary												
HCM 2010 Ctrl Delay				84.7								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	10	1015	645	825	1990	25	600	5	705	5	30	25
Future Volume (veh/h)	10	1015	645	825	1990	25	600	5	705	5	30	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1103	701	897	2163	27	656	0	766	5	33	27
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1161	924	630	1734	22	909	0	695	126	67	55
Arrive On Green	0.03	0.33	0.33	0.18	0.48	0.48	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1580	3442	3580	45	3548	0	1580	1774	949	777
Grp Volume(v), veh/h	11	1103	701	897	1067	1123	656	0	766	5	0	60
Grp Sat Flow(s), veh/h/ln	1774	1770	1580	1721	1770	1855	1774	0	1580	1774	0	1726
Q Serve(g_s), s	1.0	48.7	52.5	29.3	77.5	77.5	27.0	0.0	41.0	0.4	0.0	5.4
Cycle Q Clear(g_c), s	1.0	48.7	52.5	29.3	77.5	77.5	27.0	0.0	41.0	0.4	0.0	5.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.02	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	47	1161	924	630	857	899	909	0	695	126	0	122
V/C Ratio(X)	0.23	0.95	0.76	1.42	1.24	1.25	0.72	0.00	1.10	0.04	0.00	0.49
Avail Cap(c_a), veh/h	122	1161	924	630	857	899	909	0	695	133	0	129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.3	52.5	24.7	65.3	41.2	41.2	54.3	0.0	44.9	69.3	0.0	71.6
Incr Delay (d2), s/veh	2.5	16.9	5.8	199.6	119.8	121.7	2.8	0.0	65.7	0.1	0.0	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	26.5	32.5	31.4	66.4	70.1	13.6	0.0	43.3	0.2	0.0	2.7
LnGrp Delay(d), s/veh	78.8	69.4	30.6	265.0	161.1	162.9	57.1	0.0	110.6	69.4	0.0	74.6
LnGrp LOS	E	E	C	F	F	F	E		F	E		E
Approach Vol, veh/h	1815			3087			1422			65		
Approach Delay, s/veh	54.5			191.9			85.9			74.2		
Approach LOS	D			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.0	60.5		17.4	10.0	85.5		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	29	51.8		12.0	* 11	70.1		41.0				
Max Q Clear Time (g_c+Q), s	29	54.5		7.4	3.0	79.5		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				128.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	800	280	85	1845	325	310	120	125	150	65	450
Future Volume (veh/h)	695	800	280	85	1845	325	310	120	125	150	65	450
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	755	870	304	92	2005	353	337	130	136	163	71	489
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	2001	755	275	1699	649	286	1017	578	279	1010	669
Arrive On Green	0.14	0.39	0.39	0.08	0.33	0.33	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	3442	5085	1583	3442	5085	1559	3442	3539	1573	3442	3539	1570
Grp Volume(v), veh/h	755	870	304	92	2005	353	337	130	136	163	71	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1559	1721	1770	1573	1721	1770	1570
Q Serve(g_s), s	22.3	20.0	19.9	4.0	53.5	27.4	13.3	4.3	9.6	7.3	2.3	41.6
Cycle Q Clear(g_c), s	22.3	20.0	19.9	4.0	53.5	27.4	13.3	4.3	9.6	7.3	2.3	41.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	2001	755	275	1699	649	286	1017	578	279	1010	669
V/C Ratio(X)	1.57	0.43	0.40	0.33	1.18	0.54	1.18	0.13	0.24	0.58	0.07	0.73
Avail Cap(c_a), veh/h	480	2001	755	282	1699	649	286	1084	608	280	1077	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	35.5	27.1	69.6	53.3	35.4	73.3	42.2	35.1	70.9	41.7	38.5
Incr Delay (d2), s/veh	268.2	0.7	1.6	0.7	87.5	3.2	110.3	0.1	0.2	3.1	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh	28.5	9.5	9.0	2.0	38.8	12.4	10.7	2.1	4.2	3.6	1.1	18.8
LnGrp Delay(d),s/veh	337.0	36.2	28.7	70.3	140.8	38.6	183.7	42.2	35.3	74.0	41.7	42.2
LnGrp LOS	F	D	C	E	F	D	F	D	D	E	D	D
Approach Vol, veh/h	1929			2450			603			723		
Approach Delay, s/veh	152.8			123.4			119.7			49.3		
Approach LOS	F			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	58.5	70.5	19.0	52.0	28.0	61.0	18.7	52.4				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13	59.6	* 13	48.7	* 22	50.4	* 13	49.0				
Max Q Clear Time (g_c+I), s	19.0	22.0	15.3	43.6	24.3	55.5	9.3	11.6				
Green Ext Time (p_c), s	0.1	8.9	0.0	1.1	0.0	0.0	0.2	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay	123.6											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	730	265	630	1460	10	435	15	350	5	80	100
Future Volume (veh/h)	45	730	265	630	1460	10	435	15	350	5	80	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	793	288	685	1587	11	484	0	380	5	87	109
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1482	461	688	2173	15	529	0	553	10	175	158
Arrive On Green	0.07	0.29	0.29	0.20	0.42	0.42	0.15	0.00	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5210	36	3548	0	1583	101	1757	1583
Grp Volume(v), veh/h	49	793	288	685	1033	565	484	0	380	92	0	109
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1858	0	1583
Q Serve(g_s), s	2.6	13.1	15.8	19.9	25.5	25.5	13.4	0.0	14.9	4.7	0.0	6.7
Cycle Q Clear(g_c), s	2.6	13.1	15.8	19.9	25.5	25.5	13.4	0.0	14.9	4.7	0.0	6.7
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.05		1.00
Lane Grp Cap(c), veh/h	132	1482	461	688	1414	774	529	0	553	185	0	158
V/C Ratio(X)	0.37	0.54	0.62	1.00	0.73	0.73	0.92	0.00	0.69	0.50	0.00	0.69
Avail Cap(c_a), veh/h	177	1482	461	688	1414	774	529	0	553	186	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	29.7	30.7	40.0	24.4	24.4	41.9	0.0	27.9	42.6	0.0	43.5
Incr Delay (d2), s/veh	1.7	1.4	6.3	33.0	3.4	6.0	20.7	0.0	3.6	2.1	0.0	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.3	7.7	12.6	12.6	14.3	8.1	0.0	9.5	2.5	0.0	3.4
LnGrp Delay(d),s/veh	45.8	31.1	36.9	73.0	27.8	30.4	62.6	0.0	31.5	44.7	0.0	55.5
LnGrp LOS	D	C	D	E	C	C	E		C	D		E
Approach Vol, veh/h	1130			2283			864			201		
Approach Delay, s/veh	33.3			42.0			48.9			50.6		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.7	36.6		16.4	13.1	49.2		21.3				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.1			10.0	* 10	39.1		14.9				
Max Q Clear Time (g_c+I), s	17.8			8.7	4.6	27.5		16.9				
Green Ext Time (p_c), s	0.0	5.0		0.1	0.0	7.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	41.5											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (w. Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	80	65	135	60	85	40	70	570	15	35	1080	110
Future Volume (veh/h)	80	65	135	60	85	40	70	570	15	35	1080	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	79	82	147	65	92	43	76	620	16	38	1174	120
Adj No. of Lanes	1	1	1	1	1	1	2	1	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	253	210	160	168	140	105	1571	702	69	1499	661
Arrive On Green	0.14	0.14	0.14	0.09	0.09	0.09	0.06	0.44	0.44	0.04	0.42	0.42
Sat Flow, veh/h	1774	1863	1548	1774	1863	1550	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	79	82	147	65	92	43	76	620	16	38	1174	120
Grp Sat Flow(s), veh/h/ln	1774	1863	1548	1774	1863	1550	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.5	2.5	5.6	2.1	2.9	1.6	2.6	7.3	0.4	1.3	17.7	3.0
Cycle Q Clear(g_c), s	2.5	2.5	5.6	2.1	2.9	1.6	2.6	7.3	0.4	1.3	17.7	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	253	210	160	168	140	105	1571	702	69	1499	661
V/C Ratio(X)	0.33	0.32	0.70	0.41	0.55	0.31	0.73	0.39	0.02	0.55	0.78	0.18
Avail Cap(c_a), veh/h	517	543	451	517	543	452	144	1707	763	178	1775	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	24.1	25.5	26.6	26.9	26.3	28.6	11.6	9.7	29.2	15.4	11.1
Incr Delay (d2), s/veh	0.8	0.7	4.2	1.7	2.8	1.2	11.0	0.2	0.0	6.8	2.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	1.3	2.6	1.1	1.6	0.7	1.6	3.6	0.2	0.8	8.9	1.3
LnGrp Delay(d), s/veh	24.9	24.9	29.6	28.2	29.7	27.5	39.6	11.7	9.7	35.9	17.3	11.2
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h	308				200			712		1332		
Approach Delay, s/veh	27.2				28.7			14.7		17.3		
Approach LOS	C				C			B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.9			12.9	8.1	30.7		10.1				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.8			18.0	5.0	31.0		18.0				
Max Q Clear Time (g_c+I), s	9.3			7.6	4.6	19.7		4.9				
Green Ext Time (p_c), s	0.0	4.3		0.8	0.0	6.5		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				18.7								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	140	90	60	100	65	15	105	385	105	60	905	360
Future Volume (veh/h)	140	90	60	100	65	15	105	385	105	60	905	360
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	98	65	109	71	16	114	418	114	65	984	391
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	139	92	212	363	79	147	2565	799	90	1682	668
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.50	0.50	0.05	0.47	0.47
Sat Flow, veh/h	3442	1043	692	3442	2886	630	1774	5085	1583	1774	3564	1416
Grp Volume(v), veh/h	152	0	163	109	43	44	114	418	114	65	936	439
Grp Sat Flow(s), veh/h/ln	1721	0	1735	1721	1770	1746	1774	1695	1583	1774	1695	1589
Q Serve(g_s), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.2	2.8	2.6	14.5	14.5
Cycle Q Clear(g_c), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.2	2.8	2.6	14.5	14.5
Prop In Lane	1.00		0.40	1.00		0.36	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	238	0	232	212	223	220	147	2565	799	90	1600	750
V/C Ratio(X)	0.64	0.00	0.70	0.51	0.19	0.20	0.77	0.16	0.14	0.73	0.59	0.59
Avail Cap(c_a), veh/h	406	0	475	330	445	439	311	2565	799	224	1600	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	29.8	32.7	28.2	28.2	32.3	9.6	9.5	33.7	13.9	13.9
Incr Delay (d2), s/veh	2.8	0.0	3.9	1.9	0.4	0.4	8.4	0.1	0.4	10.5	1.6	3.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	3.3	1.1	0.8	0.8	2.6	1.5	1.3	1.5	7.1	7.0
LnGrp Delay(d), s/veh	35.5	0.0	33.7	34.6	28.6	28.7	40.7	9.8	9.9	44.2	15.4	17.2
LnGrp LOS	D		C	C	C	C	D	A	A	D	B	B
Approach Vol, veh/h		315			196			646			1440	
Approach Delay, s/veh		34.6			32.0			15.3			17.3	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	40.8	8.9	14.1	10.5	38.5	9.5	13.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.1	36.3	6.9	19.7	12.6	32.8	8.5	18.1				
Max Q Clear Time (g_c+I), s	4.6	5.2	4.2	8.5	6.5	16.5	5.1	3.6				
Green Ext Time (p_c), s	0.0	3.4	0.1	0.6	0.1	8.9	0.1	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					20.0							
HCM 2010 LOS					B							
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	95	100	115	430	150	90	230	740	650	280	1005	65
Future Volume (veh/h)	95	100	115	430	150	90	230	740	650	280	1005	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	109	125	467	163	98	250	804	707	304	1092	71
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	350	283	522	289	174	276	1677	513	330	1275	558
Arrive On Green	0.07	0.19	0.19	0.15	0.27	0.27	0.16	0.33	0.33	0.19	0.36	0.36
Sat Flow, veh/h	1774	1863	1507	3442	1082	651	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	103	109	125	467	0	261	250	804	707	304	1092	71
Grp Sat Flow(s), veh/h/ln	1774	1863	1507	1721	0	1733	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	1	1	6.3	9.1	16.6	0.0	16.2	17.2	15.6	41.0	20.9	35.5
Cycle Q Clear(g_c), s	7.1	6.3	9.1	16.6	0.0	16.2	17.2	15.6	41.0	20.9	35.5	3.8
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	350	283	522	0	463	276	1677	513	330	1275	558
V/C Ratio(X)	0.81	0.31	0.44	0.89	0.00	0.56	0.91	0.48	1.38	0.92	0.86	0.13
Avail Cap(c_a), veh/h	223	539	436	554	0	563	297	1677	513	357	1287	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	43.6	44.7	51.8	0.0	39.3	51.6	33.2	41.7	49.7	36.8	26.7
Incr Delay (d2), s/veh	11.2	0.5	1.1	16.4	0.0	1.1	28.3	0.2	181.9	27.5	5.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.9	3.3	3.9	9.0	0.0	7.9	10.6	7.3	43.5	12.7	18.3	1.6
LnGrp Delay(d), s/veh	68.0	44.1	45.8	68.2	0.0	40.4	79.9	33.4	223.6	77.2	42.7	26.8
LnGrp LOS	E	D	D	E		D	E	C	F	E	D	C
Approach Vol, veh/h	337				728			1761			1467	
Approach Delay, s/veh	52.0				58.2			116.4			49.1	
Approach LOS	D				E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.6	45.5	23.4	27.8	23.8	49.3	13.5	37.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	45.0	41.0	20.0	36.0	20.8	45.2	15.6	40.4				
Max Q Clear Time (g_c+Q_c), s	43.0	43.0	18.6	11.1	19.2	37.5	9.1	18.2				
Green Ext Time (p_c), s	0.2	0.0	0.3	1.0	0.1	4.5	0.1	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	78.5
HCM 2010 LOS	E

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	15	875	10	10	600	10	40	0	15	5	0	25
Future Volume (veh/h)	15	875	10	10	600	10	40	0	15	5	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	951	0	11	652	11	43	0	16	5	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1419	635	26	1406	24	146	0	125	9	0	51
Arrive On Green	0.02	0.40	0.00	0.01	0.39	0.39	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3559	60	1774	0	1526	252	0	1359
Grp Volume(v), veh/h	16	951	0	11	324	339	43	0	16	32	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1850	1774	0	1526	1610	0	0
Q Serve(g_s), s	0.3	8.5	0.0	0.2	5.3	5.3	0.9	0.0	0.4	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.3	8.5	0.0	0.2	5.3	5.3	0.9	0.0	0.4	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.16		0.84
Lane Grp Cap(c), veh/h	36	1419	635	26	699	731	146	0	125	61	0	0
V/C Ratio(X)	0.44	0.67	0.00	0.43	0.46	0.46	0.29	0.00	0.13	0.53	0.00	0.00
Avail Cap(c_a), veh/h	229	1919	859	229	960	1003	825	0	709	749	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.7	9.5	0.0	18.9	8.7	8.7	16.7	0.0	16.5	18.3	0.0	0.0
Incr Delay (d2), s/veh	8.2	0.6	0.0	11.0	0.5	0.5	1.1	0.0	0.5	7.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.2	4.2	0.0	0.2	2.6	2.7	0.5	0.0	0.2	0.4	0.0	0.0
LnGrp Delay(d), s/veh	27.0	10.1	0.0	29.9	9.2	9.1	17.8	0.0	16.9	25.3	0.0	0.0
LnGrp LOS	C	B		C	A	A	B		B	C		
Approach Vol, veh/h	967			674			59			32		
Approach Delay, s/veh	10.3			9.5			17.6			25.3		
Approach LOS	B			A			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0			6.0	5.3	19.8		7.7				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q_c), s	10.5			2.8	2.3	7.3		2.9				
Green Ext Time (p_c), s	0.0	4.8		0.1	0.0	3.5		0.2				

Intersection Summary

HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	8.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	155	680	470	80	80	110
Future Vol, veh/h	155	680	470	80	80	110
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	723	500	85	85	117

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	586	0	0 1597 544
Stage 1	-	-	- 544 -
Stage 2	-	-	- 1053 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	989	-	- 117 539
Stage 1	-	-	- 582 -
Stage 2	-	-	- 336 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	988	-	- 97 538
Mov Cap-2 Maneuver	-	-	- 145 -
Stage 1	-	-	- 484 -
Stage 2	-	-	- 336 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	59.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	251
HCM Lane V/C Ratio	0.167	-	-	-	0.805
HCM Control Delay (s)	9.4	-	-	-	59.9
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.6	-	-	-	6.2

Year 2035 PM (w. Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	750	545	5	0	5
Future Vol, veh/h	10	750	545	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	815	592	5	0	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	597	0	0 1429 592
Stage 1	-	-	- 592 -
Stage 2	-	-	- 837 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	980	-	- 149 506
Stage 1	-	-	- 553 -
Stage 2	-	-	- 425 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	980	-	- 147 506
Mov Cap-2 Maneuver	-	-	- 147 -
Stage 1	-	-	- 547 -
Stage 2	-	-	- 425 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	980	-	-	-	506
HCM Lane V/C Ratio	0.011	-	-	-	0.011
HCM Control Delay (s)	8.7	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Year 2035 PM (w. Melrose)
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	725	480	20	30	70
Future Vol, veh/h	25	725	480	20	30	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	788	522	22	33	76

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	544	0	0 1375 533
Stage 1	-	-	- 533 -
Stage 2	-	-	- 842 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1025	-	- 160 547
Stage 1	-	-	- 588 -
Stage 2	-	-	- 423 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1025	-	- 152 547
Mov Cap-2 Maneuver	-	-	- 152 -
Stage 1	-	-	- 560 -
Stage 2	-	-	- 423 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	19.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1025	-	-	-	152	547
HCM Lane V/C Ratio	0.027	-	-	-	0.215	0.139
HCM Control Delay (s)	8.6	0	-	-	35	12.6
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	0.5

Year 2035 PM (w. Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	175	580	290	25	30	115
Future Vol, veh/h	175	580	290	25	30	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	190	630	315	27	33	125

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	342	0	0 1339 329
Stage 1	-	-	- 329 -
Stage 2	-	-	- 1010 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1217	-	- 168 712
Stage 1	-	-	- 729 -
Stage 2	-	-	- 352 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1217	-	- 128 712
Mov Cap-2 Maneuver	-	-	- 128 -
Stage 1	-	-	- 554 -
Stage 2	-	-	- 352 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1217	-	-	-	366
HCM Lane V/C Ratio	0.156	-	-	-	0.431
HCM Control Delay (s)	8.5	0	-	-	22.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	2.1

Year 2035 PM (w. Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				 	 			
Traffic Volume (veh/h)	225	265	95	1935	1215	145		
Future Volume (veh/h)	225	265	95	1935	1215	145		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	245	288	103	2103	1321	158		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	368	329	139	2367	1907	853		
Arrive On Green	0.21	0.21	0.08	0.67	0.54	0.54		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	245	288	103	2103	1321	158		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	14.0	19.4	6.2	53.3	30.2	5.6		
Cycle Q Clear(g_c), s	14.0	19.4	6.2	53.3	30.2	5.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	368	329	139	2367	1907	853		
V/C Ratio(X)	0.67	0.88	0.74	0.89	0.69	0.19		
Avail Cap(c_a), veh/h	532	475	153	2367	1907	853		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.1	42.2	49.6	14.9	18.7	13.0		
Incr Delay (d2), s/veh	2.1	12.2	15.9	5.5	2.1	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.1	16.8	3.7	27.5	15.2	2.6		
LnGrp Delay(d),s/veh	42.2	54.4	65.5	20.3	20.8	13.5		
LnGrp LOS	D	D	E	C	C	B		
Approach Vol, veh/h	533			2206	1479			
Approach Delay, s/veh	48.8			22.4	20.0			
Approach LOS	D			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		81.1		28.9	14.3	66.8		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9.5	48.2		
Max Q Clear Time (g_c+1), s		55.3		21.4	8.2	32.2		
Green Ext Time (p_c), s		7.2		1.4	0.0	9.3		
Intersection Summary								
HCM 2010 Ctrl Delay			24.9					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	110	95	860	65	50	195	985	1435	45	970	40
Future Volume (veh/h)	50	110	95	860	65	50	195	985	1435	45	970	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	120	103	935	71	54	212	1071	1560	49	1054	43
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	365	157	1016	279	212	226	1464	1924	63	1115	45
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.13	0.41	0.41	0.04	0.32	0.32
Sat Flow, veh/h	1774	3539	1523	3548	976	742	1774	3539	2723	1774	3463	141
Grp Volume(v), veh/h	54	120	103	935	0	125	212	1071	1560	49	539	558
Grp Sat Flow(s),veh/h/ln	1774	1770	1523	1774	0	1718	1774	1770	1361	1774	1770	1834
Q Serve(g_s), s	3.1	3.5	7.3	28.5	0.0	6.2	13.2	28.4	44.9	3.1	33.1	33.1
Cycle Q Clear(g_c), s	3.1	3.5	7.3	28.5	0.0	6.2	13.2	28.4	44.9	3.1	33.1	33.1
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	183	365	157	1016	0	492	226	1464	1924	63	570	591
V/C Ratio(X)	0.30	0.33	0.66	0.92	0.00	0.25	0.94	0.73	0.81	0.78	0.95	0.95
Avail Cap(c_a), veh/h	286	571	246	1065	0	516	226	1464	1924	94	576	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	46.4	48.1	38.6	0.0	30.6	48.2	27.5	11.8	53.4	36.9	36.9
Incr Delay (d2), s/veh	0.9	0.5	4.6	12.3	0.0	0.3	43.1	1.9	2.7	21.0	24.6	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.7	3.3	15.6	0.0	3.0	9.2	14.2	24.6	1.9	20.0	20.7
LnGrp Delay(d),s/veh	47.2	47.0	52.7	50.9	0.0	30.9	91.3	29.4	14.5	74.3	61.5	60.9
LnGrp LOS	D	D	D	D		C	F	C	B	E	E	E
Approach Vol, veh/h	277			1060			2843			1146		
Approach Delay, s/veh	49.1			48.5			25.8			61.7		
Approach LOS	D			D			C			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		50.7		16.0	18.7	40.4		36.4				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		44.6		18.0	14.2	36.3		33.5				
Max Q Clear Time (g_c+1), s		46.9		9.3	15.2	35.1		30.5				
Green Ext Time (p_c), s		0.0		0.8	0.0	0.8		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				39.3								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖		↖	↖			↖	↖	↖	↖	↖
Traffic Volume (veh/h)	120	1015	10	25	825	95	0	5	30	80	5	105
Future Volume (veh/h)	120	1015	10	25	825	95	0	5	30	80	5	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	1103	11	27	897	103	0	5	33	87	5	114
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	1693	17	58	1298	149	0	275	227	367	16	234
Arrive On Green	0.10	0.47	0.47	0.03	0.41	0.41	0.00	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3589	36	1774	3189	366	0	1863	1538	1266	110	1583
Grp Volume(v), veh/h	130	544	570	27	498	502	0	5	33	92	0	114
Grp Sat Flow(s),veh/h/ln	1774	1770	1855	1774	1770	1785	0	1863	1538	1376	0	1583
Q Serve(g_s), s	2.8	9.1	9.1	0.6	9.0	9.0	0.0	0.1	0.7	2.2	0.0	2.6
Cycle Q Clear(g_c), s	2.8	9.1	9.1	0.6	9.0	9.0	0.0	0.1	0.7	2.3	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.21	0.00		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	172	835	875	58	720	727	0	275	227	384	0	234
V/C Ratio(X)	0.75	0.65	0.65	0.47	0.69	0.69	0.00	0.02	0.15	0.24	0.00	0.49
Avail Cap(c_a), veh/h	334	1073	1125	229	968	976	0	865	714	817	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	7.8	7.8	18.4	9.5	9.5	0.0	14.1	14.4	15.1	0.0	15.2
Incr Delay (d2), s/veh	6.5	0.9	0.9	5.8	1.3	1.3	0.0	0.0	0.3	0.3	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.6	4.8	0.4	4.6	4.6	0.0	0.0	0.3	0.9	0.0	1.2
LnGrp Delay(d),s/veh	23.6	8.7	8.7	24.2	10.8	10.8	0.0	14.2	14.7	15.4	0.0	16.8
LnGrp LOS	C	A	A	C	B	B		B	B	B		B
Approach Vol, veh/h	1244			1027			38			206		
Approach Delay, s/veh	10.3			11.1			14.6			16.1		
Approach LOS	B			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.8			10.2	8.3	20.3		10.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	7.3	21.2		18.0				
Max Q Clear Time (g_c+I), s	11.1			4.6	4.8	11.0		2.7				
Green Ext Time (p_c), s	0.0	5.9		0.7	0.1	4.7		0.1				

Intersection Summary

HCM 2010 Ctrl Delay 11.2
HCM 2010 LOS B

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖		↖	↖		↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	25	25	15	445	25	975	20	490	480	980	380	35
Future Volume (veh/h)	25	25	15	445	25	975	20	490	480	980	380	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	27	16	484	27	1060	22	533	522	1065	413	38
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	57	34	471	26	1539	37	894	836	963	1811	810
Arrive On Green	0.05	0.05	0.05	0.28	0.28	0.28	0.02	0.25	0.25	0.28	0.51	0.51
Sat Flow, veh/h	1774	1074	637	1685	94	2715	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	27	0	43	511	0	1060	22	533	522	1065	413	38
Grp Sat Flow(s),veh/h/ln	1774	0	1711	1779	0	1357	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	17.8	31.6	37.5	8.6	1.6
Cycle Q Clear(g_c), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	17.8	31.6	37.5	8.6	1.6
Prop In Lane	1.00		0.37	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	91	498	0	1539	37	894	836	963	1811	810
V/C Ratio(X)	0.28	0.00	0.47	1.03	0.00	0.69	0.59	0.60	0.62	1.11	0.23	0.05
Avail Cap(c_a), veh/h	437	0	421	498	0	1539	82	898	838	963	1811	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	61.6	48.3	0.0	21.3	65.1	44.1	22.0	48.3	18.1	16.4
Incr Delay (d2), s/veh	1.6	0.0	3.7	47.4	0.0	1.3	14.3	1.1	1.5	62.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	24.9	0.0	14.4	1.0	8.8	19.6	26.2	4.3	0.7
LnGrp Delay(d),s/veh	62.6	0.0	65.3	95.6	0.0	22.6	79.3	45.1	23.5	110.8	18.2	16.4
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	70			1571			1077			1516		
Approach Delay, s/veh	64.3			46.4			35.3			83.2		
Approach LOS	E			D			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.0	38.4		11.7	7.3	73.1		42.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	37.5			34.0		65.3		37.5				
Max Q Clear Time (g_c+I), s	33.6			5.3	3.6	10.6		39.5				
Green Ext Time (p_c), s	0.0	0.2		0.3	0.0	3.2		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 57.1
HCM 2010 LOS E

Notes

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	1175	50	55	45	25	5	90	1305	40	10	905	815
Future Volume (veh/h)	1175	50	55	45	25	5	90	1305	40	10	905	815
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1277	54	0	49	27	5	98	1418	43	11	984	886
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1243	673	572	65	36	89	122	1449	44	23	1265	2002
Arrive On Green	0.36	0.36	0.00	0.06	0.06	0.06	0.07	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1163	641	1583	1774	3507	106	1774	3539	2787
Grp Volume(v), veh/h	1277	54	0	76	0	5	98	715	746	11	984	886
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1805	0	1583	1774	1770	1844	1774	1770	1393
Q Serve(g_s), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	45.7	45.9	0.7	28.4	15.1
Cycle Q Clear(g_c), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	45.7	45.9	0.7	28.4	15.1
Prop In Lane	1.00	1.00	0.64	1.00	1.00	1.00	1.00	0.06	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1243	673	572	101	0	89	122	731	762	23	1265	2002
V/C Ratio(X)	1.03	0.08	0.00	0.75	0.00	0.06	0.80	0.98	0.98	0.48	0.78	0.44
Avail Cap(c_a), veh/h	1243	673	572	283	0	248	128	731	762	77	1361	2078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	24.2	0.0	53.4	0.0	51.4	52.8	33.2	33.2	56.3	32.9	6.7
Incr Delay (d2), s/veh	32.8	0.1	0.0	10.5	0.0	0.3	28.8	27.6	27.5	14.8	2.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	25.3	1.1	0.0	2.7	0.0	0.2	4.1	27.8	29.0	0.4	14.3	13.2
LnGrp Delay(d), s/veh	69.6	24.2	0.0	63.9	0.0	51.6	81.6	60.7	60.7	71.2	35.6	6.8
LnGrp LOS	F	C		E		D	F	E	E	D	D	A
Approach Vol, veh/h	1331				81		1559			1881		
Approach Delay, s/veh	67.7				63.2		62.0			22.3		
Approach LOS	E				E		E			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.0			46.0	12.4	45.6		11.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	47.5			41.5	8.3	44.2		18.0				
Max Q Clear Time (g_c+I), s	47.9			43.5	8.3	30.4		6.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				48.2								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	700	765	240	260	640	135	320	825	320	205	650	530
Future Volume (veh/h)	700	765	240	260	640	135	320	825	320	205	650	530
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	761	832	0	283	696	147	348	897	348	223	707	576
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	1050	470	356	595	126	306	1003	449	207	806	663
Arrive On Green	0.19	0.30	0.00	0.10	0.21	0.21	0.17	0.28	0.28	0.12	0.23	0.23
Sat Flow, veh/h	3442	3539	1583	3442	2895	611	1774	3539	1583	1774	3539	1560
Grp Volume(v), veh/h	761	832	0	283	425	418	348	897	348	223	707	576
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1736	1774	1770	1583	1774	1770	1560
Q Serve(g_s), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	21.9	18.2	10.5	17.3	20.5
Cycle Q Clear(g_c), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	21.9	18.2	10.5	17.3	20.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	669	1050	470	356	364	357	306	1003	449	207	806	663
V/C Ratio(X)	1.14	0.79	0.00	0.80	1.17	1.17	1.14	0.89	0.78	1.08	0.88	0.87
Avail Cap(c_a), veh/h	669	1050	470	382	364	357	306	1003	449	207	806	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.1	0.0	39.4	35.8	35.8	37.3	31.0	29.6	39.8	33.5	23.8
Incr Delay (d2), s/veh	79.1	4.2	0.0	10.5	101.7	102.7	94.5	10.4	8.3	84.7	10.8	11.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	15.6	10.1	0.0	3.9	19.3	19.0	15.6	12.2	8.9	10.0	9.6	15.1
LnGrp Delay(d), s/veh	115.4	33.3	0.0	49.9	137.5	138.4	131.8	41.4	37.9	124.4	44.3	35.6
LnGrp LOS	F	C		D	F	F	F	D	D	F	D	D
Approach Vol, veh/h	1593			1126			1593			1506		
Approach Delay, s/veh	72.5			115.8			60.4			52.8		
Approach LOS	E			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	13.8	31.2	20.0	25.0	22.0	23.0					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.5	10.0	26.0	15.5	20.5	17.5	18.5					
Max Q Clear Time (g_c+I), s	23.9	9.2	21.5	17.5	22.5	19.5	20.5					
Green Ext Time (p_c), s	0.0	1.1	0.1	2.3	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay				72.5								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	260	895	165	40	490	360	205	670	5	255	610	90
Future Volume (veh/h)	260	895	165	40	490	360	205	670	5	255	610	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	283	973	179	43	533	391	223	728	5	277	663	98
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	1318	577	63	591	433	257	816	6	311	793	117
Arrive On Green	0.10	0.37	0.37	0.04	0.31	0.31	0.14	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	3442	3539	1548	1774	1934	1418	1774	3602	25	1774	3085	455
Grp Volume(v), veh/h	283	973	179	43	488	436	223	358	375	277	380	381
Grp Sat Flow(s), veh/h/ln	1721	1770	1548	1774	1770	1583	1774	1770	1858	1774	1770	1771
Q Serve(g_s), s	7.6	22.5	7.8	2.3	25.0	25.0	11.6	18.6	18.6	14.5	19.2	19.3
Cycle Q Clear(g_c), s	7.6	22.5	7.8	2.3	25.0	25.0	11.6	18.6	18.6	14.5	19.2	19.3
Prop In Lane	1.00	1.00	1.00	1.00	0.90	1.00	0.90	1.00	0.01	1.00	0.00	0.26
Lane Grp Cap(c), veh/h	353	1318	577	63	541	484	257	401	421	311	455	455
V/C Ratio(X)	0.80	0.74	0.31	0.68	0.90	0.90	0.87	0.89	0.89	0.89	0.84	0.84
Avail Cap(c_a), veh/h	382	1341	587	96	570	510	290	420	441	346	476	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	25.7	21.1	45.1	31.5	31.5	39.6	35.5	35.5	38.2	33.3	33.3
Incr Delay (d2), s/veh	11.0	2.2	0.3	11.9	17.1	18.7	21.5	20.2	19.4	22.1	11.8	12.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	11.3	3.4	1.3	14.8	13.4	7.2	11.3	11.8	9.0	10.9	10.9
LnGrp Delay(d), s/veh	52.5	27.9	21.4	57.0	48.6	50.2	61.1	55.7	55.0	60.3	45.1	45.3
LnGrp LOS	D	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h	1435				967			956			1038	
Approach Delay, s/veh	31.9				49.7			56.6			49.2	
Approach LOS	C				D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s/7.9	39.8	18.2	28.8	14.2	33.4	21.1	25.9					
Change Period (Y+Rc), s/4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s/35.9	15.5	25.5	10.5	30.5	18.5	22.5						
Max Q Clear Time (g_c+1/3), s/24.5	13.6	21.3	9.6	27.0	16.5	20.6						
Green Ext Time (p_c), s/0.0	5.6	0.1	1.8	0.1	1.9	0.2	0.9					

Intersection Summary

HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖↗	↖↗		↖↗	↖↗		↖↗	↖↗		↖↗	↖↗	
Traffic Volume (veh/h)	625	2240	0	0	1550	265	0	0	0	265	0	430
Future Volume (veh/h)	625	2240	0	0	1550	265	0	0	0	265	0	430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	679	2435	0	0	1685	288	0	0	0	288	0	467
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
Arrive On Green	0.14	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	679	2435	0	0	1685	288	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	25.3	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.3	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
V/C Ratio(X)	1.40	0.72	0.00	0.00	0.61	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	484	3382	0	0	2772	1240	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	77.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	193.8	1.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	25.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	271.1	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	3114				1973			0				
Approach Delay, s/veh	60.6				0.1			0.0				
Approach LOS	E				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	180.0				31.0	149.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	91.9				* 25	60.9		44.0				
Max Q Clear Time (g_c+1/3), s	19.6				27.3	2.0		0.0				
Green Ext Time (p_c), s	44.1				0.0	26.4		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	2070	360	305	1395	120	330	370	305	100	280	55
Future Volume (veh/h)	75	2070	360	305	1395	120	330	370	305	100	280	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	82	2250	391	332	1516	130	359	402	332	109	304	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	1511	676	210	1601	716	273	452	370	228	689	134
Arrive On Green	0.06	0.29	0.29	0.12	0.45	0.45	0.08	0.25	0.25	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1835	1501	3442	2948	574
Grp Volume(v), veh/h	82	2250	391	332	1516	130	359	388	346	109	181	183
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1566	1721	1770	1753
Q Serve(g_s), s	8.1	76.9	38.0	21.3	73.8	8.8	14.3	38.0	38.5	5.5	15.7	16.1
Cycle Q Clear(g_c), s	8.1	76.9	38.0	21.3	73.8	8.8	14.3	38.0	38.5	5.5	15.7	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.33
Lane Grp Cap(c), veh/h	165	1511	676	210	1601	716	273	436	386	228	413	409
V/C Ratio(X)	0.50	1.49	0.58	1.58	0.95	0.18	1.31	0.89	0.90	0.48	0.44	0.45
Avail Cap(c_a), veh/h	168	1511	676	210	1601	716	273	495	438	229	472	467
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.16	0.16	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	64.3	50.4	79.3	47.2	29.4	82.8	65.4	65.6	81.0	58.9	59.0
Incr Delay (d2), s/veh	0.4	220.5	0.6	268.8	5.2	0.2	164.5	16.4	19.3	1.5	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	83.9	16.8	26.1	37.2	3.9	13.0	20.6	18.7	2.7	7.8	7.9
LnGrp Delay(d),s/veh	80.7	284.8	51.0	348.1	52.4	29.6	247.3	81.8	84.9	82.6	59.6	59.8
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2723			1978			1093			473		
Approach Delay, s/veh	245.1			100.5			137.1			65.0		
Approach LOS	F			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	84.9	20.0	48.1	22.4	89.4	17.6	50.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	70.9	* 14	48.0	* 17	75.2	* 12	50.3					
Max Q Clear Time (g_c+Qg), s	78.9	16.3	18.1	10.1	75.8	7.5	40.5					
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.1	0.0	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay	167.0											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	1935	300	185	1365	15	245	280	215	10	115	160
Future Volume (veh/h)	240	1935	300	185	1365	15	245	280	215	10	115	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	261	2103	326	201	1484	16	266	304	234	11	125	174
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1919	848	171	1776	19	309	363	272	54	230	206
Arrive On Green	0.14	0.54	0.54	0.10	0.50	0.50	0.09	0.19	0.19	0.03	0.13	0.13
Sat Flow, veh/h	1774	3539	1563	1774	3587	39	3442	1917	1434	1774	1770	1580
Grp Volume(v), veh/h	261	2103	326	201	732	768	266	280	258	11	125	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1582	1774	1770	1580
Q Serve(g_s), s	25.8	97.6	21.7	17.3	64.1	64.2	13.7	27.4	28.4	1.1	11.9	19.4
Cycle Q Clear(g_c), s	25.8	97.6	21.7	17.3	64.1	64.2	13.7	27.4	28.4	1.1	11.9	19.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	254	1919	848	171	876	919	309	335	300	54	230	206
V/C Ratio(X)	1.03	1.10	0.38	1.18	0.84	0.84	0.86	0.84	0.86	0.20	0.54	0.85
Avail Cap(c_a), veh/h	254	1919	848	171	876	919	402	433	387	128	354	316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.1	41.2	23.8	81.3	39.1	39.2	80.8	70.3	70.7	85.1	73.3	76.5
Incr Delay (d2), s/veh	24.1	44.0	0.1	112.3	6.1	5.9	14.0	10.7	14.5	1.8	2.0	12.1
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	59.2	9.4	13.8	32.8	34.4	7.1	14.4	13.7	0.6	6.0	9.1
LnGrp Delay(d),s/veh	101.3	85.2	23.9	193.6	45.3	45.1	94.8	80.9	85.2	86.9	75.2	88.6
LnGrp LOS	F	F	C	F	D	D	F	F	F	F	E	F
Approach Vol, veh/h	2690			1701			804			310		
Approach Delay, s/veh	79.3			62.7			86.9			83.2		
Approach LOS	E			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	105.6	21.8	29.5	31.5	97.1	11.2	40.2				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	80.2	* 21	36.0	* 26	71.7	* 13	44.0					
Max Q Clear Time (g_c+Qg), s	99.6	15.7	21.4	27.8	66.2	3.1	30.4					
Green Ext Time (p_c), s	0.0	0.0	0.4	1.5	0.0	4.1	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay	75.5											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1955	155	150	1410	70	85	155	185	35	75	35
Future Volume (veh/h)	50	1955	155	150	1410	70	85	155	185	35	75	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	2125	168	163	1533	76	92	168	201	38	82	38
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1962	990	141	2023	983	246	304	255	195	276	326
Arrive On Green	0.06	0.55	0.55	0.08	0.57	0.57	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1534
Grp Volume(v), veh/h	54	2125	168	163	1533	76	92	168	201	38	82	38
Grp Sat Flow(s),veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1534
Q Serve(g_s), s	5.3	99.8	8.0	14.3	58.9	3.4	4.6	14.9	22.2	1.9	7.1	3.6
Cycle Q Clear(g_c), s	5.3	99.8	8.0	14.3	58.9	3.4	4.6	14.9	22.2	1.9	7.1	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1962	990	141	2023	983	246	304	255	195	276	326
V/C Ratio(X)	0.49	1.08	0.17	1.16	0.76	0.08	0.37	0.55	0.79	0.19	0.30	0.12
Avail Cap(c_a), veh/h	118	1962	990	141	2023	983	249	455	382	229	445	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.6	40.1	14.1	82.8	29.2	13.1	79.7	69.3	72.4	81.0	68.3	57.5
Incr Delay (d2), s/veh	0.3	38.5	0.0	124.0	2.7	0.2	0.9	1.6	6.4	0.5	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	59.0	3.5	11.9	29.5	1.5	2.2	7.8	10.1	0.9	3.7	1.5
LnGrp Delay(d),s/veh	81.9	78.7	14.1	206.9	31.9	13.2	80.7	70.9	78.8	81.5	68.9	57.7
LnGrp LOS	F	F	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2347			1772			461			158		
Approach Delay, s/veh	74.1			47.2			76.3			69.2		
Approach LOS	E			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	107.8	18.6	33.7	16.9	110.9	15.9	36.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	11.4	83.3	* 13	43.0	* 12	85.6	* 12	44.0				
Max Q Clear Time (g_c+maxg), s	101.8	6.6	9.1	7.3	60.9	3.9	24.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	13.9	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	64.1											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	715	1565	80	330	1125	675	70	1030	400	550	960	435
Future Volume (veh/h)	715	1565	80	330	1125	675	70	1030	400	550	960	435
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	777	1701	87	359	1223	734	76	1120	435	598	1043	473
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	541	1497	569	293	1130	557	224	864	327	446	1450	884
Arrive On Green	0.16	0.29	0.29	0.09	0.22	0.22	0.07	0.35	0.35	0.13	0.41	0.41
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2501	947	3442	3539	1550
Grp Volume(v), veh/h	777	1701	87	359	1223	734	76	784	771	598	1043	473
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1679	1721	1770	1550
Q Serve(g_s), s	28.3	53.0	6.7	15.3	40.0	40.0	3.8	62.2	62.2	23.3	44.4	34.2
Cycle Q Clear(g_c), s	28.3	53.0	6.7	15.3	40.0	40.0	3.8	62.2	62.2	23.3	44.4	34.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	541	1497	569	293	1130	557	224	611	580	446	1450	884
V/C Ratio(X)	1.44	1.14	0.15	1.23	1.08	1.32	0.34	1.28	1.33	1.34	0.72	0.53
Avail Cap(c_a), veh/h	541	1497	569	293	1130	557	239	611	580	446	1450	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.8	63.5	39.1	82.3	70.0	58.3	80.4	58.9	58.9	78.4	44.4	24.3
Incr Delay (d2), s/veh	206.6	70.0	0.6	128.6	51.9	155.5	0.9	139.1	159.7	168.5	1.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.0	34.5	3.0	12.5	24.2	51.7	1.8	54.0	54.6	21.5	22.1	14.7
LnGrp Delay(d),s/veh	282.4	133.5	39.6	211.0	121.9	213.9	81.3	198.0	218.6	246.9	46.2	24.9
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2565			2316			1631			2114		
Approach Delay, s/veh	175.4			164.9			202.3			98.2		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	61.0	17.4	80.6	34.0	48.0	29.0	69.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	11.5	53.0	* 13	73.0	* 28	40.0	* 23	62.2				
Max Q Clear Time (g_c+maxg), s	55.0	5.8	46.4	30.3	42.0	25.3	64.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	11.1	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	158.8											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	20	1965	530	470	1525	20	600	20	840	5	5	5
Future Volume (veh/h)	20	1965	530	470	1525	20	600	20	840	5	5	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	2136	576	511	1658	22	668	0	913	5	5	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1582	1059	503	1975	26	808	0	587	62	30	30
Arrive On Green	0.04	0.45	0.45	0.15	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3575	47	3548	0	1563	1774	846	846
Grp Volume(v), veh/h	22	2136	576	511	819	861	668	0	913	5	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1721	1770	1853	1774	0	1563	1774	0	1691
Q Serve(g_s), s	2.2	80.5	34.2	26.3	69.5	69.9	32.2	0.0	41.0	0.5	0.0	1.0
Cycle Q Clear(g_c), s	2.2	80.5	34.2	26.3	69.5	69.9	32.2	0.0	41.0	0.5	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	72	1582	1059	503	978	1024	808	0	587	62	0	59
V/C Ratio(X)	0.30	1.35	0.54	1.02	0.84	0.84	0.83	0.00	1.55	0.08	0.00	0.17
Avail Cap(c_a), veh/h	108	1582	1059	503	978	1024	808	0	587	118	0	113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.9	49.8	15.1	76.8	33.6	33.7	66.1	0.0	56.5	84.0	0.0	84.3
Incr Delay (d2), s/veh	2.3	161.8	2.0	44.3	8.5	8.3	7.1	0.0	257.9	0.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	74.9	25.7	15.6	36.2	38.0	16.7	0.0	71.2	0.3	0.0	0.5
LnGrp Delay(d),s/veh	86.2	211.5	17.1	121.1	42.1	42.0	73.2	0.0	314.3	84.6	0.0	85.6
LnGrp LOS	F	F	B	F	D	D	E		F	F		F
Approach Vol, veh/h	2734			2191			1581			15		
Approach Delay, s/veh	169.6			60.5			212.4			85.2		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	88.5		12.4	13.0	107.4		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (G_max), s	74.8			12.0	* 11	90.1		41.0				
Max Q Clear Time (g_c+Q), s	82.5			3.0	4.2	71.9		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	10.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	143.1											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	155	1965	470	50	1340	50	285	15	105	75	15	150
Future Volume (veh/h)	155	1965	470	50	1340	50	285	15	105	75	15	150
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	168	2136	511	54	1457	54	310	16	114	82	16	163
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	2987	1082	232	2963	1023	331	473	318	244	384	286
Arrive On Green	0.07	0.59	0.59	0.07	0.58	0.58	0.10	0.13	0.13	0.07	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	168	2136	511	54	1457	54	310	16	114	82	16	163
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	8.6	53.8	27.1	2.7	30.2	2.2	16.1	0.7	11.2	4.1	0.7	16.9
Cycle Q Clear(g_c), s	8.6	53.8	27.1	2.7	30.2	2.2	16.1	0.7	11.2	4.1	0.7	16.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	2987	1082	232	2963	1023	331	473	318	244	384	286
V/C Ratio(X)	0.68	0.72	0.47	0.23	0.49	0.05	0.94	0.03	0.36	0.34	0.04	0.57
Avail Cap(c_a), veh/h	275	2987	1082	249	2963	1023	331	1028	567	249	944	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.4	26.4	13.3	79.5	22.0	11.2	80.8	67.9	61.9	79.6	71.8	67.3
Incr Delay (d2), s/veh	5.7	1.5	1.5	0.5	0.6	0.1	33.5	0.0	0.7	0.8	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3	25.5	12.2	1.3	14.2	1.0	9.2	0.3	5.0	2.0	0.4	7.5
LnGrp Delay(d),s/veh	87.1	27.9	14.8	80.0	22.6	11.3	114.3	67.9	62.6	80.4	71.9	69.1
LnGrp LOS	F	C	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2815			1565			440			261		
Approach Delay, s/veh	29.1			24.2			99.2			72.8		
Approach LOS	C			C			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	57.8	113.2	23.0	25.9	18.7	112.4	18.5	30.5				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	76.4	* 17	48.0	* 14	75.0	* 13	52.3					
Max Q Clear Time (g_c+Q), s	55.8	18.1	18.9	10.6	32.2	6.1	13.2					
Green Ext Time (p_c), s	0.1	17.3	0.0	0.6	0.2	13.2	0.1	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	35.9											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1755	330	610	970	5	240	30	370	20	35	75
Future Volume (veh/h)	45	1755	330	610	970	5	240	30	370	20	35	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	1908	359	663	1054	5	285	0	402	22	38	82
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1983	617	697	2744	13	384	0	492	55	96	131
Arrive On Green	0.07	0.39	0.39	0.20	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5224	25	3548	0	1583	671	1158	1583
Grp Volume(v), veh/h	49	1908	359	663	684	375	285	0	402	60	0	82
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1858	1774	0	1583	1829	0	1583
Q Serve(g_s), s	3.2	44.0	21.5	22.8	14.4	14.4	9.3	0.0	13.0	3.7	0.0	6.0
Cycle Q Clear(g_c), s	3.2	44.0	21.5	22.8	14.4	14.4	9.3	0.0	13.0	3.7	0.0	6.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.37		1.00
Lane Grp Cap(c), veh/h	119	1983	617	697	1781	976	384	0	492	151	0	131
V/C Ratio(X)	0.41	0.96	0.58	0.95	0.38	0.38	0.74	0.00	0.82	0.40	0.00	0.63
Avail Cap(c_a), veh/h	148	1983	617	697	1781	976	384	0	492	152	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.7	35.7	28.9	47.3	16.9	16.9	51.9	0.0	38.2	52.2	0.0	53.3
Incr Delay (d2), s/veh	2.3	13.1	4.0	22.8	0.6	1.1	7.5	0.0	10.3	1.7	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	22.9	10.1	13.1	6.9	7.7	5.0	0.0	13.7	2.0	0.0	3.0
LnGrp Delay(d),s/veh	56.0	48.8	32.9	70.1	17.6	18.1	59.4	0.0	48.5	53.9	0.0	62.2
LnGrp LOS	E	D	C	E	B	B	E		D	D		E
Approach Vol, veh/h	2316			1722			687			142		
Approach Delay, s/veh	46.5			37.9			53.0			58.7		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	54.3		16.3	13.7	70.5		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax),s	24.0	46.7		10.0	* 10	61.0		13.0				
Max Q Clear Time (g_c+Q),s	24.8	46.0		8.0	5.2	16.4		15.0				
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	9.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				44.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (w. Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	105	140	25	90	45	220	985	55	55	960	225
Future Volume (veh/h)	175	105	140	25	90	45	220	985	55	55	960	225
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	167	152	27	98	49	239	1071	60	60	1043	245
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	260	217	147	155	130	283	1705	738	86	1310	586
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.16	0.48	0.48	0.05	0.37	0.37
Sat Flow, veh/h	1774	1863	1553	1774	1863	1560	1774	3539	1532	1774	3539	1582
Grp Volume(v), veh/h	152	167	152	27	98	49	239	1071	60	60	1043	245
Grp Sat Flow(s),veh/h/ln	1774	1863	1553	1774	1863	1560	1774	1770	1532	1774	1770	1582
Q Serve(g_s), s	5.9	6.2	6.8	1.0	3.7	2.2	9.5	16.4	1.5	2.4	19.1	8.4
Cycle Q Clear(g_c), s	5.9	6.2	6.8	1.0	3.7	2.2	9.5	16.4	1.5	2.4	19.1	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	260	217	147	155	130	283	1705	738	86	1310	586
V/C Ratio(X)	0.61	0.64	0.70	0.18	0.63	0.38	0.84	0.63	0.08	0.70	0.80	0.42
Avail Cap(c_a), veh/h	439	461	384	439	461	386	354	1941	840	149	1532	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	29.6	29.9	31.1	32.3	31.6	29.7	14.0	10.2	34.1	20.5	17.1
Incr Delay (d2), s/veh	2.5	2.6	4.1	0.6	4.2	1.8	14.0	0.5	0.0	9.9	2.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	3.3	3.1	0.5	2.1	1.0	5.8	8.0	0.7	1.4	9.7	3.8
LnGrp Delay(d),s/veh	31.9	32.2	34.0	31.6	36.5	33.4	43.7	14.5	10.2	44.0	23.1	17.6
LnGrp LOS	C	C	C	C	D	C	D	B	B	D	C	B
Approach Vol, veh/h	471			174			1370			1348		
Approach Delay, s/veh	32.7			34.9			19.4			23.0		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.5			14.6	16.1	31.4		10.5				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	39.9			18.0	14.5	31.5		18.0				
Max Q Clear Time (g_c+Q), s	18.4			8.8	11.5	21.1		5.7				
Green Ext Time (p_c), s	0.0	8.4		1.4	0.2	5.8		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				23.5								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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APPENDIX K

INTERSECTION ANALYSIS WORKSHEETS – YEAR 2035 WITH PROJECT

Year 2035 + Proj AM (w. Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	475	30	85	185	105	65	55	1037	65	15	318	35
Future Volume (veh/h)	475	30	85	185	105	65	55	1037	65	15	318	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	516	33	92	201	114	71	60	1127	71	16	346	38
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	90	250	311	220	128	94	1933	599	35	1616	174
Arrive On Green	0.19	0.21	0.21	0.09	0.10	0.10	0.05	0.38	0.38	0.02	0.35	0.35
Sat Flow, veh/h	3442	435	1213	3442	2153	1254	1774	5085	1577	1774	4661	502
Grp Volume(v), veh/h	516	0	125	201	92	93	60	1127	71	16	250	134
Grp Sat Flow(s),veh/h/ln	1721	0	1649	1721	1770	1637	1774	1695	1577	1774	1695	1773
Q Serve(g_s), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.4	1.7	0.5	3.1	3.2
Cycle Q Clear(g_c), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.4	1.7	0.5	3.1	3.2
Prop In Lane	1.00		0.74	1.00		0.77	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	668	0	340	311	181	167	94	1933	599	35	1175	615
V/C Ratio(X)	0.77	0.00	0.37	0.65	0.51	0.55	0.64	0.58	0.12	0.46	0.21	0.22
Avail Cap(c_a), veh/h	959	0	710	523	538	498	210	1933	599	150	1175	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	20.2	26.0	25.2	25.3	27.5	14.6	11.9	28.7	13.6	13.7
Incr Delay (d2), s/veh	2.5	0.0	0.7	2.3	2.2	2.8	7.0	1.3	0.4	9.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.8	1.7	1.5	1.6	1.1	5.0	0.8	0.3	1.5	1.7
LnGrp Delay(d),s/veh	25.1	0.0	20.9	28.3	27.4	28.1	34.5	15.9	12.3	38.0	14.1	14.5
LnGrp LOS	C		C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h	641			386			1258			400		
Approach Delay, s/veh	24.3			28.0			16.6			15.2		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	27.0	9.9	16.7	7.6	25.0	16.0	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	22.5	9.0	25.5	7.0	20.5	16.5	18.0				
Max Q Clear Time (g_c+I), s	2.5	12.4	5.3	5.9	4.0	5.2	10.4	5.2				
Green Ext Time (p_c), s	0.0	5.6	0.2	0.6	0.0	2.1	1.1	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	19.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	45	55	115	794	60	292	95	820	443	148	720	35
Future Volume (veh/h)	45	55	115	794	60	292	95	820	443	148	720	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	60	125	863	65	317	103	891	482	161	783	38
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	326	267	800	102	496	130	1560	481	191	1208	541
Arrive On Green	0.04	0.17	0.17	0.23	0.37	0.37	0.07	0.31	0.31	0.11	0.34	0.34
Sat Flow, veh/h	1774	1863	1525	3442	275	1339	1774	5085	1569	1774	3539	1583
Grp Volume(v), veh/h	49	60	125	863	0	382	103	891	482	161	783	38
Grp Sat Flow(s),veh/h/ln	1774	1863	1525	1721	0	1614	1774	1695	1569	1774	1770	1583
Q Serve(g_s), s	2.8	2.8	7.4	23.5	0.0	19.7	5.8	14.9	31.0	9.0	18.9	1.6
Cycle Q Clear(g_c), s	2.8	2.8	7.4	23.5	0.0	19.7	5.8	14.9	31.0	9.0	18.9	1.6
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	326	267	800	0	598	130	1560	481	191	1208	541
V/C Ratio(X)	0.75	0.18	0.47	1.08	0.00	0.64	0.79	0.57	1.00	0.84	0.65	0.07
Avail Cap(c_a), veh/h	156	663	543	800	0	808	177	1560	481	202	1208	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	35.6	37.5	38.8	0.0	26.2	46.1	29.5	35.0	44.2	28.1	22.5
Incr Delay (d2), s/veh	15.4	0.3	1.3	55.2	0.0	1.1	15.7	0.5	41.4	25.2	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	3.2	17.2	0.0	9.0	3.4	7.0	18.9	5.8	9.4	0.7
LnGrp Delay(d),s/veh	63.6	35.8	38.8	94.0	0.0	27.4	61.8	30.0	76.4	69.4	29.4	22.5
LnGrp LOS	E	D	D	F		C	E	C	F	E	C	C
Approach Vol, veh/h	234			1245			1476			982		
Approach Delay, s/veh	43.2			73.5			47.4			35.7		
Approach LOS	D			E			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	35.5	28.0	22.2	11.9	39.0	8.2	41.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	31.0	23.5	36.0	10.1	32.4	8.9	50.6				
Max Q Clear Time (g_c+I), s	3.0	33.0	25.5	9.4	7.8	20.9	4.8	21.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	4.3	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	52.5											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↰	↱	↱
Traffic Volume (veh/h)	5	623	5	9	1064	10	55	0	12	10	0	25
Future Volume (veh/h)	5	623	5	9	1064	10	55	0	12	10	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	5	677	0	10	1157	11	60	0	13	11	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	1497	670	23	1542	15	148	0	130	20	0	50
Arrive On Green	0.01	0.42	0.00	0.01	0.43	0.43	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3592	34	1774	0	1556	473	0	1161
Grp Volume(v), veh/h	5	677	0	10	570	598	60	0	13	38	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1856	1774	0	1556	1634	0	0
Q Serve(g_s), s	0.1	5.6	0.0	0.2	11.2	11.2	1.3	0.0	0.3	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.6	0.0	0.2	11.2	11.2	1.3	0.0	0.3	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	12	1497	670	23	760	797	148	0	130	70	0	0
V/C Ratio(X)	0.42	0.45	0.00	0.43	0.75	0.75	0.40	0.00	0.10	0.54	0.00	0.00
Avail Cap(c_a), veh/h	216	1807	808	216	903	948	776	0	681	715	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.3	8.5	0.0	20.1	9.9	9.9	17.9	0.0	17.4	19.3	0.0	0.0
Incr Delay (d2), s/veh	21.5	0.2	0.0	12.0	2.9	2.8	1.8	0.0	0.3	6.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	2.8	0.0	0.2	6.0	6.3	0.7	0.0	0.1	0.5	0.0	0.0
LnGrp Delay(d), s/veh	41.9	8.7	0.0	32.2	12.8	12.7	19.7	0.0	17.8	25.7	0.0	0.0
LnGrp LOS	D	A		C	B	B	B		B	C		
Approach Vol, veh/h	682			1178			73			38		
Approach Delay, s/veh	8.9			12.9			19.3			25.7		
Approach LOS	A			B			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.9			6.3	4.8	22.2		7.9				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	7.6			2.9	2.1	13.2		3.3				
Green Ext Time (p_c), s	0.0	3.9		0.1	0.0	4.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				12.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection												
Int Delay, s/veh	26											
Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↰	↱	↰	↱	↰	↱						
Traffic Vol, veh/h	75	455	918	74	112	165						
Future Vol, veh/h	75	455	918	74	112	165						
Conflicting Peds, #/hr	5	0	0	5	0	2						
Sign Control	Free	Free	Free	Free	Stop	Stop						
RT Channelized	-	None	-	None	-	None						
Storage Length	25	-	-	-	0	-						
Veh in Median Storage, #	-	0	0	-	0	-						
Grade, %	-	0	0	-	0	-						
Peak Hour Factor	94	94	94	94	94	94						
Heavy Vehicles, %	2	2	2	2	2	2						
Mvmt Flow	80	484	977	79	119	176						
Major/Minor												
Major1	Major2	Minor2										
Conflicting Flow All	1061	0	-	0	1666	1024						
Stage 1	-	-	-	-	1022	-						
Stage 2	-	-	-	-	644	-						
Critical Hdwy	4.12	-	-	-	6.42	6.22						
Critical Hdwy Stg 1	-	-	-	-	5.42	-						
Critical Hdwy Stg 2	-	-	-	-	5.42	-						
Follow-up Hdwy	2.218	-	-	-	3.518	3.318						
Pot Cap-1 Maneuver	657	-	-	-	~ 106	286						
Stage 1	-	-	-	-	347	-						
Stage 2	-	-	-	-	523	-						
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	654	-	-	-	~ 92	284						
Mov Cap-2 Maneuver	-	-	-	-	204	-						
Stage 1	-	-	-	-	303	-						
Stage 2	-	-	-	-	520	-						
Approach												
EB	WB	SB										
HCM Control Delay, s	1.6	0	165.5									
HCM LOS			F									
Minor Lane/Major Mvmt												
EBL	EBT	WBT	WBR	SBLn1								
Capacity (veh/h)	654	-	-	-	245							
HCM Lane V/C Ratio	0.122	-	-	-	1.203							
HCM Control Delay (s)	11.3	-	-	-	165.5							
HCM Lane LOS	B	-	-	-	F							
HCM 95th %tile Q(veh)	0.4	-	-	-	14.1							
Notes												
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

HCM 2010 TWSC
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	561	982	5	5	10
Future Vol, veh/h	5	561	982	5	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	610	1067	5	5	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1072	0	0 1687 1067
Stage 1	-	-	- 1067 -
Stage 2	-	-	- 620 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	650	-	- 103 270
Stage 1	-	-	- 331 -
Stage 2	-	-	- 536 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	650	-	- 102 270
Mov Cap-2 Maneuver	-	-	- 102 -
Stage 1	-	-	- 328 -
Stage 2	-	-	- 536 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	27.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	650	-	-	-	174
HCM Lane V/C Ratio	0.008	-	-	-	0.094
HCM Control Delay (s)	10.6	-	-	-	27.8
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Year 2035 + Proj AM (w. Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	351	432	20	50	220
Future Vol, veh/h	57	351	432	20	50	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	382	470	22	54	239

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	492	0	0 987 481
Stage 1	-	-	- 481 -
Stage 2	-	-	- 506 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1071	-	- 274 585
Stage 1	-	-	- 622 -
Stage 2	-	-	- 606 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1071	-	- 254 585
Mov Cap-2 Maneuver	-	-	- 254 -
Stage 1	-	-	- 577 -
Stage 2	-	-	- 606 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	24.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1071	-	-	-	471
HCM Lane V/C Ratio	0.058	-	-	-	0.623
HCM Control Delay (s)	8.6	0	-	-	24.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	4.2

Year 2035 + Proj AM (w. Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				 	 			
Traffic Volume (veh/h)	166	100	205	880	1760	237		
Future Volume (veh/h)	166	100	205	880	1760	237		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	180	109	223	957	1913	258		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	217	194	197	2704	2144	959		
Arrive On Green	0.12	0.12	0.11	0.76	0.61	0.61		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	180	109	223	957	1913	258		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	11.9	7.8	13.3	10.5	55.6	9.2		
Cycle Q Clear(g_c), s	11.9	7.8	13.3	10.5	55.6	9.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	217	194	197	2704	2144	959		
V/C Ratio(X)	0.83	0.56	1.13	0.35	0.89	0.27		
Avail Cap(c_a), veh/h	488	435	197	2704	2144	959		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	51.4	49.6	53.3	4.6	20.3	11.1		
Incr Delay (d2), s/veh	7.8	2.5	104.9	0.4	6.2	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.3	6.9	12.2	5.2	28.7	4.2		
LnGrp Delay(d),s/veh	59.2	52.2	158.3	4.9	26.5	11.8		
LnGrp LOS	E	D	F	A	C	B		
Approach Vol, veh/h	289			1180	2171			
Approach Delay, s/veh	56.6			33.9	24.7			
Approach LOS	E			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		99.2		20.8	19.0	80.2		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		73.4		33.0	* 13	54.4		
Max Q Clear Time (g_c+1), s		12.5		13.9	15.3	57.6		
Green Ext Time (p_c), s		8.9		0.8	0.0	0.0		
Intersection Summary	HCM 2010 Ctrl Delay	HCM 2010 LOS		30.2	C			
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Future Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1455	33	38	82	560	679	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	526	230	1347	300	346	81	1061	1874	38	988	10
Arrive On Green	0.15	0.15	0.15	0.38	0.38	0.38	0.05	0.30	0.30	0.02	0.28	0.28
Sat Flow, veh/h	1774	3539	1547	3548	791	911	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1455	0	71	82	560	679	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	0	1702	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.8	1.5	33.0	33.0
Cycle Q Clear(g_c), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.8	1.5	33.0	33.0
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	264	526	230	1347	0	646	81	1061	1874	38	487	511
V/C Ratio(X)	0.16	0.16	0.90	1.08	0.00	0.11	1.01	0.53	0.36	0.57	1.06	1.06
Avail Cap(c_a), veh/h	267	532	232	1347	0	646	81	1061	1874	84	487	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	44.4	50.1	37.2	0.0	24.0	57.2	34.9	8.2	58.1	43.4	43.4
Incr Delay (d2), s/veh	0.3	0.1	33.5	49.1	0.0	0.1	101.6	0.5	0.1	12.7	58.0	57.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.2	8.9	31.3	0.0	1.5	5.0	7.8	10.5	0.9	23.8	24.9
LnGrp Delay(d),s/veh	44.8	44.6	83.6	86.3	0.0	24.1	158.8	35.4	8.3	70.8	101.4	100.5
LnGrp LOS	D	D	F	F		C	F	D	A	E	F	F
Approach Vol, veh/h	332			1526			1321				1082	
Approach Delay, s/veh	69.0			83.4			29.1				100.4	
Approach LOS	E			F			C				F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.4			22.3	10.0	37.5		50.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.8			18.0	5.5	33.0		45.5				
Max Q Clear Time (g_c+1), s	17.8			17.8	7.5	35.0		47.5				
Green Ext Time (p_c), s	0.0	6.1		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				69.7								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	550	5	10	974	60	5	5	20	95	0	110
Future Volume (veh/h)	50	550	5	10	974	60	5	5	20	95	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	54	598	5	11	1059	65	5	5	22	103	0	120
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1496	13	25	1282	79	97	67	506	130	0	517
Arrive On Green	0.05	0.42	0.42	0.01	0.38	0.38	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1774	3596	30	1774	3381	207	0	205	1550	0	0	1583
Grp Volume(v), veh/h	54	294	309	11	554	570	10	0	22	103	0	120
Grp Sat Flow(s), veh/h/ln	1774	1770	1857	1774	1770	1819	205	0	1550	0	0	1583
Q Serve(g_s), s	1.7	6.5	6.5	0.3	15.7	15.7	0.0	0.0	0.5	0.0	0.0	3.1
Cycle Q Clear(g_c), s	1.7	6.5	6.5	0.3	15.7	15.7	18.1	0.0	0.5	18.1	0.0	3.1
Prop In Lane	1.00		0.02	1.00		0.11	0.50		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	736	772	25	671	690	164	0	506	130	0	517
V/C Ratio(X)	0.60	0.40	0.40	0.44	0.83	0.83	0.06	0.00	0.04	0.79	0.00	0.23
Avail Cap(c_a), veh/h	163	744	780	163	744	764	164	0	506	130	0	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	11.3	11.3	27.1	15.6	15.6	15.0	0.0	12.8	27.7	0.0	13.6
Incr Delay (d2), s/veh	6.2	0.4	0.3	11.8	7.0	6.9	0.2	0.0	0.0	27.7	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	3.2	3.3	0.2	8.8	9.1	0.1	0.0	0.2	2.5	0.0	1.3
LnGrp Delay(d), s/veh	31.9	11.7	11.7	38.9	22.6	22.4	15.1	0.0	12.8	55.4	0.0	13.8
LnGrp LOS	C	B	B	D	C	C	B		B	E		B
Approach Vol, veh/h	657			1135			32			223		
Approach Delay, s/veh	13.3			22.7			13.5			33.0		
Approach LOS	B			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.6			22.6	7.3	25.5		22.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.3			18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I), s	8.5			20.1	3.7	17.7		20.1				
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	3.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				20.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	15	30	5	360	20	890	15	255	530	1008	429	25
Future Volume (veh/h)	15	30	5	360	20	890	15	255	530	1008	429	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	33	5	391	22	967	16	277	576	1096	466	27
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	90	14	414	23	1448	30	970	815	957	1893	847
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.27	0.27	0.28	0.53	0.53
Sat Flow, veh/h	1774	1573	238	1684	95	2739	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	16	0	38	413	0	967	16	277	576	1096	466	27
Grp Sat Flow(s), veh/h/ln	1774	0	1812	1779	0	1370	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.1	0.0	2.5	28.3	0.0	30.5	1.1	7.7	34.0	34.5	8.8	1.0
Cycle Q Clear(g_c), s	1.1	0.0	2.5	28.3	0.0	30.5	1.1	7.7	34.0	34.5	8.8	1.0
Prop In Lane	1.00		0.13	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	104	437	0	1448	30	970	815	957	1893	847
V/C Ratio(X)	0.16	0.00	0.37	0.94	0.00	0.67	0.53	0.29	0.71	1.15	0.25	0.03
Avail Cap(c_a), veh/h	472	0	482	437	0	1448	80	970	815	957	1893	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	56.3	46.0	0.0	21.8	60.5	35.5	22.5	44.8	15.5	13.7
Incr Delay (d2), s/veh	0.7	0.0	2.2	29.5	0.0	1.2	13.5	0.2	2.8	77.9	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	1.3	17.5	0.0	12.3	0.7	3.8	20.3	26.7	4.3	0.4
LnGrp Delay(d), s/veh	56.4	0.0	58.5	75.4	0.0	22.9	74.0	35.6	25.3	122.7	15.5	13.7
LnGrp LOS	E		E	E		C	E	D	C	F	B	B
Approach Vol, veh/h	54			1380			869			1589		
Approach Delay, s/veh	57.9			38.7			29.5			89.4		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	38.5		11.6	6.6	70.9		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0			33.0	5.6	62.9		30.5				
Max Q Clear Time (g_c+I), s	36.0			4.5	3.1	10.8		32.5				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				57.6								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	435	20	55	45	45	0	40	730	20	10	1161	1154
Future Volume (veh/h)	435	20	55	45	45	0	40	730	20	10	1161	1154
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	473	22	0	49	49	0	43	793	22	11	1262	1254
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	612	331	282	67	67	116	73	1649	46	24	1563	1726
Arrive On Green	0.18	0.18	0.00	0.07	0.07	0.00	0.04	0.47	0.01	0.44	0.44	0.44
Sat Flow, veh/h	3442	1863	1583	909	909	1583	1774	3518	98	1774	3539	2787
Grp Volume(v), veh/h	473	22	0	98	0	0	43	399	416	11	1262	1254
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1817	0	1583	1774	1770	1846	1774	1770	1393
Q Serve(g_s), s	8.9	0.7	0.0	3.6	0.0	0.0	1.6	10.4	10.5	0.4	20.9	21.0
Cycle Q Clear(g_c), s	8.9	0.7	0.0	3.6	0.0	0.0	1.6	10.4	10.5	0.4	20.9	21.0
Prop In Lane	1.00		1.00	0.50		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	612	331	282	133	0	116	73	830	865	24	1563	1726
V/C Ratio(X)	0.77	0.07	0.00	0.74	0.00	0.00	0.59	0.48	0.48	0.45	0.81	0.73
Avail Cap(c_a), veh/h	922	499	424	484	0	422	131	830	865	131	1618	1770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.1	0.0	30.7	0.0	0.0	31.9	12.3	12.3	33.1	16.4	8.9
Incr Delay (d2), s/veh	2.3	0.1	0.0	7.7	0.0	0.0	7.4	0.4	0.4	12.3	3.1	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	0.3	0.0	2.1	0.0	0.0	0.9	5.2	5.4	0.3	10.8	11.9
LnGrp Delay(d), s/veh	28.8	23.2	0.0	38.3	0.0	0.0	39.3	12.7	12.7	45.4	19.4	10.4
LnGrp LOS	C	C		D			D	B	B	D	B	B
Approach Vol, veh/h	495			98			858			2527		
Approach Delay, s/veh	28.6			38.3			14.1			15.1		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.2			16.5	7.3	34.3		9.4				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.9			18.1	5.0	30.9		18.0				
Max Q Clear Time (g_c+I), s	12.5			10.9	3.6	23.0		5.6				
Green Ext Time (p_c), s	0.0	5.0		1.2	0.0	6.8		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	222	185	150	185	445	65	210	292	130	115	996	514
Future Volume (veh/h)	222	185	150	185	445	65	210	292	130	115	996	514
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	241	201	0	201	484	71	228	317	141	125	1083	559
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	716	320	283	586	86	264	1459	653	158	1248	696
Arrive On Green	0.09	0.20	0.00	0.08	0.19	0.19	0.15	0.41	0.41	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3091	451	1774	3539	1583	1774	3539	1548
Grp Volume(v), veh/h	241	201	0	201	276	279	228	317	141	125	1083	559
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1773	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	5.7	4.0	0.0	4.8	12.6	12.7	10.6	4.9	4.8	5.8	24.0	26.3
Cycle Q Clear(g_c), s	5.7	4.0	0.0	4.8	12.6	12.7	10.6	4.9	4.8	5.8	24.0	26.3
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	716	320	283	336	336	264	1459	653	158	1248	696
V/C Ratio(X)	0.74	0.28	0.00	0.71	0.82	0.83	0.86	0.22	0.22	0.79	0.87	0.80
Avail Cap(c_a), veh/h	471	821	367	409	379	379	264	1459	653	272	1263	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	28.4	0.0	37.6	32.7	32.8	35.0	16.0	15.9	37.5	25.4	20.1
Incr Delay (d2), s/veh	3.5	0.2	0.0	3.3	12.4	13.1	24.5	0.1	0.2	8.5	6.6	6.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	2.0	0.0	2.4	7.3	7.4	7.0	2.4	2.1	3.2	12.9	12.4
LnGrp Delay(d), s/veh	40.6	28.6	0.0	40.9	45.1	45.8	59.5	16.0	16.1	46.0	32.0	26.7
LnGrp LOS	D	C		D	D	D	E	B	B	D	C	C
Approach Vol, veh/h	442			756			686			1767		
Approach Delay, s/veh	35.1			44.2			30.5			31.3		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	39.2	11.4	21.5	17.0	34.2	12.5	20.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.9	29.6	10.0	19.5	12.5	30.0	11.5	18.0				
Max Q Clear Time (g_c+I), s	6.9	6.8	6.0	12.6	28.3	7.7	14.7					
Green Ext Time (p_c), s	0.1	2.5	0.2	0.9	0.0	1.4	0.3	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				34.3								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	53	295	65	50	545	288	130	368	5	448	820	78
Future Volume (veh/h)	53	295	65	50	545	288	130	368	5	448	820	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	321	71	54	592	313	141	400	5	487	891	85
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	1076	481	74	673	356	175	534	7	529	1140	109
Arrive On Green	0.04	0.30	0.30	0.04	0.30	0.30	0.10	0.15	0.15	0.30	0.35	0.35
Sat Flow, veh/h	3442	3539	1582	1774	2226	1176	1774	3578	45	1774	3266	312
Grp Volume(v), veh/h	58	321	71	54	471	434	141	198	207	487	891	493
Grp Sat Flow(s), veh/h/ln	1721	1770	1582	1774	1770	1633	1774	1770	1853	1774	1770	1808
Q Serve(g_s), s	1.4	6.0	2.8	2.6	22.0	22.0	6.8	9.3	9.3	23.1	21.3	21.3
Cycle Q Clear(g_c), s	1.4	6.0	2.8	2.6	22.0	22.0	6.8	9.3	9.3	23.1	21.3	21.3
Prop In Lane	1.00		1.00	1.00		0.72	1.00		0.02	1.00		0.17
Lane Grp Cap(c), veh/h	149	1076	481	74	535	494	175	264	277	529	617	631
V/C Ratio(X)	0.39	0.30	0.15	0.73	0.88	0.88	0.81	0.75	0.75	0.92	0.78	0.78
Avail Cap(c_a), veh/h	198	1076	481	173	579	535	238	366	383	622	748	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	23.2	22.1	41.2	28.8	28.9	38.4	35.5	35.5	29.5	25.4	25.4
Incr Delay (d2), s/veh	1.7	0.2	0.1	12.6	13.8	14.8	13.4	5.4	5.2	17.5	4.4	4.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	3.0	1.3	1.6	12.8	11.9	4.0	5.0	5.2	13.8	11.1	11.3
LnGrp Delay(d), s/veh	42.2	23.3	22.2	53.8	42.6	43.6	51.8	40.9	40.7	47.0	29.8	29.7
LnGrp LOS	D	C	C	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h	450			959			546			1463		
Approach Delay, s/veh	25.6			43.7			43.6			35.5		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	13.1	34.9	8.3	30.8	30.5	17.5					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.0	11.7	36.8	5.0	28.5	30.5	18.0					
Max Q Clear Time (g_c+1/3), s	8.0	8.8	23.3	3.4	24.0	25.1	11.3					
Green Ext Time (p_c), s	0.0	2.1	0.1	5.4	0.0	2.3	0.8	1.3				

Intersection Summary

HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖↗	↖↗			↖↗	↖↗		↖↗		↖↗	↖↗	↖↗
Traffic Volume (veh/h)	298	1087	0	0	1963	215	0	0	0	275	0	595
Future Volume (veh/h)	298	1087	0	0	1963	215	0	0	0	275	0	595
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	324	1182	0	0	2134	234	0	0	0	299	0	647
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0		0	
Grp Volume(v), veh/h	324	1182	0	0	2134	234	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0		0	
Q Serve(g_s), s	13.3	4.0	0.0	0.0	87.4	18.0	0.0	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	13.3	4.0	0.0	0.0	87.4	18.0	0.0	0.0	0.0	0.0		
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00			
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0			
V/C Ratio(X)	1.13	0.35	0.00	0.00	0.73	0.18	0.00	0.00	0.00			
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00			
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	41.5	16.3	0.0	0.0	0.0			
Incr Delay (d2), s/veh	93.8	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%), veh/ln	0.0	1.9	0.0	0.0	43.0	7.9	0.0	0.0	0.0			
LnGrp Delay(d), s/veh	167.2	0.6	0.0	0.0	41.7	16.4	0.0	0.0	0.0			
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1506			2368			0					
Approach Delay, s/veh	36.4			39.2			0.0					
Approach LOS	D			D								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				5.7	8.0		6.1				
Max Green Setting (Gmax), s	74.9				13	55.9		44.0				
Max Q Clear Time (g_c+1/3), s	6.0				15.3	89.4		0.0				
Green Ext Time (p_c), s	10.2				0.0	0.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	962	360	348	1758	140	325	305	353	65	365	95
Future Volume (veh/h)	40	962	360	348	1758	140	325	305	353	65	365	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	1046		391	378	1911	152	353	332	384	71	397
Adj No. of Lanes	1	2		1	1	2	1	2	2	0	2	2
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1325		593	225	1453	650	286	474	424	247	715
Arrive On Green	0.18	0.75		0.75	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.26
Sat Flow, veh/h	1774	3539		1583	1774	3539	1583	3442	1770	1583	3442	2790
Grp Volume(v), veh/h	43	1046		391	378	1911	152	353	332	384	71	250
Grp Sat Flow(s),veh/h/ln	1774	1770		1583	1774	1770	1583	1721	1770	1583	1721	1770
Q Serve(g_s), s	3.3	29.1		19.6	20.3	65.7	10.0	13.3	27.1	37.5	3.1	19.6
Cycle Q Clear(g_c), s	3.3	29.1		19.6	20.3	65.7	10.0	13.3	27.1	37.5	3.1	19.6
Prop In Lane	1.00			1.00	1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	161	1325		593	225	1453	650	286	474	424	247	454
V/C Ratio(X)	0.27	0.79		0.66	1.68	1.31	0.23	1.23	0.70	0.91	0.29	0.55
Avail Cap(c_a), veh/h	188	1325		593	225	1453	650	286	545	488	258	531
HCM Platoon Ratio	2.00	2.00		2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73		0.73	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	16.2		15.0	69.9	47.1	30.7	73.3	52.8	56.6	70.4	51.5
Incr Delay (d2), s/veh	0.6	3.6		4.2	307.5	142.1	0.1	131.8	3.4	18.9	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	14.3		9.0	29.2	60.8	4.4	11.6	13.7	18.7	1.5	9.7
LnGrp Delay(d),s/veh	61.6	19.8		19.3	377.3	189.3	30.8	205.1	56.2	75.5	71.0	52.6
LnGrp LOS	E	B		B	F	F	C	F	E	E	D	D
Approach Vol, veh/h	1480			2441			1069			571		
Approach Delay, s/veh	20.9			208.5			112.3			55.0		
Approach LOS	C			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc),s	26.0	67.9	19.0	47.1	20.2	73.7	17.2	48.9				
Change Period (Y+Rc), s	5.7	8.0		* 5.7	6.1	* 5.7	8.0	* 5.7				
Max Green Setting (Gmax),s	28	52.9		* 13	48.0	* 17	56.2	* 12				
Max Q Clear Time (g_c+Q),s	23	31.1		15.3	22.0	5.3	67.7	5.1				
Green Ext Time (p_c), s	0.0	8.5		0.0	3.2	0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	124.3											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	955	250	204	1701	15	210	190	182	35	320	335
Future Volume (veh/h)	175	955	250	204	1701	15	210	190	182	35	320	335
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	190	1038	272	222	1849	16	228	207	198	38	348	364
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1311	579	243	1480	13	280	473	409	118	446	393
Arrive On Green	0.10	0.37	0.37	0.14	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1562	1774	3596	31	3442	1770	1531	1774	1770	1560
Grp Volume(v), veh/h	190	1038	272	222	909	956	228	207	198	38	348	364
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1531	1774	1770	1560
Q Serve(g_s), s	15.3	41.8	21.2	19.8	65.9	65.9	10.4	15.5	17.4	3.3	29.3	36.4
Cycle Q Clear(g_c), s	15.3	41.8	21.2	19.8	65.9	65.9	10.4	15.5	17.4	3.3	29.3	36.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1311	579	243	728	764	280	473	409	118	446	393
V/C Ratio(X)	1.12	0.79	0.47	0.91	1.25	1.25	0.82	0.44	0.48	0.32	0.78	0.93
Avail Cap(c_a), veh/h	170	1311	579	264	728	764	299	487	421	144	477	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.40	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	44.9	38.4	68.1	47.1	47.1	72.3	48.7	49.3	71.3	55.7	58.4
Incr Delay (d2), s/veh	80.7	2.1	1.1	11.7	114.5	115.8	15.1	0.6	0.9	1.6	7.7	25.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	20.8	9.4	10.5	55.3	58.3	5.6	7.7	7.5	1.7	15.3	18.5
LnGrp Delay(d),s/veh	153.0	46.9	39.5	79.8	161.6	162.8	87.4	49.3	50.2	72.9	63.4	83.8
LnGrp LOS	F	D	D	E	F	F	F	D	D	E	E	F
Approach Vol, veh/h	1500			2087			633			750		
Approach Delay, s/veh	59.0			153.5			63.3			73.8		
Approach LOS	E			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.6	67.3	18.7	46.4	21.0	73.9	16.3	48.8				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (G_max), s	24	53.7	* 14	43.1	* 15	62.2	* 13	44.0				
Max Q Clear Time (g_c+Q), s	24	43.8	12.4	38.4	17.3	67.9	5.3	19.4				
Green Ext Time (p_c), s	0.1	5.1	0.1	1.9	0.0	0.0	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay	101.5											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1042	80	75	1735	68	75	85	130	78	140	70
Future Volume (veh/h)	50	1042	80	75	1735	68	75	85	130	78	140	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1133	87	82	1886	74	82	92	141	85	152	76
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	2028	1031	130	2045	1031	272	216	183	252	205	281
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	54	1133	87	82	1886	74	82	92	141	85	152	76
Grp Sat Flow(s),veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.7	32.2	3.2	7.2	77.1	2.7	3.6	7.4	13.8	3.8	12.7	6.7
Cycle Q Clear(g_c), s	4.7	32.2	3.2	7.2	77.1	2.7	3.6	7.4	13.8	3.8	12.7	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	2028	1031	130	2045	1031	272	216	183	252	205	281
V/C Ratio(X)	0.45	0.56	0.08	0.63	0.92	0.07	0.30	0.43	0.77	0.34	0.74	0.27
Avail Cap(c_a), veh/h	133	2028	1031	165	2045	1031	280	512	435	258	501	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	21.5	10.2	72.1	30.5	10.2	69.5	65.8	68.7	70.4	69.0	56.8
Incr Delay (d2), s/veh	1.5	0.7	0.1	5.0	8.4	0.1	0.6	1.3	6.7	0.8	5.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	15.9	1.4	3.7	39.8	1.2	1.7	3.9	6.4	1.8	6.8	2.9
LnGrp Delay(d),s/veh	73.2	22.1	10.3	77.1	38.9	10.4	70.1	67.1	75.3	71.2	74.3	57.3
LnGrp LOS	E	C	B	E	D	B	E	E	E	E	E	E
Approach Vol, veh/h	1274			2042			315			313		
Approach Delay, s/veh	23.5			39.4			71.6			69.3		
Approach LOS	C			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	99.7	18.4	24.6	16.6	100.4	17.4	25.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	15.5	62.7	* 13	43.0	* 12	65.6	* 12	44.0				
Max Q Clear Time (g_c+Q), s	19.2	34.2	5.6	14.7	6.7	79.1	5.8	15.8				
Green Ext Time (p_c), s	0.1	8.7	0.1	1.1	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	39.2											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	845	45	595	1470	553	60	522	215	618	850	378
Future Volume (veh/h)	475	845	45	595	1470	553	60	522	215	618	850	378
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	516	918	49	647	1598	601	65	567	234	672	924	411
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1157	467	671	1504	728	244	607	250	566	1213	742
Arrive On Green	0.13	0.23	0.23	0.20	0.30	0.30	0.07	0.25	0.25	0.16	0.34	0.34
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2435	1003	3442	3539	1579
Grp Volume(v), veh/h	516	918	49	647	1598	601	65	412	389	672	924	411
Grp Sat Flow(s),veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1668	1721	1770	1579
Q Serve(g_s), s	20.3	27.2	3.6	29.8	47.3	47.3	2.9	36.4	36.6	26.3	37.1	29.9
Cycle Q Clear(g_c), s	20.3	27.2	3.6	29.8	47.3	47.3	2.9	36.4	36.6	26.3	37.1	29.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	437	1157	467	671	1504	728	244	441	416	566	1213	742
V/C Ratio(X)	1.18	0.79	0.10	0.96	1.06	0.83	0.27	0.93	0.94	1.19	0.76	0.55
Avail Cap(c_a), veh/h	437	1157	467	671	1504	728	258	453	427	566	1223	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	58.2	40.7	63.8	56.3	37.6	70.4	58.8	58.8	66.8	46.8	30.4
Incr Delay (d2), s/veh	103.0	5.6	0.5	26.0	41.9	10.3	0.6	26.1	27.8	101.3	2.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	13.4	1.6	16.6	28.0	25.2	1.4	21.0	20.1	20.5	18.7	13.2
LnGrp Delay(d),s/veh	172.9	63.9	41.1	89.9	98.2	47.9	71.0	84.9	86.6	168.2	49.6	31.3
LnGrp LOS	F	E	D	F	F	D	E	F	F	F	D	C
Approach Vol, veh/h	1483			2846			866			2007		
Approach Delay, s/veh	101.1			85.7			84.6			85.6		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.9	44.4	17.0	61.7	26.0	55.3	32.0	46.7				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	35.3	62.7	* 12	55.3	* 20	46.2	* 26	41.0				
Max Q Clear Time (g_c+Q), s	29.2	4.9	39.1	22.3	49.3	28.3	38.6					
Green Ext Time (p_c), s	0.0	2.9	0.1	7.5	0.0	0.0	0.0	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay	88.7											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	10	1015	653	833	1990	25	603	5	708	5	30	25
Future Volume (veh/h)	10	1015	653	833	1990	25	603	5	708	5	30	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1103	710	905	2163	27	659	0	770	5	33	27
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1161	924	630	1734	22	909	0	695	126	67	55
Arrive On Green	0.03	0.33	0.33	0.18	0.48	0.48	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1580	3442	3580	45	3548	0	1580	1774	949	777
Grp Volume(V), veh/h	11	1103	710	905	1067	1123	659	0	770	5	0	60
Grp Sat Flow(s), veh/h/ln	1774	1770	1580	1721	1770	1855	1774	0	1580	1774	0	1726
Q Serve(g_s), s	1.0	48.7	52.5	29.3	77.5	77.5	27.1	0.0	41.0	0.4	0.0	5.4
Cycle Q Clear(g_c), s	1.0	48.7	52.5	29.3	77.5	77.5	27.1	0.0	41.0	0.4	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	47	1161	924	630	857	899	909	0	695	126	0	122
V/C Ratio(X)	0.23	0.95	0.77	1.44	1.24	1.25	0.72	0.00	1.11	0.04	0.00	0.49
Avail Cap(c_a), veh/h	122	1161	924	630	857	899	909	0	695	133	0	129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.3	52.5	24.7	65.3	41.2	41.2	54.3	0.0	44.9	69.3	0.0	71.6
Incr Delay (d2), s/veh	2.5	16.9	6.1	205.2	119.8	121.7	2.9	0.0	67.8	0.1	0.0	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	26.5	32.9	31.9	66.4	70.1	13.6	0.0	43.7	0.2	0.0	2.7
LnGrp Delay(d), s/veh	78.8	69.4	30.8	270.5	161.1	162.9	57.2	0.0	112.7	69.4	0.0	74.6
LnGrp LOS	E	E	C	F	F	F	E		F	E		E
Approach Vol, veh/h	1824				3095			1429			65	
Approach Delay, s/veh	54.5				193.7			87.1			74.2	
Approach LOS	D				F			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.0	60.5		17.4	10.0	85.5		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	12.0	* 11		12.0	* 11	70.1		41.0				
Max Q Clear Time (g_c+Q), s	54.5			7.4	3.0	79.5		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				129.2								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	698	800	280	85	1845	348	310	132	125	205	93	458
Future Volume (veh/h)	698	800	280	85	1845	348	310	132	125	205	93	458
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	759	870	304	92	2005	378	337	143	136	223	101	498
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	1990	751	275	1655	636	286	1025	582	280	1018	682
Arrive On Green	0.15	0.39	0.39	0.08	0.33	0.33	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	3442	5085	1583	3442	5085	1559	3442	3539	1573	3442	3539	1570
Grp Volume(V), veh/h	759	870	304	92	2005	378	337	143	136	223	101	498
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1559	1721	1770	1573	1721	1770	1570
Q Serve(g_s), s	23.3	20.1	20.0	4.0	52.1	30.4	13.3	4.8	9.5	10.2	3.3	42.1
Cycle Q Clear(g_c), s	23.3	20.1	20.0	4.0	52.1	30.4	13.3	4.8	9.5	10.2	3.3	42.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	1990	751	275	1655	636	286	1025	582	280	1018	682
V/C Ratio(X)	1.51	0.44	0.40	0.33	1.21	0.59	1.18	0.14	0.23	0.80	0.10	0.73
Avail Cap(c_a), veh/h	501	1990	751	282	1655	636	286	1084	608	280	1077	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	35.8	27.4	69.6	54.0	37.2	73.3	42.1	34.8	72.2	41.8	37.6
Incr Delay (d2), s/veh	241.6	0.7	1.6	0.7	100.9	4.1	110.3	0.1	0.2	14.9	0.0	3.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	77.9	9.6	9.0	2.0	39.8	13.8	10.7	2.4	4.2	5.4	1.6	18.9
LnGrp Delay(d), s/veh	310.0	36.5	29.0	70.3	154.9	41.2	183.7	42.1	35.0	87.1	41.8	41.3
LnGrp LOS	F	D	C	E	F	D	F	D	D	F	D	D
Approach Vol, veh/h	1933				2475			616			822	
Approach Delay, s/veh	142.7				134.4			118.0			53.8	
Approach LOS	F				F			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.5	70.1	19.0	52.4	29.0	59.6	18.7	52.7				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13	59.6	* 13	48.7	* 23	49.4	* 13	49.0				
Max Q Clear Time (g_c+Q), s	22.1	15.3	44.1	25.3	54.1	12.2	11.5					
Green Ext Time (p_c), s	0.1	8.9	0.0	1.2	0.0	0.0	0.1	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				124.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	53	730	313	630	1460	10	455	15	350	5	80	103
Future Volume (veh/h)	53	730	313	630	1460	10	455	15	350	5	80	103
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	58	793	340	685	1587	11	506	0	380	5	87	112
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	1482	461	688	2143	15	529	0	553	10	175	158
Arrive On Green	0.08	0.29	0.29	0.20	0.41	0.41	0.15	0.00	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5210	36	3548	0	1583	101	1757	1583
Grp Volume(v), veh/h	58	793	340	685	1033	565	506	0	380	92	0	112
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1858	0	1583
Q Serve(g_s), s	3.1	13.1	19.4	19.9	25.8	25.8	14.2	0.0	14.9	4.7	0.0	6.9
Cycle Q Clear(g_c), s	3.1	13.1	19.4	19.9	25.8	25.8	14.2	0.0	14.9	4.7	0.0	6.9
Prop In Lane	1.00	1.00	1.00	1.00	0.02	1.00	1.00	0.05	1.00	0.05	1.00	1.00
Lane Grp Cap(c), veh/h	142	1482	461	688	1394	764	529	0	553	185	0	158
V/C Ratio(X)	0.41	0.54	0.74	1.00	0.74	0.74	0.96	0.00	0.69	0.50	0.00	0.71
Avail Cap(c_a), veh/h	177	1482	461	688	1394	764	529	0	553	186	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	29.7	32.0	40.0	24.9	24.9	42.2	0.0	27.9	42.6	0.0	43.6
Incr Delay (d2), s/veh	1.9	1.4	10.1	33.0	3.6	6.4	28.6	0.0	3.6	2.1	0.0	13.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	6.3	9.8	12.6	12.7	14.5	9.1	0.0	9.5	2.5	0.0	3.6
LnGrp Delay(d), s/veh	45.6	31.1	42.1	73.0	28.5	31.3	70.8	0.0	31.5	44.7	0.0	57.3
LnGrp LOS	D	C	D	E	C	C	E		C	D		E
Approach Vol, veh/h	1191			2283			886			204		
Approach Delay, s/veh	35.0			42.5			53.9			51.6		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.7	36.6		16.4	13.7	48.6		21.3				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.1	10.0		10.0	* 10	39.1		14.9				
Max Q Clear Time (g_c+Q), s	21.4			8.9	5.1	27.8		16.9				
Green Ext Time (p_c), s	0.0	4.0		0.1	0.0	7.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				43.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	80	65	135	60	85	40	70	600	15	35	1151	110
Future Volume (veh/h)	80	65	135	60	85	40	70	600	15	35	1151	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	79	82	147	65	92	43	76	652	16	38	1251	120
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	251	209	158	166	138	103	1607	718	68	1538	678
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.06	0.45	0.45	0.04	0.43	0.43
Sat Flow, veh/h	1774	1863	1548	1774	1863	1550	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	79	82	147	65	92	43	76	652	16	38	1251	120
Grp Sat Flow(s), veh/h/ln	1774	1863	1548	1774	1863	1550	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.6	2.5	5.8	2.2	3.0	1.7	2.7	7.8	0.4	1.3	19.6	3.0
Cycle Q Clear(g_c), s	2.6	2.5	5.8	2.2	3.0	1.7	2.7	7.8	0.4	1.3	19.6	3.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	239	251	209	158	166	138	103	1607	718	68	1538	678
V/C Ratio(X)	0.33	0.33	0.70	0.41	0.55	0.31	0.74	0.41	0.02	0.56	0.81	0.18
Avail Cap(c_a), veh/h	503	528	439	503	528	439	140	1660	742	173	1727	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	24.9	26.3	27.3	27.7	27.1	29.4	11.6	9.6	30.0	15.7	11.0
Incr Delay (d2), s/veh	0.8	0.7	4.3	1.7	2.9	1.3	12.6	0.2	0.0	6.9	2.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	1.4	2.7	1.2	1.7	0.8	1.7	3.8	0.2	0.8	10.2	1.3
LnGrp Delay(d), s/veh	25.7	25.6	30.6	29.0	30.6	28.4	42.1	11.8	9.6	36.9	18.5	11.1
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h	308			200			744			1409		
Approach Delay, s/veh	28.0			29.6			14.8			18.4		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.7	33.4		13.1	8.2	32.1		10.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.8			18.0	5.0	31.0		18.0				
Max Q Clear Time (g_c+Q), s	9.8			7.8	4.7	21.6		5.0				
Green Ext Time (p_c), s	0.0	4.5		0.8	0.0	6.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				19.3								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (w. Melrose)
25: Main Access & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	20	534	30	19	816	13	71	0	48	32	0	48
Future Volume (veh/h)	20	534	30	19	816	13	71	0	48	32	0	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	22	580	33	21	887	14	77	0	52	35	0	52
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	1727	772	46	1723	771	326	0	207	326	0	207
Arrive On Green	0.03	0.49	0.49	0.03	0.49	0.49	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1347	0	1583	1347	0	1583
Grp Volume(v), veh/h	22	580	33	21	887	14	77	0	52	35	0	52
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1347	0	1583	1347	0	1583
Q Serve(g_s), s	0.5	3.8	0.4	0.4	6.5	0.2	2.1	0.0	1.1	0.9	0.0	1.1
Cycle Q Clear(g_c), s	0.5	3.8	0.4	0.4	6.5	0.2	3.2	0.0	1.1	2.0	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	1727	772	46	1723	771	326	0	207	326	0	207
V/C Ratio(X)	0.45	0.34	0.04	0.45	0.51	0.02	0.24	0.00	0.25	0.11	0.00	0.25
Avail Cap(c_a), veh/h	233	1727	772	233	1723	771	788	0	750	788	0	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	6.0	5.1	18.2	6.7	5.1	16.3	0.0	14.8	15.8	0.0	14.8
Incr Delay (d2), s/veh	6.5	0.5	0.1	6.7	1.1	0.0	0.4	0.0	0.6	0.1	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	2.0	0.2	0.3	3.3	0.1	0.8	0.0	0.5	0.4	0.0	0.5
LnGrp Delay(d), s/veh	24.7	6.5	5.2	25.0	7.8	5.1	16.6	0.0	15.5	15.9	0.0	15.5
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h	635			922			129			87		
Approach Delay, s/veh	7.1			8.1			16.2			15.6		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0			9.5	5.5	23.0		9.5				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.5			18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I), s	5.8			4.0	2.5	8.5		5.2				
Green Ext Time (p_c), s	0.0	3.3		0.2	0.0	4.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				8.7								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	140	90	60	100	65	15	105	405	105	60	946	360
Future Volume (veh/h)	140	90	60	100	65	15	105	405	105	60	946	360
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	98	65	109	71	16	114	440	114	65	1028	391
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	139	92	212	363	79	147	2565	799	90	1705	648
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.50	0.50	0.05	0.47	0.47
Sat Flow, veh/h	3442	1043	692	3442	2886	630	1774	5085	1583	1774	3613	1374
Grp Volume(v), veh/h	152	0	163	109	43	44	114	440	114	65	964	455
Grp Sat Flow(s), veh/h/ln	1721	0	1735	1721	1770	1746	1774	1695	1583	1774	1695	1597
Q Serve(g_s), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.4	2.8	2.6	15.1	15.1
Cycle Q Clear(g_c), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.4	2.8	2.6	15.1	15.1
Prop In Lane	1.00		0.40	1.00		0.36	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	238	0	232	212	223	220	147	2565	799	90	1600	754
V/C Ratio(X)	0.64	0.00	0.70	0.51	0.19	0.20	0.77	0.17	0.14	0.73	0.60	0.60
Avail Cap(c_a), veh/h	406	0	475	330	445	439	311	2565	799	224	1600	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	29.8	32.7	28.2	28.2	32.3	9.7	9.5	33.7	14.0	14.0
Incr Delay (d2), s/veh	2.8	0.0	3.9	1.9	0.4	0.4	8.4	0.1	0.4	10.5	1.7	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	3.3	1.1	0.8	0.8	2.6	1.6	1.3	1.5	7.3	7.3
LnGrp Delay(d), s/veh	35.5	0.0	33.7	34.6	28.6	28.7	40.7	9.8	9.9	44.2	15.7	17.6
LnGrp LOS	D		C	C	C	C	D	A	A	D	B	B
Approach Vol, veh/h		315			196			668			1484	
Approach Delay, s/veh		34.6			32.0			15.1			17.5	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	40.8	8.9	14.1	10.5	38.5	9.5	13.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.1	36.3	6.9	19.7	12.6	32.8	8.5	18.1				
Max Q Clear Time (g_c+I), s	4.6	5.4	4.2	8.5	6.5	17.1	5.1	3.6				
Green Ext Time (p_c), s	0.0	3.6	0.1	0.6	0.1	8.9	0.1	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					20.0							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	95	100	115	581	150	110	230	740	949	321	1005	65
Future Volume (veh/h)	95	100	115	581	150	110	230	740	949	321	1005	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	109	125	632	163	120	250	804	1032	349	1092	71
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	346	280	539	267	197	275	1633	500	347	1281	560
Arrive On Green	0.07	0.19	0.19	0.16	0.27	0.27	0.15	0.32	0.32	0.20	0.36	0.36
Sat Flow, veh/h	1774	1863	1507	3442	989	728	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	103	109	125	632	0	283	250	804	1032	349	1092	71
Grp Sat Flow(s), veh/h/ln	1774	1863	1507	1721	0	1717	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	7.3	6.5	9.4	20.0	0	18.4	17.7	16.3	41.0	25.0	36.4	3.9
Cycle Q Clear(g_c), s	7.3	6.5	9.4	20.0	0	18.4	17.7	16.3	41.0	25.0	36.4	3.9
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	346	280	539	0	464	275	1633	500	347	1281	560
V/C Ratio(X)	0.81	0.32	0.45	1.17	0.00	0.61	0.91	0.49	2.07	1.00	0.85	0.13
Avail Cap(c_a), veh/h	217	525	425	539	0	543	289	1633	500	347	1281	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	45.0	46.2	53.9	0.0	40.7	53.1	35.0	43.4	51.4	37.6	27.3
Incr Delay (d2), s/veh	11.4	0.5	1.1	96.0	0.0	1.5	29.9	0.2	486.5	49.5	5.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.0	3.4	4.0	16.6	0.0	8.9	11.0	7.6	85.1	16.9	18.8	1.7
LnGrp Delay(d), s/veh	69.8	45.5	47.3	149.8	0.0	42.2	83.0	35.2	529.9	100.9	43.4	27.4
LnGrp LOS	E	D	D	F		D	F	D	F	F	D	C
Approach Vol, veh/h	337				915			2086			1512	
Approach Delay, s/veh	53.6				116.5			285.6			55.9	
Approach LOS	D				F			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.5	45.5	24.5	28.2	24.3	50.7	13.7	39.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	41.0	20.0	36.0	20.8	45.2	15.6	40.4					
Max Q Clear Time (g_c+Q), s	43.0	22.0	11.4	19.7	38.4	9.3	20.4					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.1	4.1	0.1	1.7				

Intersection Summary

HCM 2010 Ctrl Delay	166.0
HCM 2010 LOS	F

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	15	1174	10	13	751	10	40	0	20	5	0	25
Future Volume (veh/h)	15	1174	10	13	751	10	40	0	20	5	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	1276	0	14	816	11	43	0	22	5	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1578	706	32	1585	21	148	0	127	9	0	50
Arrive On Green	0.02	0.45	0.00	0.02	0.44	0.44	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3574	48	1774	0	1521	252	0	1359
Grp Volume(v), veh/h	16	1276	0	14	404	423	43	0	22	32	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1852	1774	0	1521	1610	0	0
Q Serve(g_s), s	0.4	13.5	0.0	0.3	7.1	7.1	1.0	0.0	0.6	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.4	13.5	0.0	0.3	7.1	7.1	1.0	0.0	0.6	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.16		0.84
Lane Grp Cap(c), veh/h	36	1578	706	32	785	821	148	0	127	59	0	0
V/C Ratio(X)	0.45	0.81	0.00	0.44	0.51	0.51	0.29	0.00	0.17	0.54	0.00	0.00
Avail Cap(c_a), veh/h	205	1717	768	205	858	899	738	0	633	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	21.0	10.4	0.0	21.0	8.7	8.7	18.6	0.0	18.4	20.5	0.0	0.0
Incr Delay (d2), s/veh	8.4	2.8	0.0	9.3	0.5	0.5	1.1	0.0	0.6	7.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	7.0	0.0	0.2	3.5	3.6	0.5	0.0	0.3	0.5	0.0	0.0
LnGrp Delay(d), s/veh	29.4	13.2	0.0	30.4	9.2	9.2	19.7	0.0	19.1	27.9	0.0	0.0
LnGrp LOS	C	B		C	A	A	B		B	C		
Approach Vol, veh/h	1292				841			65			32	
Approach Delay, s/veh	13.4				9.6			19.5			27.9	
Approach LOS	B				A			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.8			6.1	5.4	23.7		8.1				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q), s	15.5			2.8	2.4	9.1		3.0				
Green Ext Time (p_c), s	0.0	3.8		0.1	0.0	4.1		0.2				

Intersection Summary

HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	41.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	155	984	624	83	85	110
Future Vol, veh/h	155	984	624	83	85	110
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	1047	664	88	90	117
Major/Minor						
	Major1	Major2		Minor2		
Conflicting Flow All	753	0	-	0	2086	709
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	1377	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	857	-	-	-	~ 58	434
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	234	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	856	-	-	-	~ 47	434
Mov Cap-2 Maneuver	-	-	-	-	~ 62	-
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	234	-
Approach						
	EB	WB		SB		
HCM Control Delay, s	1.4	0		\$ 423.1		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	856	-	-	-	120	
HCM Lane V/C Ratio	0.193	-	-	-	1.729	
HCM Control Delay (s)	10.2	-	-	-	\$ 423.1	
HCM Lane LOS	B	-	-	-	F	
HCM 95th %tile Q(veh)	0.7	-	-	-	15.8	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Year 2035 + Proj PM (w. Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1059	701	5	0	5
Future Vol, veh/h	10	1059	701	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	1151	762	5	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	767	0	-	0	1935	762
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	1173	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	847	-	-	-	72	405
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	294	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	847	-	-	-	71	405
Mov Cap-2 Maneuver	-	-	-	-	71	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	294	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	847	-	-	-	405	
HCM Lane V/C Ratio	0.013	-	-	-	0.013	
HCM Control Delay (s)	9.3	-	-	-	14	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Year 2035 + Proj PM (w. Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	183	613	356	25	30	130
Future Vol, veh/h	183	613	356	25	30	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	666	387	27	33	141
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	414	0	0	1465	401	
Stage 1	-	-	-	401	-	
Stage 2	-	-	-	1064	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1145	-	-	141	649	
Stage 1	-	-	-	676	-	
Stage 2	-	-	-	332	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1145	-	-	102	649	
Mov Cap-2 Maneuver	-	-	-	102	-	
Stage 1	-	-	-	489	-	
Stage 2	-	-	-	332	-	
Approach	EB	WB	SB			
HCM Control Delay, s	2	0	28.3			
HCM LOS	D					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1145	-	-	-	324	
HCM Lane V/C Ratio	0.174	-	-	-	0.537	
HCM Control Delay (s)	8.8	0	-	-	28.3	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.6	-	-	-	3	

Year 2035 + Proj PM (w. Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				 	 			
Traffic Volume (veh/h)	258	265	95	1935	1215	211		
Future Volume (veh/h)	258	265	95	1935	1215	211		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	280	288	103	2103	1321	229		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	369	330	139	2365	1904	852		
Arrive On Green	0.21	0.21	0.08	0.67	0.54	0.54		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	280	288	103	2103	1321	229		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	16.3	19.4	6.2	53.5	30.3	8.6		
Cycle Q Clear(g_c), s	16.3	19.4	6.2	53.5	30.3	8.6		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	369	330	139	2365	1904	852		
V/C Ratio(X)	0.76	0.87	0.74	0.89	0.69	0.27		
Avail Cap(c_a), veh/h	532	475	153	2365	1904	852		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.9	42.1	49.6	14.9	18.7	13.7		
Incr Delay (d2), s/veh	3.8	11.9	15.9	5.5	2.1	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.4	16.8	3.7	27.5	15.2	3.9		
LnGrp Delay(d),s/veh	44.7	54.1	65.5	20.4	20.8	14.5		
LnGrp LOS	D	D	E	C	C	B		
Approach Vol, veh/h	568		2206		1550			
Approach Delay, s/veh	49.5		22.5		19.9			
Approach LOS	D		C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5		6	
Phs Duration (G+Y+Rc), s	81.0		29.0		14.3		66.7	
Change Period (Y+Rc), s	7.5		6.1		* 5.7		7.5	
Max Green Setting (Gmax), s	63.4		33.0		* 9.5		48.2	
Max Q Clear Time (g_c+I1), s	55.5		21.4		8.2		32.3	
Green Ext Time (p_c), s	7.1		1.5		0.0		9.5	
Intersection Summary								
HCM 2010 Ctrl Delay			25.1					
HCM 2010 LOS			C					
Notes								

Year 2035 + Proj PM (w. Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	110	95	898	65	50	195	985	1511	45	970	40
Future Volume (veh/h)	50	110	95	898	65	50	195	985	1511	45	970	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	54	120	103	976	71	54	212	1071	1642	49	1054	43
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	364	156	1036	285	217	223	1452	1931	63	1107	45
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.13	0.41	0.41	0.04	0.32	0.32
Sat Flow, veh/h	1774	3539	1523	3548	976	742	1774	3539	2723	1774	3463	141
Grp Volume(v), veh/h	54	120	103	976	0	125	212	1071	1642	49	539	558
Grp Sat Flow(s), veh/h/ln	1774	1770	1523	1774	0	1718	1774	1770	1361	1774	1770	1834
Q Serve(g_s), s	3.2	3.6	7.3	30.3	0.0	6.3	13.4	28.9	46.3	3.1	33.6	33.6
Cycle Q Clear(g_c), s	3.2	3.6	7.3	30.3	0.0	6.3	13.4	28.9	46.3	3.1	33.6	33.6
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	182	364	156	1036	0	502	223	1452	1931	63	566	587
V/C Ratio(X)	0.30	0.33	0.66	0.94	0.00	0.25	0.95	0.74	0.85	0.78	0.95	0.95
Avail Cap(c_a), veh/h	283	565	243	1053	0	510	223	1452	1931	93	569	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	47.0	48.7	39.0	0.0	30.5	49.0	28.1	11.9	54.0	37.5	37.5
Incr Delay (d2), s/veh	0.9	0.5	4.6	15.6	0.0	0.3	46.1	2.0	3.8	21.6	26.1	25.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	1.8	3.3	17.0	0.0	3.0	9.4	14.5	26.3	1.9	20.4	21.1
LnGrp Delay(d), s/veh	47.7	47.5	53.4	54.6	0.0	30.7	95.1	30.2	15.7	75.6	63.6	63.1
LnGrp LOS	D	D	D	D		C	F	C	B	E	E	E
Approach Vol, veh/h	277				1101			2925			1146	
Approach Delay, s/veh	49.7				51.9			26.8			63.9	
Approach LOS	D				D			C			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	50.8			16.1	18.7	40.6		37.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	44.6			18.0	14.2	36.3		33.5				
Max Q Clear Time (g_c+I), s	48.3			9.3	15.4	35.6		32.3				
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	0.5		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				40.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	120	1091	10	25	863	95	0	5	30	80	5	105
Future Volume (veh/h)	120	1091	10	25	863	95	0	5	30	80	5	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	1186	11	27	938	103	0	5	33	87	5	114
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	1718	16	58	1328	146	0	273	225	363	16	232
Arrive On Green	0.10	0.48	0.48	0.03	0.41	0.41	0.00	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3592	33	1774	3206	352	0	1863	1537	1266	110	1583
Grp Volume(v), veh/h	130	584	613	27	518	523	0	5	33	92	0	114
Grp Sat Flow(s), veh/h/ln	1774	1770	1856	1774	1770	1788	0	1863	1537	1376	0	1583
Q Serve(g_s), s	2.8	10.1	10.1	0.6	9.5	9.5	0.0	0.1	0.7	2.3	0.0	2.6
Cycle Q Clear(g_c), s	2.8	10.1	10.1	0.6	9.5	9.5	0.0	0.1	0.7	2.4	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.20	0.00		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	171	846	888	58	733	741	0	273	225	379	0	232
V/C Ratio(X)	0.76	0.69	0.69	0.47	0.71	0.71	0.00	0.02	0.15	0.24	0.00	0.49
Avail Cap(c_a), veh/h	329	1056	1108	225	953	963	0	852	703	804	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	8.0	8.0	18.7	9.5	9.5	0.0	14.4	14.7	15.3	0.0	15.5
Incr Delay (d2), s/veh	6.8	1.4	1.3	5.8	1.7	1.6	0.0	0.0	0.3	0.3	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.7	5.2	5.4	0.4	4.9	5.0	0.0	0.0	0.3	1.0	0.0	1.2
LnGrp Delay(d), s/veh	24.1	9.4	9.3	24.5	11.2	11.2	0.0	14.4	15.0	15.7	0.0	17.1
LnGrp LOS	C	A	A	C	B	B		B	B	B		B
Approach Vol, veh/h	1327				1068			38			206	
Approach Delay, s/veh	10.8				11.5			14.9			16.4	
Approach LOS	B				B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.3			10.3	8.3	20.8		10.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	7.3	21.2		18.0				
Max Q Clear Time (g_c+I), s	12.1			4.6	4.8	11.5		2.7				
Green Ext Time (p_c), s	0.0	6.0		0.7	0.1	4.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				11.6								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	25	25	15	445	25	1158	20	566	480	1072	418	35
Future Volume (veh/h)	25	25	15	445	25	1158	20	566	480	1072	418	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	27	16	484	27	1259	22	615	522	1165	454	38
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	57	34	471	26	1539	37	895	836	963	1811	810
Arrive On Green	0.05	0.05	0.05	0.28	0.28	0.28	0.02	0.25	0.25	0.28	0.51	0.51
Sat Flow, veh/h	1774	1074	637	1685	94	2715	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	27	0	43	511	0	1259	22	615	522	1165	454	38
Grp Sat Flow(s), veh/h/ln	1774	0	1711	1779	0	1357	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	21.1	31.6	37.5	9.6	1.6
Cycle Q Clear(g_c), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	21.1	31.6	37.5	9.6	1.6
Prop In Lane	1.00		0.37	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	91	498	0	1539	37	895	836	963	1811	810
V/C Ratio(X)	0.28	0.00	0.47	1.03	0.00	0.82	0.59	0.69	0.62	1.21	0.25	0.05
Avail Cap(c_a), veh/h	437	0	421	498	0	1539	82	898	838	963	1811	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	61.6	48.3	0.0	24.2	65.1	45.3	22.0	48.3	18.3	16.4
Incr Delay (d2), s/veh	1.6	0.0	3.7	47.4	0.0	3.6	14.3	2.2	1.5	104.2	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	1.6	24.9	0.0	19.7	1.0	10.6	19.6	31.7	4.7	0.7
LnGrp Delay(d), s/veh	62.6	0.0	65.3	95.7	0.0	27.8	79.3	47.5	23.5	152.5	18.4	16.4
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	70			1770			1159			1657		
Approach Delay, s/veh	64.3			47.4			37.3			112.6		
Approach LOS	E			D			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.0	38.4		11.7	7.3	73.1		42.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	37.5	34.0		33.0	6.2	65.3		37.5				
Max Q Clear Time (g_c+Q), s	33.6			5.3	3.6	11.6		39.5				
Green Ext Time (p_c), s	0.0	0.2		0.3	0.0	3.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				68.4								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	1205	50	55	45	25	5	90	1351	40	10	928	830
Future Volume (veh/h)	1205	50	55	45	25	5	90	1351	40	10	928	830
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1310	54	0	49	27	5	98	1468	43	11	1009	902
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1243	673	572	65	36	89	122	1451	42	23	1265	2002
Arrive On Green	0.36	0.36	0.00	0.06	0.06	0.06	0.07	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1163	641	1583	1774	3512	103	1774	3539	2787
Grp Volume(v), veh/h	1310	54	0	76	0	5	98	739	772	11	1009	902
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1805	0	1583	1774	1770	1845	1774	1770	1393
Q Serve(g_s), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	47.5	47.5	0.7	29.5	15.5
Cycle Q Clear(g_c), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	47.5	47.5	0.7	29.5	15.5
Prop In Lane	1.00		1.00	0.64		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	1243	673	572	101	0	89	122	731	762	23	1265	2002
V/C Ratio(X)	1.05	0.08	0.00	0.75	0.00	0.06	0.80	1.01	1.01	0.48	0.80	0.45
Avail Cap(c_a), veh/h	1243	673	572	283	0	248	128	731	762	77	1361	2078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	24.2	0.0	53.4	0.0	51.4	52.8	33.7	33.7	56.3	33.2	6.7
Incr Delay (d2), s/veh	41.1	0.1	0.0	10.5	0.0	0.3	28.8	35.8	35.9	14.8	3.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	26.8	1.1	0.0	2.7	0.0	0.2	4.1	30.4	31.7	0.4	14.9	13.6
LnGrp Delay(d), s/veh	77.8	24.2	0.0	63.9	0.0	51.6	81.6	69.5	69.6	71.2	36.4	6.9
LnGrp LOS	F	C		E		D	F	F	F	E	D	A
Approach Vol, veh/h	1364			81			1609			1922		
Approach Delay, s/veh	75.7			63.2			70.3			22.8		
Approach LOS	E			E			E			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.0	52.0		46.0	12.4	45.6		11.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	47.5	47.5		41.5	8.3	44.2		18.0				
Max Q Clear Time (g_c+Q), s	49.5			43.5	8.3	31.5		6.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.6		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				53.3								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	705	765	240	260	640	135	320	845	320	205	660	533
Future Volume (veh/h)	705	765	240	260	640	135	320	845	320	205	660	533
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00	0.97	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	766	832	0	283	696	147	348	918	348	223	717	579
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	1050	470	356	595	126	306	1003	449	207	806	663
Arrive On Green	0.19	0.30	0.00	0.10	0.21	0.21	0.17	0.28	0.28	0.12	0.23	0.23
Sat Flow, veh/h	3442	3539	1583	3442	2895	611	1774	3539	1583	1774	3539	1560
Grp Volume(v), veh/h	766	832	0	283	425	418	348	918	348	223	717	579
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1736	1774	1770	1583	1774	1770	1560
Q Serve(g_s), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	22.6	18.2	10.5	17.7	20.5
Cycle Q Clear(g_c), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	22.6	18.2	10.5	17.7	20.5
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1050	470	356	364	357	306	1003	449	207	806	663
V/C Ratio(X)	1.14	0.79	0.00	0.80	1.17	1.17	1.14	0.92	0.78	1.08	0.89	0.87
Avail Cap(c_a), veh/h	669	1050	470	382	364	357	306	1003	449	207	806	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.1	0.0	39.4	35.8	35.8	37.3	31.2	29.6	39.8	33.7	23.9
Incr Delay (d2), s/veh	82.0	4.2	0.0	10.5	101.7	102.7	94.5	12.7	8.3	84.7	12.0	12.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	15.9	10.1	0.0	3.9	19.3	19.0	15.6	12.7	8.9	10.0	9.9	15.3
LnGrp Delay(d), s/veh	118.2	33.3	0.0	49.9	137.5	138.4	131.8	43.9	37.9	124.4	45.6	36.1
LnGrp LOS	F	C		D	F	F	F	D	D	F	D	D
Approach Vol, veh/h	1598			1126			1614			1519		
Approach Delay, s/veh	74.0			115.8			61.5			53.6		
Approach LOS	E			F			E			D		

Intersection Summary												
HCM 2010 Ctrl Delay				73.3								
HCM 2010 LOS				E								

Year 2035 + Proj PM (w. Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	270	895	165	40	490	370	205	695	5	260	623	95
Future Volume (veh/h)	270	895	165	40	490	370	205	695	5	260	623	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	293	973	179	43	533	402	223	755	5	283	677	103
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1321	578	63	580	438	256	823	5	316	805	122
Arrive On Green	0.10	0.37	0.37	0.04	0.30	0.30	0.14	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	3442	3539	1548	1774	1909	1439	1774	3603	24	1774	3072	467
Grp Volume(v), veh/h	293	973	179	43	494	441	223	371	389	283	390	390
Grp Sat Flow(s), veh/h/ln	1721	1770	1548	1774	1770	1578	1774	1770	1858	1774	1770	1769
Q Serve(g_s), s	8.1	23.1	8.0	2.3	26.2	26.2	12.0	19.9	19.9	15.2	20.2	20.3
Cycle Q Clear(g_c), s	8.1	23.1	8.0	2.3	26.2	26.2	12.0	19.9	19.9	15.2	20.2	20.3
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.01	1.00		0.26
Lane Grp Cap(c), veh/h	359	1321	578	63	538	480	256	404	424	316	464	463
V/C Ratio(X)	0.82	0.74	0.31	0.69	0.92	0.92	0.87	0.92	0.92	0.90	0.84	0.84
Avail Cap(c_a), veh/h	372	1321	578	93	556	496	283	410	430	338	465	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	26.3	21.6	46.3	32.6	32.6	40.7	36.6	36.6	39.1	33.9	34.0
Incr Delay (d2), s/veh	12.8	2.2	0.3	12.4	20.1	21.9	22.8	25.1	24.3	24.3	13.0	13.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	14.5	11.6	3.4	1.4	15.8	14.3	7.5	12.5	13.0	9.5	11.5	11.6
LnGrp Delay(d), s/veh	55.4	28.5	21.9	58.8	52.7	54.5	63.4	61.7	60.8	63.4	46.9	47.1
LnGrp LOS	E	C	C	E	D	D	E	E	E	E	D	D
Approach Vol, veh/h	1445			978			983			1063		
Approach Delay, s/veh	33.1			53.8			61.7			51.4		
Approach LOS	C			D			E			D		

Intersection Summary												
HCM 2010 Ctrl Delay				48.3								
HCM 2010 LOS				D								

Year 2035 + Proj PM (w. Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔			↔	↔		↔		↔	↔	↔
Traffic Volume (veh/h)	650	2275	0	0	1568	265	0	0	0	265	0	443
Future Volume (veh/h)	650	2275	0	0	1568	265	0	0	0	265	0	443
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	707	2473	0	0	1704	288	0	0	0	288	0	482
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
Arrive On Green	0.14	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	707	2473	0	0	1704	288	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	25.3	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.3	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
V/C Ratio(X)	1.46	0.73	0.00	0.00	0.61	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	484	3382	0	0	2772	1240	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	77.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	218.9	1.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	16.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	296.2	2.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	3180				1992			0				
Approach Delay, s/veh	67.4				0.1			0.0				
Approach LOS	E				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	180.0				31.0	149.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	91.9				* 25	60.9		44.0				
Max Q Clear Time (g_c+1), s	20.6				27.3	2.0		0.0				
Green Ext Time (p_c), s	45.1				0.0	26.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				41.5								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	75	2105	360	310	1413	120	330	370	315	100	280	55
Future Volume (veh/h)	75	2105	360	310	1413	120	330	370	315	100	280	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	82	2288	391	337	1536	130	359	402	342	109	304	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	1502	672	210	1592	712	273	450	380	228	696	135
Arrive On Green	0.06	0.28	0.28	0.12	0.45	0.45	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1807	1524	3442	2948	574
Grp Volume(v), veh/h	82	2288	391	337	1536	130	359	394	350	109	181	183
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1562	1721	1770	1753
Q Serve(g_s), s	8.1	76.4	38.1	21.3	75.9	8.9	14.3	38.7	39.1	5.5	15.6	16.1
Cycle Q Clear(g_c), s	8.1	76.4	38.1	21.3	75.9	8.9	14.3	38.7	39.1	5.5	15.6	16.1
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.98	1.00	0.33
Lane Grp Cap(c), veh/h	165	1502	672	210	1592	712	273	441	389	228	418	414
V/C Ratio(X)	0.50	1.52	0.58	1.61	0.96	0.18	1.31	0.89	0.90	0.48	0.43	0.44
Avail Cap(c_a), veh/h	168	1502	672	210	1592	712	273	495	436	229	472	467
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.13	0.13	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	64.4	50.7	79.3	48.1	29.7	82.8	65.3	65.4	81.0	58.5	58.7
Incr Delay (d2), s/veh	0.3	235.8	0.5	278.7	6.3	0.2	164.5	17.1	20.0	1.5	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	14.0	86.6	16.8	26.7	38.5	3.9	13.0	21.0	19.1	2.7	7.8	7.9
LnGrp Delay(d), s/veh	80.6	300.2	51.2	358.1	54.4	29.8	247.3	82.3	85.4	82.6	59.2	59.4
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2761			2003			1103				473	
Approach Delay, s/veh	258.4			103.9			137.0				64.7	
Approach LOS	F			F			F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	87.0	84.4	20.0	48.6	22.4	89.0	17.6	50.9				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	70.9	* 14	48.0	* 17	75.2	* 12	50.3					
Max Q Clear Time (g_c+1), s	23.3	78.4	16.3	18.1	10.1	77.9	7.5	41.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.1	0.0	0.1	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay				174.0								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	240	1981	300	188	1388	15	245	280	220	10	115	160
Future Volume (veh/h)	240	1981	300	188	1388	15	245	280	220	10	115	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	261	2153	326	204	1509	16	266	304	239	11	125	174
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	2	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1914	845	171	1771	19	309	362	277	54	233	208
Arrive On Green	0.14	0.54	0.54	0.10	0.49	0.49	0.09	0.19	0.19	0.03	0.13	0.13
Sat Flow, veh/h	1774	3539	1563	1774	3588	38	3442	1898	1451	1774	1770	1580
Grp Volume(v), veh/h	261	2153	326	204	1509	16	266	283	260	11	125	174
Grp Sat Flow(s), veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1579	1774	1770	1580
Q Serve(g_s), s	25.8	97.3	21.8	17.3	66.1	66.2	13.7	27.7	28.7	1.1	11.9	19.3
Cycle Q Clear(g_c), s	25.8	97.3	21.8	17.3	66.1	66.2	13.7	27.7	28.7	1.1	11.9	19.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.92	1.00		1.00
Lane Grp Cap(c), veh/h	254	1914	845	171	1771	19	309	338	301	54	233	208
V/C Ratio(X)	1.03	1.12	0.39	1.20	0.85	0.85	0.86	0.84	0.86	0.20	0.54	0.84
Avail Cap(c_a), veh/h	254	1914	845	171	1771	19	309	338	301	54	233	208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.62	0.62	0.62	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.1	41.3	24.0	81.3	39.8	39.9	80.8	70.1	70.5	85.1	73.0	76.3
Incr Delay (d2), s/veh	24.1	56.9	0.1	118.2	6.7	6.4	14.0	10.9	14.9	1.8	1.9	11.3
Initial Q Delay(d3), s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	14.3	62.5	9.4	14.1	33.9	35.5	7.1	14.6	13.8	0.6	6.0	9.1
LnGrp Delay(d), s/veh	101.3	98.3	24.1	199.6	46.5	46.3	94.8	81.1	85.4	86.9	74.9	87.6
LnGrp LOS	F	F	C	F	D	D	F	F	F	F	E	F
Approach Vol, veh/h	2740			1729			809			310		
Approach Delay, s/veh	89.7			64.5			87.0			82.4		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	105.3	21.8	29.8	31.5	96.8	11.2	40.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	11.8	80.2	* 21	36.0	* 26	71.7	* 13	44.0				
Max Q Clear Time (g_c+max), s	99.3	99.3	15.7	21.3	27.8	68.2	3.1	30.7				
Green Ext Time (p_c), s	0.0	0.0	0.4	1.5	0.0	2.7	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay				81.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	2006	155	150	1436	75	85	155	185	45	75	35
Future Volume (veh/h)	50	2006	155	150	1436	75	85	155	185	45	75	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	2180	168	163	1561	82	92	168	201	49	82	38
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1947	983	141	2008	983	246	304	255	210	284	332
Arrive On Green	0.06	0.55	0.55	0.08	0.57	0.57	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1535
Grp Volume(v), veh/h	54	2180	168	163	1561	82	92	168	201	49	82	38
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1535
Q Serve(g_s), s	5.3	99.0	8.1	14.3	61.5	3.7	4.6	14.9	22.2	2.4	7.0	3.6
Cycle Q Clear(g_c), s	5.3	99.0	8.1	14.3	61.5	3.7	4.6	14.9	22.2	2.4	7.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1947	983	141	2008	983	246	304	255	210	284	332
V/C Ratio(X)	0.49	1.12	0.17	1.16	0.78	0.08	0.37	0.55	0.79	0.23	0.29	0.11
Avail Cap(c_a), veh/h	118	1947	983	141	2008	983	249	455	382	229	445	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.6	40.5	14.4	82.8	30.2	13.1	79.7	69.3	72.4	80.5	67.6	56.9
Incr Delay (d2), s/veh	0.3	54.7	0.0	124.0	3.0	0.2	0.9	1.6	6.4	0.6	0.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.6	62.9	3.5	11.9	30.8	1.6	2.2	7.8	10.1	1.2	3.7	1.5
LnGrp Delay(d), s/veh	81.9	95.2	14.5	206.9	33.2	13.3	80.7	70.9	78.8	81.1	68.2	57.1
LnGrp LOS	F	F	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2402			1806			461			169		
Approach Delay, s/veh	89.3			48.0			76.3			69.4		
Approach LOS	F			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	107.0	18.6	34.4	16.9	110.1	16.7	36.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	11.4	83.3	* 13	43.0	* 12	85.6	* 12	44.0				
Max Q Clear Time (g_c+max), s	101.0	6.6	9.0	7.3	63.5	4.4	24.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	13.3	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				71.9								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	776	1565	80	330	1125	685	70	1126	400	555	1009	466
Future Volume (veh/h)	776	1565	80	330	1125	685	70	1126	400	555	1009	466
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	843	1701	87	359	1223	745	76	1224	435	603	1097	507
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	541	1497	569	293	1130	557	224	890	306	446	1450	884
Arrive On Green	0.16	0.29	0.29	0.09	0.22	0.22	0.07	0.35	0.35	0.13	0.41	0.41
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2574	886	3442	3539	1550
Grp Volume(V), veh/h	843	1701	87	359	1223	745	76	829	830	603	1097	507
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1691	1721	1770	1550
Q Serve(g_s), s	28.3	53.0	6.7	15.3	40.0	40.0	3.8	62.2	62.2	23.3	47.7	37.9
Cycle Q Clear(g_c), s	28.3	53.0	6.7	15.3	40.0	40.0	3.8	62.2	62.2	23.3	47.7	37.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	541	1497	569	293	1130	557	224	611	584	446	1450	884
V/C Ratio(X)	1.56	1.14	0.15	1.23	1.08	1.34	0.34	1.36	1.42	1.35	0.76	0.57
Avail Cap(c_a), veh/h	541	1497	569	293	1130	557	239	611	584	446	1450	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.8	63.5	39.1	82.3	70.0	58.3	80.4	58.9	58.9	78.4	45.4	25.1
Incr Delay (d2), s/veh	260.0	70.0	0.6	128.6	51.9	164.0	0.9	170.5	199.2	173.3	2.3	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	88.0	34.5	3.0	12.5	24.2	53.0	1.8	59.4	61.4	21.8	23.8	16.4
LnGrp Delay(d), s/veh	335.9	133.5	39.6	211.0	121.9	222.3	81.3	229.4	258.1	251.6	47.8	26.0
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2631			2327			1735			2207		
Approach Delay, s/veh	195.2			167.8			236.7			98.5		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	61.0	17.4	80.6	34.0	48.0	29.0	69.0					
Change Period (Y+Rc), s	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8					
Max Green Setting (Gmax), s	53.0	* 13	73.0	* 28	40.0	* 23	62.2					
Max Q Clear Time (g_c+M), s	55.0	5.8	49.7	30.3	42.0	25.3	64.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	11.2	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay				172.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	20	1965	535	475	1525	20	610	20	850	5	5	5
Future Volume (veh/h)	20	1965	535	475	1525	20	610	20	850	5	5	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	2136	582	516	1658	22	679	0	924	5	5	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1582	1059	503	1975	26	808	0	587	62	30	30
Arrive On Green	0.04	0.45	0.45	0.15	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3575	47	3548	0	1563	1774	846	846
Grp Volume(V), veh/h	22	2136	582	516	1658	22	679	0	924	5	0	10
Grp Sat Flow(s), veh/h/ln	1770	1562	1721	1770	1853	1774	0	1563	1774	0	0	1691
Q Serve(g_s), s	2.2	80.5	34.8	26.3	69.5	69.9	32.9	0.0	41.0	0.5	0.0	1.0
Cycle Q Clear(g_c), s	2.2	80.5	34.8	26.3	69.5	69.9	32.9	0.0	41.0	0.5	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	72	1582	1059	503	1975	1024	808	0	587	62	0	59
V/C Ratio(X)	0.30	1.35	0.55	1.03	0.84	0.84	0.84	0.00	1.57	0.08	0.00	0.17
Avail Cap(c_a), veh/h	108	1582	1059	503	1975	1024	808	0	587	118	0	113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.9	49.8	15.2	76.8	33.6	33.7	66.4	0.0	56.5	84.0	0.0	84.3
Incr Delay (d2), s/veh	2.3	161.8	2.1	47.0	8.5	8.3	7.9	0.0	266.1	0.5	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	1.1	74.9	26.1	15.8	36.2	38.0	17.0	0.0	72.6	0.3	0.0	0.5
LnGrp Delay(d), s/veh	86.2	211.5	17.2	123.8	42.1	42.0	74.3	0.0	322.6	84.6	0.0	85.6
LnGrp LOS	F	F	B	F	D	D	E		F	F		F
Approach Vol, veh/h	2740			2196			1603			15		
Approach Delay, s/veh	169.3			61.3			217.4			85.2		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	88.5		12.4	13.0	107.4		47.1				
Change Period (Y+Rc), s	8.0			6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	28	74.8		12.0	* 11	90.1		41.0				
Max Q Clear Time (g_c+M), s	28.3	82.5		3.0	4.2	71.9		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	10.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				144.7								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	1965	470	50	1340	121	285	50	105	111	33	155
Future Volume (veh/h)	165	1965	470	50	1340	121	285	50	105	111	33	155
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	179	2136	511	54	1457	132	310	54	114	121	36	168
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	2969	1077	232	2944	1019	331	482	322	248	397	292
Arrive On Green	0.07	0.58	0.58	0.07	0.58	0.58	0.10	0.14	0.14	0.07	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	179	2136	511	54	1457	132	310	54	114	121	36	168
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	9.2	54.3	27.5	2.7	30.4	5.8	16.1	2.4	11.1	6.1	1.6	17.4
Cycle Q Clear(g_c), s	9.2	54.3	27.5	2.7	30.4	5.8	16.1	2.4	11.1	6.1	1.6	17.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	2969	1077	232	2944	1019	331	482	322	248	397	292
V/C Ratio(X)	0.72	0.72	0.47	0.23	0.49	0.13	0.94	0.11	0.35	0.49	0.09	0.58
Avail Cap(c_a), veh/h	275	2969	1077	249	2944	1019	331	1028	567	249	944	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.7	26.9	13.6	79.5	22.4	12.0	80.8	68.2	61.5	80.3	71.7	67.0
Incr Delay (d2), s/veh	7.9	1.5	1.5	0.5	0.6	0.3	33.5	0.1	0.7	1.5	0.1	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6	25.7	12.3	1.3	14.3	2.6	9.2	1.2	4.9	3.0	0.8	7.8
LnGrp Delay(d),s/veh	89.6	28.4	15.1	80.0	23.0	12.2	114.3	68.3	62.2	81.8	71.8	68.8
LnGrp LOS	F	C	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2826			1643			478			325		
Approach Delay, s/veh	29.9			24.0			96.7			74.0		
Approach LOS	C			C			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	112.6	23.0	26.6	18.7	111.7	18.7	30.9				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13	76.4	* 17	48.0	* 14	75.0	* 13	52.3				
Max Q Clear Time (g_c+1/4), s	14.7	56.3	18.1	19.4	11.2	32.4	8.1	13.1				
Green Ext Time (p_c), s	0.1	16.9	0.0	0.8	0.2	13.7	0.1	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				36.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\12. Year 2035A + Proj PM.syn

Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1755	361	610	970	5	301	30	370	20	35	85
Future Volume (veh/h)	50	1755	361	610	970	5	301	30	370	20	35	85
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	54	1908	392	663	1054	5	351	0	402	22	38	92
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	1982	617	697	2730	13	384	0	492	56	96	131
Arrive On Green	0.07	0.39	0.39	0.20	0.52	0.52	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5224	25	3548	0	1583	671	1158	1583
Grp Volume(v), veh/h	54	1908	392	663	684	375	351	0	402	60	0	92
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1858	1774	0	1583	1829	0	1583
Q Serve(g_s), s	3.5	44.0	24.1	22.8	14.5	14.5	11.7	0.0	13.0	3.7	0.0	6.8
Cycle Q Clear(g_c), s	3.5	44.0	24.1	22.8	14.5	14.5	11.7	0.0	13.0	3.7	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.37		1.00
Lane Grp Cap(c), veh/h	123	1982	617	697	1772	971	384	0	492	151	0	131
V/C Ratio(X)	0.44	0.96	0.64	0.95	0.39	0.39	0.91	0.00	0.82	0.40	0.00	0.70
Avail Cap(c_a), veh/h	148	1982	617	697	1772	971	384	0	492	152	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	35.8	29.7	47.3	17.1	17.1	52.9	0.0	38.2	52.2	0.0	53.6
Incr Delay (d2), s/veh	2.4	13.2	4.9	22.8	0.6	1.2	25.7	0.0	10.3	1.7	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	22.9	11.4	13.1	6.9	7.7	7.1	0.0	13.7	2.0	0.0	3.5
LnGrp Delay(d),s/veh	56.0	48.9	34.6	70.1	17.8	18.3	78.6	0.0	48.5	53.9	0.0	68.8
LnGrp LOS	E	D	C	E	B	B	E		D	D		E
Approach Vol, veh/h	2354			1722			753			152		
Approach Delay, s/veh	46.7			38.0			62.6			62.9		
Approach LOS	D			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	54.3		16.3	14.0	70.2		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	24	76.4		10.0	* 10	61.0		13.0				
Max Q Clear Time (g_c+1/4), s	24.8	46.0		8.8	5.5	16.5		15.0				
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	9.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				46.6								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\12. Year 2035A + Proj PM.syn

Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	175	105	140	25	90	45	220	1076	55	55	1006	225
Future Volume (veh/h)	175	105	140	25	90	45	220	1076	55	55	1006	225
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	167	152	27	98	49	239	1170	60	60	1093	245
Adj No. of Lanes	1	1	1	1	1	1	2	1	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	258	215	147	154	129	282	1729	748	85	1335	597
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.16	0.49	0.49	0.05	0.38	0.38
Sat Flow, veh/h	1774	1863	1553	1774	1863	1560	1774	3539	1532	1774	3539	1582
Grp Volume(v), veh/h	152	167	152	27	98	49	239	1170	60	60	1093	245
Grp Sat Flow(s), veh/h/ln	1774	1863	1553	1774	1863	1560	1774	1770	1532	1774	1770	1582
Q Serve(g_s), s	6.0	6.3	6.9	1.1	3.8	2.2	9.7	18.8	1.5	2.5	20.7	8.5
Cycle Q Clear(g_c), s	6.0	6.3	6.9	1.1	3.8	2.2	9.7	18.8	1.5	2.5	20.7	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	258	215	147	154	129	282	1729	748	85	1335	597
V/C Ratio(X)	0.62	0.65	0.71	0.18	0.64	0.38	0.85	0.68	0.08	0.71	0.82	0.41
Avail Cap(c_a), veh/h	430	452	376	430	452	378	346	1902	823	146	1501	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	30.3	30.5	31.7	33.0	32.3	30.3	14.5	10.1	34.8	20.8	17.0
Incr Delay (d2), s/veh	2.5	2.7	4.2	0.6	4.3	1.8	14.8	0.9	0.0	10.3	3.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	18.1	3.4	3.2	0.5	2.1	1.0	5.9	9.3	0.7	1.5	10.6	3.8
LnGrp Delay(d), s/veh	32.7	33.0	34.8	32.3	37.3	34.1	45.2	15.4	10.1	45.1	24.2	17.5
LnGrp LOS	C	C	C	C	D	C	D	B	B	D	C	B
Approach Vol, veh/h	471			174			1469			1398		
Approach Delay, s/veh	33.5			35.6			20.0			23.9		
Approach LOS	C			D			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.8			14.8	16.3	32.5		10.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	39.9			18.0	14.5	31.5		18.0				
Max Q Clear Time (g_c+I), s	20.8			8.9	11.7	22.7		5.8				
Green Ext Time (p_c), s	0.0	8.8		1.3	0.2	5.3		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				24.1								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\12. Year 2035A + Proj PM.syn

Synchro 10 Report

Year 2035 + Proj PM (w. Melrose)
25: Main Access & N. River Rd

North River Farms
06/27/2018

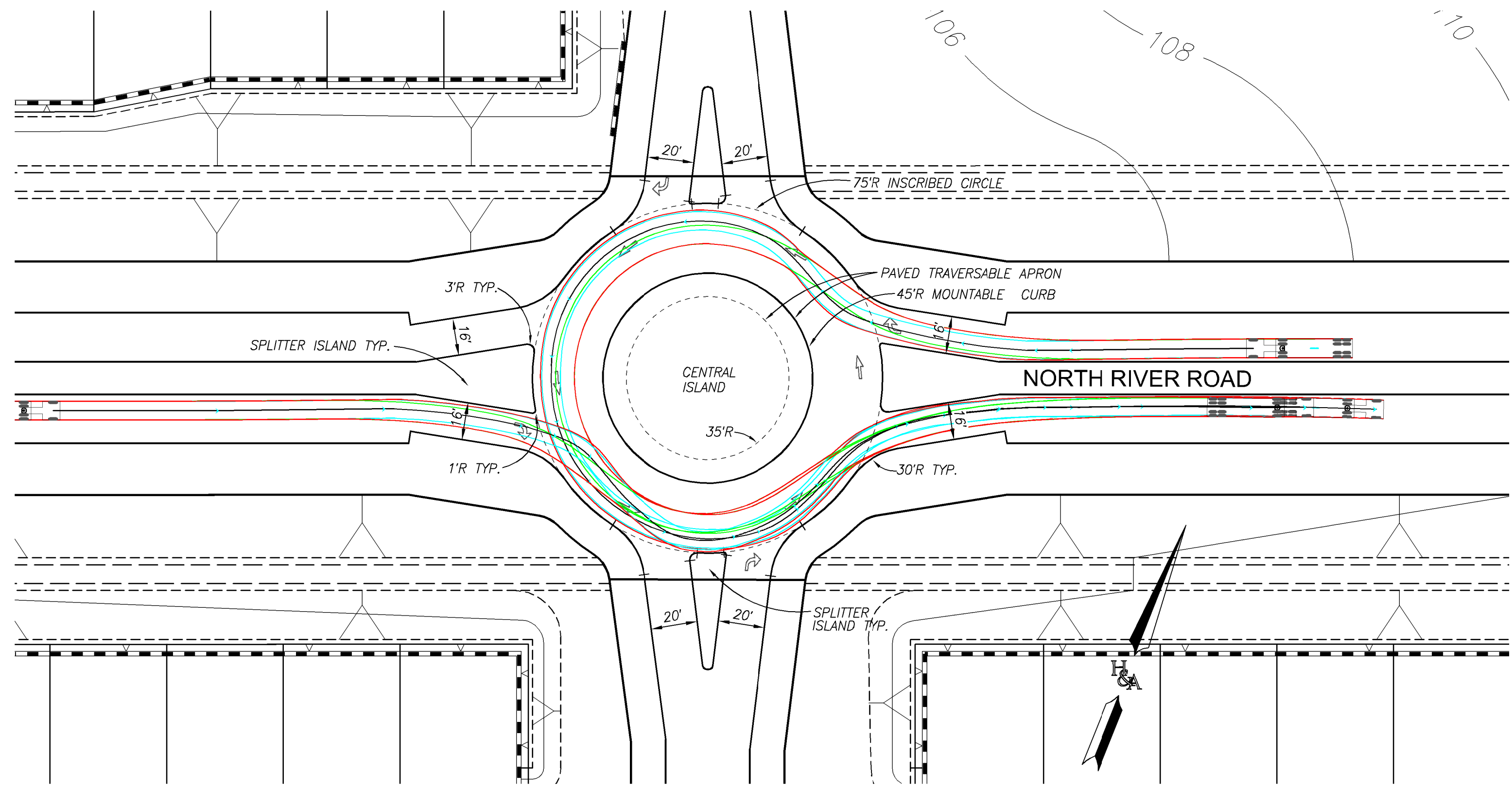
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	61	841	96	64	641	41	50	0	33	20	0	31
Future Volume (veh/h)	61	841	96	64	641	41	50	0	33	20	0	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	66	914	104	70	697	45	54	0	36	22	0	34
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	1513	677	126	1523	681	332	0	173	330	0	173
Arrive On Green	0.07	0.43	0.43	0.07	0.43	0.43	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1369	0	1583	1367	0	1583
Grp Volume(v), veh/h	66	914	104	70	697	45	54	0	36	22	0	34
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1369	0	1583	1367	0	1583
Q Serve(g_s), s	1.2	6.9	1.4	1.3	4.8	0.6	1.3	0.0	0.7	0.5	0.0	0.7
Cycle Q Clear(g_c), s	1.2	6.9	1.4	1.3	4.8	0.6	2.0	0.0	0.7	1.2	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	1513	677	126	1523	681	332	0	173	330	0	173
V/C Ratio(X)	0.55	0.60	0.15	0.56	0.46	0.07	0.16	0.00	0.21	0.07	0.00	0.20
Avail Cap(c_a), veh/h	351	2366	1058	284	2232	999	899	0	828	896	0	828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	15.5	7.6	6.0	15.5	7.0	5.7	14.8	0.0	14.0	14.5	0.0	13.9
Incr Delay (d2), s/veh	3.8	0.4	0.1	3.8	0.2	0.0	0.2	0.0	0.6	0.1	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	3.4	0.6	0.8	2.4	0.3	0.5	0.0	0.3	0.2	0.0	0.3
LnGrp Delay(d), s/veh	19.3	8.0	6.1	19.3	7.2	5.8	15.1	0.0	14.6	14.6	0.0	14.5
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h	1084			812			90			56		
Approach Delay, s/veh	8.5			8.1			14.9			14.5		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.2			8.3	6.8	19.3		8.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.0			18.0	6.8	21.7		18.0				
Max Q Clear Time (g_c+I), s	8.9			3.2	3.2	6.8		4.0				
Green Ext Time (p_c), s	0.0	5.8		0.1	0.0	4.4		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				8.8								
HCM 2010 LOS				A								
Notes												

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\12. Year 2035A + Proj PM.syn

Synchro 10 Report

APPENDIX L

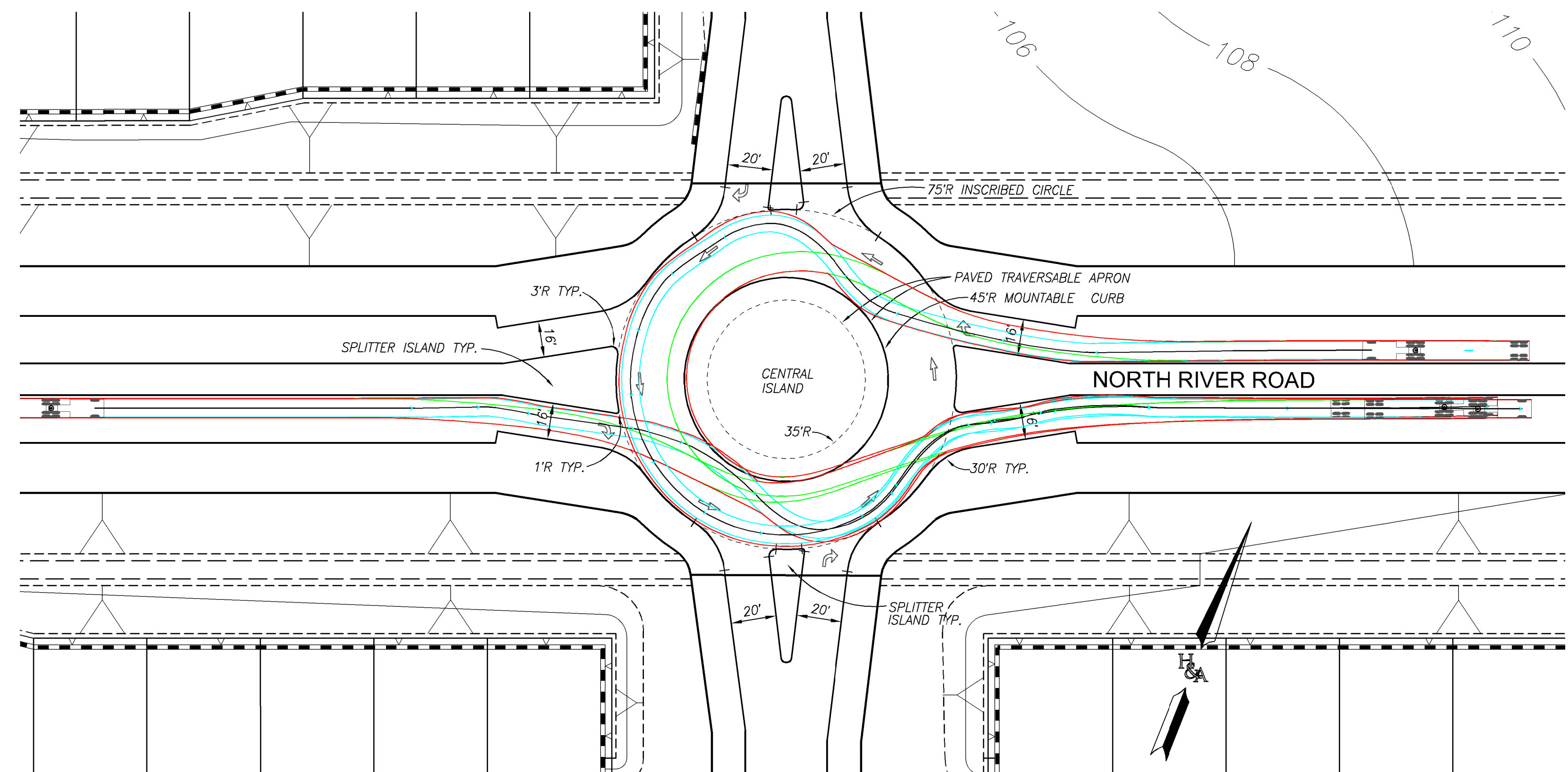
ROUNDAABOUT TRUCK TURNING ANALYSIS



WEST ROUNDABOUT DETAIL

WB-40 SEMI-TRAILER
SCALE: 1" = 40'

ROUNDABOUT DESIGN BASED ON U.S.
DEPARTMENT OF TRANSPORTATION FEDERAL
HIGHWAY ADMINISTRATION PUBLICATION NO.
FHWA-RD-00-067 "ROUNDABOUTS: AN
INFORMATIONAL GUIDE"



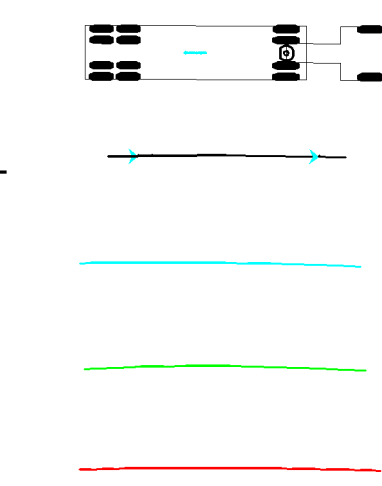
WEST ROUNDABOUT DETAIL

WB-67 SEMI-TRAILER
SCALE: 1" = 40'

ROUNDABOUT DESIGN BASED ON U.S.
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
PUBLICATION NO. FHWA-RD-00-067
"ROUNDABOUTS: AN INFORMATIONAL
GUIDE"

LEGEND

- VEHICLE
- DIRECTION OF TRAVEL
- FRONT TIRES
- REAR TIRES
- VEHICLE OVERHANG



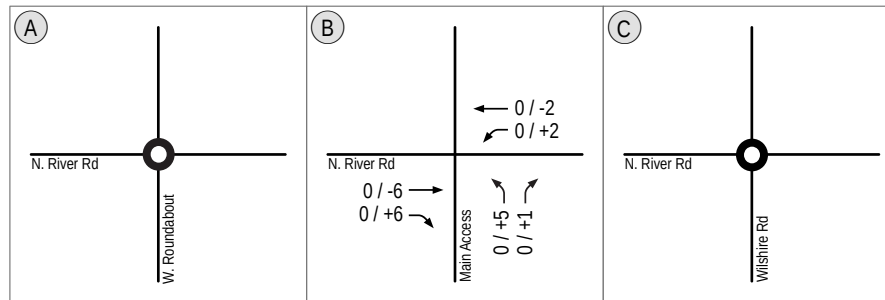
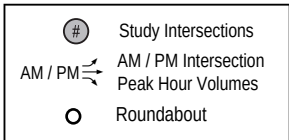
APRIL 30, 2018

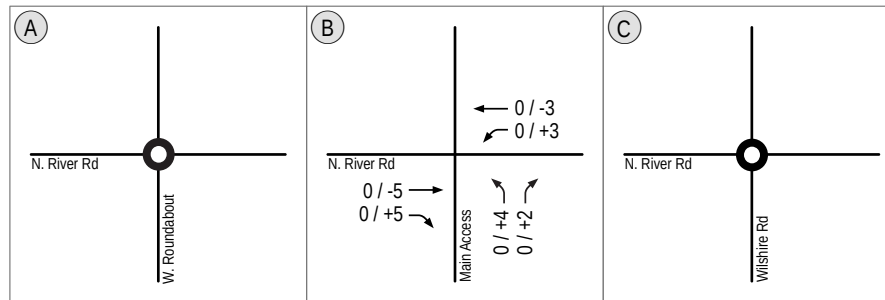
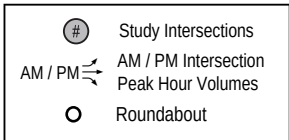
PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, INC.
PLANNING: 9707 Waples Street
ENGINEERING: San Diego, Ca 92121
SURVEYING: PH(858)558-4500 • FX(858)558-1414

SEMI-TRAILER TURN MOVEMENTS
NORTH RIVER FARMS
CITY OF OCEANSIDE, CALIFORNIA

APPENDIX M

PROJECT DRIVEWAY TRAFFIC VOLUMES – PASS-BY TRIPS





APPENDIX N

INTERSECTION ANALYSIS WORKSHEETS – PROJECT ACCESS INTERSECTIONS

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

Ex+P AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	35	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.2
8	T1	1	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.1
18	R2	9	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	32.2
Approach		45	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.0
East: N. River Rd											
1	L2	3	2.0	0.437	7.3	LOS A	3.2	80.4	0.33	0.16	34.1
6	T1	525	2.0	0.437	7.3	LOS A	3.2	80.4	0.33	0.16	34.0
16	R2	17	2.0	0.437	7.3	LOS A	3.2	80.4	0.33	0.16	33.1
Approach		546	2.0	0.437	7.3	LOS A	3.2	80.4	0.33	0.16	34.0
North: E Access											
7	L2	20	2.0	0.116	6.3	LOS A	0.5	12.5	0.60	0.54	33.9
4	T1	1	2.0	0.116	6.3	LOS A	0.5	12.5	0.60	0.54	33.8
14	R2	62	2.0	0.116	6.3	LOS A	0.5	12.5	0.60	0.54	32.8
Approach		83	2.0	0.116	6.3	LOS A	0.5	12.5	0.60	0.54	33.1
West: N. River Rd											
5	L2	36	2.0	0.327	5.7	LOS A	2.3	58.2	0.17	0.05	34.7
2	T1	379	2.0	0.327	5.7	LOS A	2.3	58.2	0.17	0.05	34.6
12	R2	14	2.0	0.327	5.7	LOS A	2.3	58.2	0.17	0.05	33.6
Approach		429	2.0	0.327	5.7	LOS A	2.3	58.2	0.17	0.05	34.6
All Vehicles		1102	2.0	0.437	6.5	LOS A	3.2	80.4	0.29	0.15	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

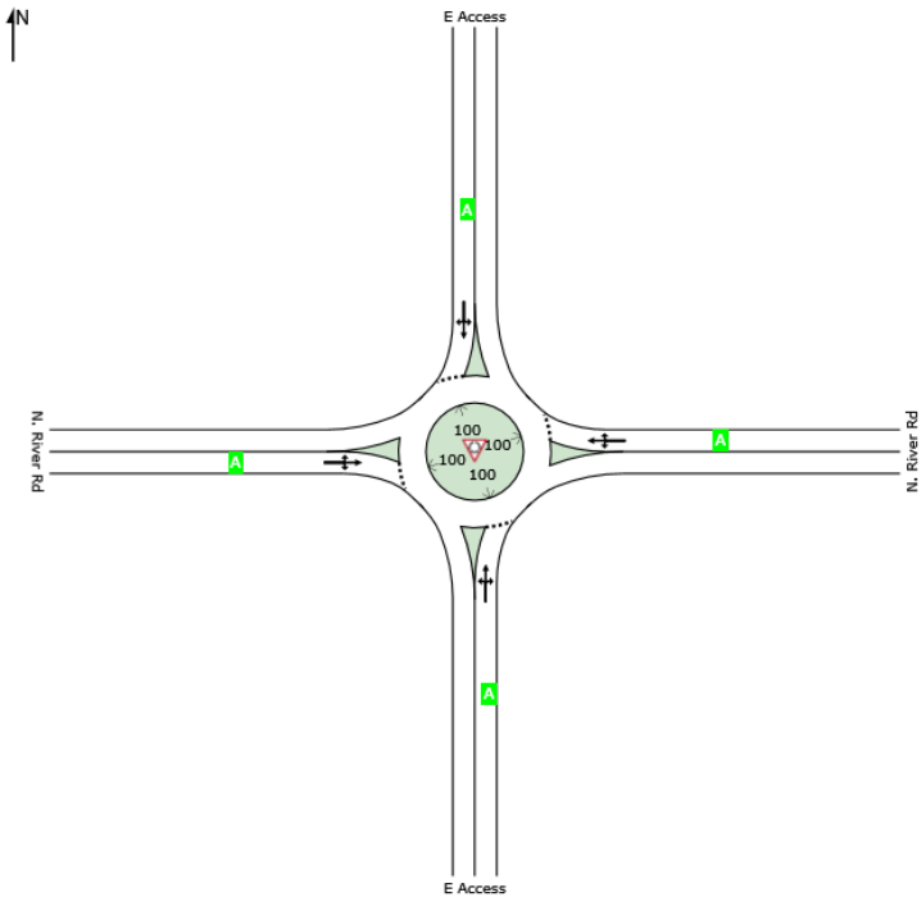
Lane Level of Service

 Site: 6 [6. N. River Rd / Wilshire Rd]

Ex+P AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / W. Access]**

Ex+P AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	47	2.0	0.078	5.1	LOS A	0.3	8.3	0.52	0.42	33.2
8	T1	1	2.0	0.078	5.1	LOS A	0.3	8.3	0.52	0.42	33.1
18	R2	17	2.0	0.078	5.1	LOS A	0.3	8.3	0.52	0.42	32.2
Approach		65	2.0	0.078	5.1	LOS A	0.3	8.3	0.52	0.42	32.9
East: N. River Rd											
1	L2	8	2.0	0.606	10.2	LOS B	6.1	154.4	0.44	0.21	32.7
6	T1	742	2.0	0.606	10.2	LOS B	6.1	154.4	0.44	0.21	32.6
16	R2	8	2.0	0.606	10.2	LOS B	6.1	154.4	0.44	0.21	31.7
Approach		758	2.0	0.606	10.2	LOS B	6.1	154.4	0.44	0.21	32.6
North: W Access											
7	L2	17	2.0	0.127	8.5	LOS A	0.5	13.4	0.69	0.69	32.7
4	T1	1	2.0	0.127	8.5	LOS A	0.5	13.4	0.69	0.69	32.6
14	R2	48	2.0	0.127	8.5	LOS A	0.5	13.4	0.69	0.69	31.7
Approach		66	2.0	0.127	8.5	LOS A	0.5	13.4	0.69	0.69	32.0
West: N. River Rd											
5	L2	20	2.0	0.341	5.9	LOS A	2.4	61.2	0.18	0.06	34.7
2	T1	407	2.0	0.341	5.9	LOS A	2.4	61.2	0.18	0.06	34.7
12	R2	21	2.0	0.341	5.9	LOS A	2.4	61.2	0.18	0.06	33.7
Approach		447	2.0	0.341	5.9	LOS A	2.4	61.2	0.18	0.06	34.6
All Vehicles		1336	2.0	0.606	8.4	LOS A	6.1	154.4	0.37	0.19	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

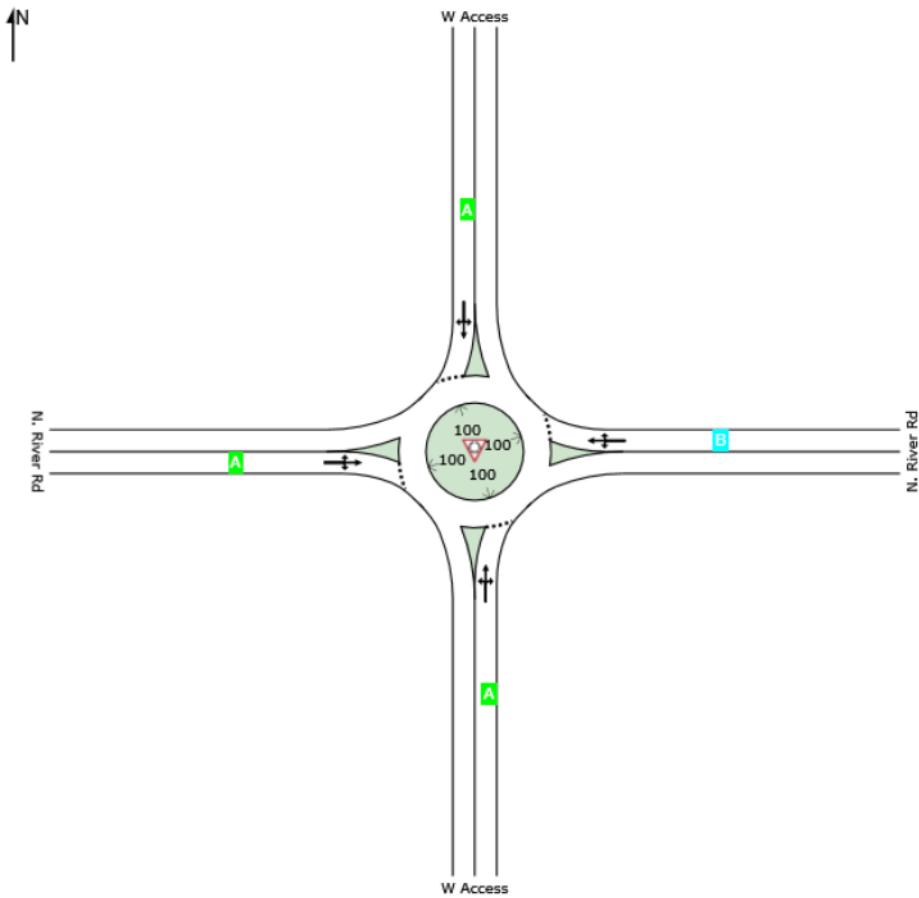
Lane Level of Service

 **Site: 24 [24. N. River Rd / W. Access]**

Ex+P AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	344	37	13	551	8	87	0	31	20	0	59
Future Volume (veh/h)	25	344	37	13	551	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	374	40	14	599	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1260	564	33	1205	539	407	0	240	435	0	240
Arrive On Green	0.03	0.36	0.36	0.02	0.34	0.34	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	374	40	14	599	9	95	0	34	22	0	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.4	2.2	0.5	0.2	3.8	0.1	1.9	0.0	0.5	0.4	0.0	1.0
Cycle Q Clear(g_c), s	0.4	2.2	0.5	0.2	3.8	0.1	2.9	0.0	0.5	0.9	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1260	564	33	1205	539	407	0	240	435	0	240
V/C Ratio(X)	0.45	0.30	0.07	0.43	0.50	0.02	0.23	0.00	0.14	0.05	0.00	0.27
Avail Cap(c_a), veh/h	312	2923	1307	312	2923	1307	1048	0	1001	1093	0	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	6.6	6.1	13.8	7.4	6.2	12.0	0.0	10.5	10.9	0.0	10.7
Incr Delay (d2), s/veh	5.2	0.1	0.1	8.6	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	0.2	0.2	1.9	0.0	0.7	0.0	0.2	0.2	0.0	0.5
LnGrp Delay(d),s/veh	18.7	6.7	6.1	22.5	7.8	6.2	12.3	0.0	10.7	10.9	0.0	11.3
LnGrp LOS	B	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		441			622			129			86	
Approach Delay, s/veh		7.4			8.1			11.9			11.2	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	14.6		8.8	5.5	14.2		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	4.2		3.0	2.4	5.8		4.9				
Green Ext Time (p_c), s	0.0	2.5		0.3	0.0	3.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			8.4									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

Ex+P PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	23	2.0	0.050	6.8	LOS A	0.2	5.1	0.64	0.58	32.3
8	T1	1	2.0	0.050	6.8	LOS A	0.2	5.1	0.64	0.58	32.2
18	R2	5	2.0	0.050	6.8	LOS A	0.2	5.1	0.64	0.58	31.4
Approach		29	2.0	0.050	6.8	LOS A	0.2	5.1	0.64	0.58	32.1
East: N. River Rd											
1	L2	11	2.0	0.395	6.8	LOS A	2.6	66.9	0.34	0.17	34.3
6	T1	449	2.0	0.395	6.8	LOS A	2.6	66.9	0.34	0.17	34.2
16	R2	25	2.0	0.395	6.8	LOS A	2.6	66.9	0.34	0.17	33.3
Approach		485	2.0	0.395	6.8	LOS A	2.6	66.9	0.34	0.17	34.2
North: E Access											
7	L2	26	2.0	0.128	5.9	LOS A	0.6	14.2	0.57	0.50	34.0
4	T1	1	2.0	0.128	5.9	LOS A	0.6	14.2	0.57	0.50	33.9
14	R2	73	2.0	0.128	5.9	LOS A	0.6	14.2	0.57	0.50	32.9
Approach		100	2.0	0.128	5.9	LOS A	0.6	14.2	0.57	0.50	33.2
West: N. River Rd											
5	L2	63	2.0	0.582	9.5	LOS A	5.9	150.7	0.32	0.12	32.8
2	T1	645	2.0	0.582	9.5	LOS A	5.9	150.7	0.32	0.12	32.7
12	R2	45	2.0	0.582	9.5	LOS A	5.9	150.7	0.32	0.12	31.9
Approach		752	2.0	0.582	9.5	LOS A	5.9	150.7	0.32	0.12	32.7
All Vehicles		1366	2.0	0.582	8.2	LOS A	5.9	150.7	0.35	0.18	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

Lane Level of Service

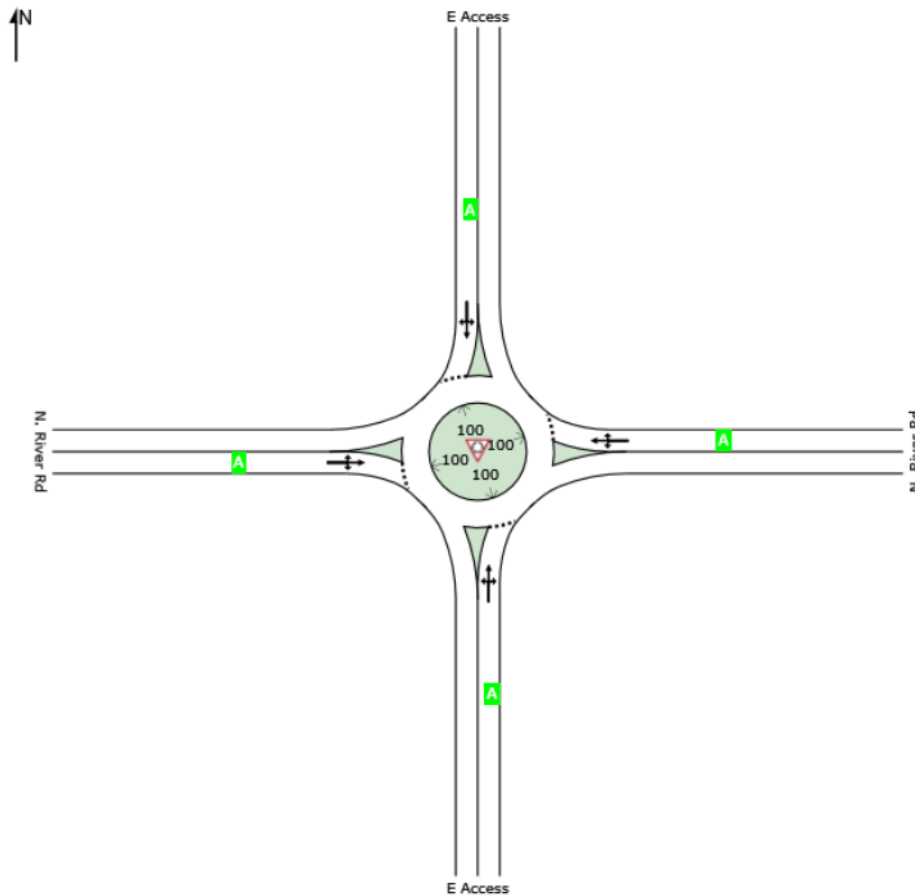


Site: 6 [6. N. River Rd / Wilshire Rd]

Ex+P PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / West Access]**

Ex+P PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	30	2.0	0.108	10.5	LOS B	0.4	11.0	0.73	0.73	30.8
8	T1	1	2.0	0.108	10.5	LOS B	0.4	11.0	0.73	0.73	30.8
18	R2	12	2.0	0.108	10.5	LOS B	0.4	11.0	0.73	0.73	30.0
Approach		43	2.0	0.108	10.5	LOS B	0.4	11.0	0.73	0.73	30.6
East: N. River Rd											
1	L2	22	2.0	0.473	7.9	LOS A	3.6	91.4	0.40	0.21	33.7
6	T1	533	2.0	0.473	7.9	LOS A	3.6	91.4	0.40	0.21	33.6
16	R2	22	2.0	0.473	7.9	LOS A	3.6	91.4	0.40	0.21	32.7
Approach		576	2.0	0.473	7.9	LOS A	3.6	91.4	0.40	0.21	33.6
North: W Access											
7	L2	11	2.0	0.062	5.9	LOS A	0.3	6.5	0.60	0.52	34.0
4	T1	1	2.0	0.062	5.9	LOS A	0.3	6.5	0.60	0.52	33.9
14	R2	30	2.0	0.062	5.9	LOS A	0.3	6.5	0.60	0.52	33.0
Approach		42	2.0	0.062	5.9	LOS A	0.3	6.5	0.60	0.52	33.3
West: N. River Rd											
5	L2	61	2.0	0.782	15.8	LOS C	13.3	337.0	0.49	0.19	30.1
2	T1	897	2.0	0.782	15.8	LOS C	13.3	337.0	0.49	0.19	30.1
12	R2	61	2.0	0.782	15.8	LOS C	13.3	337.0	0.49	0.19	29.3
Approach		1018	2.0	0.782	15.8	LOS C	13.3	337.0	0.49	0.19	30.0
All Vehicles		1680	2.0	0.782	12.7	LOS B	13.3	337.0	0.47	0.22	31.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

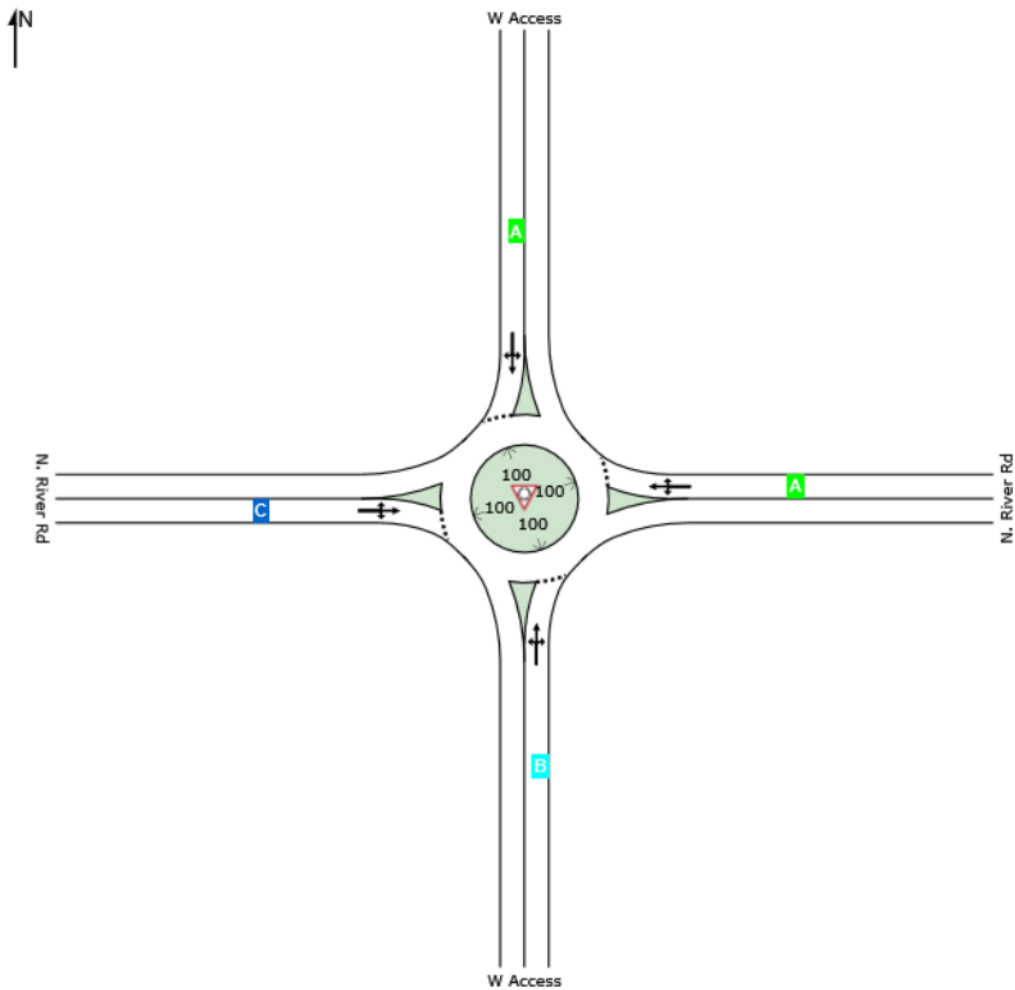
Lane Level of Service

 **Site: 24 [24. N. River Rd / West Access]**

Ex+P PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	B	A	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	652	118	42	434	25	61	0	22	13	0	38
Future Volume (veh/h)	76	652	118	42	434	25	61	0	22	13	0	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	709	128	46	472	27	66	0	24	14	0	41
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1397	625	94	1292	578	358	0	182	374	0	182
Arrive On Green	0.08	0.39	0.39	0.05	0.37	0.37	0.12	0.00	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1360	0	1583	1381	0	1583
Grp Volume(v), veh/h	83	709	128	46	472	27	66	0	24	14	0	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1360	0	1583	1381	0	1583
Q Serve(g_s), s	1.4	4.7	1.6	0.8	3.0	0.3	1.4	0.0	0.4	0.3	0.0	0.7
Cycle Q Clear(g_c), s	1.4	4.7	1.6	0.8	3.0	0.3	2.2	0.0	0.4	0.7	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1397	625	94	1292	578	358	0	182	374	0	182
V/C Ratio(X)	0.57	0.51	0.20	0.49	0.37	0.05	0.18	0.00	0.13	0.04	0.00	0.22
Avail Cap(c_a), veh/h	333	3267	1462	287	3175	1421	994	0	923	1020	0	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	7.1	6.2	14.2	7.2	6.3	13.4	0.0	12.3	12.6	0.0	12.4
Incr Delay (d2), s/veh	3.4	0.3	0.2	3.9	0.2	0.0	0.2	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	0.7	0.5	1.5	0.2	0.6	0.0	0.2	0.1	0.0	0.4
LnGrp Delay(d),s/veh	17.1	7.4	6.3	18.2	7.4	6.4	13.6	0.0	12.6	12.6	0.0	13.0
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h		920			545			90			55	
Approach Delay, s/veh		8.1			8.2			13.4			12.9	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	16.7		8.1	7.0	15.8		8.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	28.5		18.0	5.8	27.7		18.0				
Max Q Clear Time (g_c+I1), s	2.8	6.7		2.7	3.4	5.0		4.2				
Green Ext Time (p_c), s	0.0	5.5		0.1	0.0	3.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.6									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

Ex+C+P AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	35	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.2
8	T1	1	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.1
18	R2	9	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	32.2
Approach		45	2.0	0.053	4.8	LOS A	0.2	5.5	0.51	0.39	33.0
East: N. River Rd											
1	L2	3	2.0	0.445	7.4	LOS A	3.3	82.9	0.33	0.16	34.1
6	T1	535	2.0	0.445	7.4	LOS A	3.3	82.9	0.33	0.16	34.0
16	R2	17	2.0	0.445	7.4	LOS A	3.3	82.9	0.33	0.16	33.0
Approach		555	2.0	0.445	7.4	LOS A	3.3	82.9	0.33	0.16	34.0
North: E Access											
7	L2	20	2.0	0.117	6.4	LOS A	0.5	12.6	0.60	0.55	33.8
4	T1	1	2.0	0.117	6.4	LOS A	0.5	12.6	0.60	0.55	33.8
14	R2	62	2.0	0.117	6.4	LOS A	0.5	12.6	0.60	0.55	32.8
Approach		83	2.0	0.117	6.4	LOS A	0.5	12.6	0.60	0.55	33.0
West: N. River Rd											
5	L2	36	2.0	0.331	5.7	LOS A	2.3	59.4	0.17	0.05	34.7
2	T1	385	2.0	0.331	5.7	LOS A	2.3	59.4	0.17	0.05	34.6
12	R2	14	2.0	0.331	5.7	LOS A	2.3	59.4	0.17	0.05	33.6
Approach		435	2.0	0.331	5.7	LOS A	2.3	59.4	0.17	0.05	34.6
All Vehicles		1117	2.0	0.445	6.6	LOS A	3.3	82.9	0.29	0.16	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

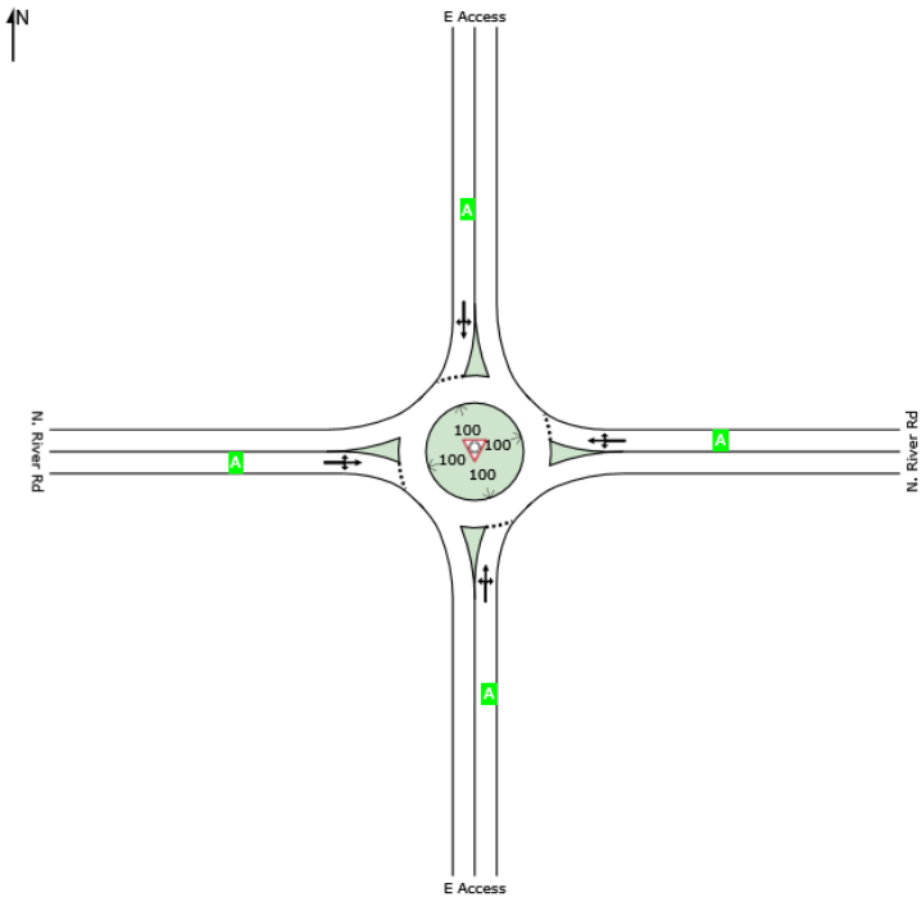
Lane Level of Service

 Site: 6 [6. N. River Rd / Wilshire Rd]

Ex+C+P AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / West Access]**

Ex+C+P AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	47	2.0	0.079	5.1	LOS A	0.3	8.3	0.52	0.42	33.2
8	T1	1	2.0	0.079	5.1	LOS A	0.3	8.3	0.52	0.42	33.1
18	R2	17	2.0	0.079	5.1	LOS A	0.3	8.3	0.52	0.42	32.2
Approach		65	2.0	0.079	5.1	LOS A	0.3	8.3	0.52	0.42	32.9
East: N. River Rd											
1	L2	8	2.0	0.613	10.4	LOS B	6.3	159.0	0.44	0.22	32.6
6	T1	752	2.0	0.613	10.4	LOS B	6.3	159.0	0.44	0.22	32.5
16	R2	8	2.0	0.613	10.4	LOS B	6.3	159.0	0.44	0.22	31.6
Approach		767	2.0	0.613	10.4	LOS B	6.3	159.0	0.44	0.22	32.5
North: W Access											
7	L2	17	2.0	0.129	8.7	LOS A	0.5	13.6	0.69	0.69	32.6
4	T1	1	2.0	0.129	8.7	LOS A	0.5	13.6	0.69	0.69	32.5
14	R2	48	2.0	0.129	8.7	LOS A	0.5	13.6	0.69	0.69	31.7
Approach		66	2.0	0.129	8.7	LOS A	0.5	13.6	0.69	0.69	31.9
West: N. River Rd											
5	L2	20	2.0	0.346	5.9	LOS A	2.5	62.6	0.18	0.06	34.7
2	T1	413	2.0	0.346	5.9	LOS A	2.5	62.6	0.18	0.06	34.6
12	R2	21	2.0	0.346	5.9	LOS A	2.5	62.6	0.18	0.06	33.6
Approach		453	2.0	0.346	5.9	LOS A	2.5	62.6	0.18	0.06	34.6
All Vehicles		1352	2.0	0.613	8.6	LOS A	6.3	159.0	0.37	0.20	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

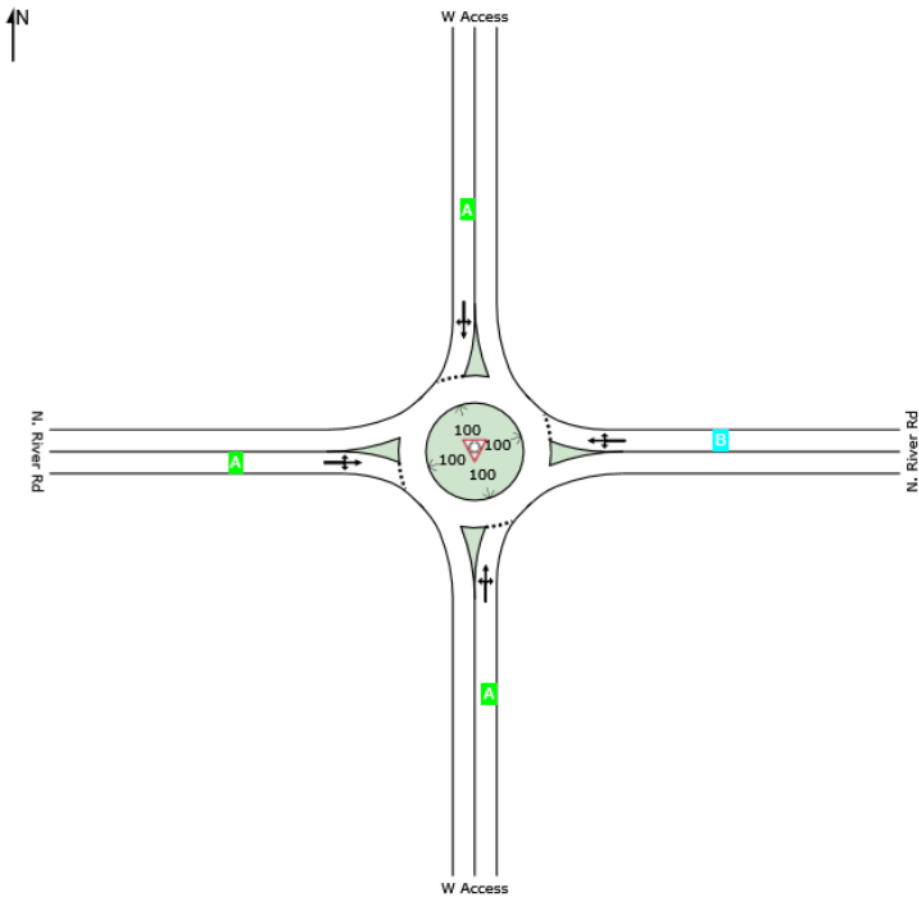
Lane Level of Service

 **Site: 24 [24. N. River Rd / West Access]**

Ex+C+P AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	350	37	13	560	8	87	0	31	20	0	59
Future Volume (veh/h)	25	350	37	13	560	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	380	40	14	609	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1270	568	33	1216	544	405	0	239	433	0	239
Arrive On Green	0.03	0.36	0.36	0.02	0.34	0.34	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	380	40	14	609	9	95	0	34	22	0	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.4	2.2	0.5	0.2	3.9	0.1	1.9	0.0	0.5	0.4	0.0	1.0
Cycle Q Clear(g_c), s	0.4	2.2	0.5	0.2	3.9	0.1	3.0	0.0	0.5	0.9	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1270	568	33	1216	544	405	0	239	433	0	239
V/C Ratio(X)	0.45	0.30	0.07	0.43	0.50	0.02	0.23	0.00	0.14	0.05	0.00	0.27
Avail Cap(c_a), veh/h	310	2904	1299	310	2904	1299	1041	0	995	1086	0	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	6.6	6.0	13.9	7.5	6.2	12.1	0.0	10.5	10.9	0.0	10.7
Incr Delay (d2), s/veh	5.2	0.1	0.1	8.7	0.3	0.0	0.3	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	0.2	0.2	1.9	0.0	0.7	0.0	0.2	0.2	0.0	0.5
LnGrp Delay(d),s/veh	18.8	6.7	6.1	22.6	7.8	6.2	12.4	0.0	10.8	11.0	0.0	11.3
LnGrp LOS	B	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		447			632			129			86	
Approach Delay, s/veh		7.4			8.1			11.9			11.3	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	14.8		8.8	5.5	14.3		8.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	4.2		3.0	2.4	5.9		5.0				
Green Ext Time (p_c), s	0.0	2.5		0.3	0.0	3.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			8.4									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

Ex+C+P PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	23	2.0	0.051	6.9	LOS A	0.2	5.2	0.64	0.59	32.2
8	T1	1	2.0	0.051	6.9	LOS A	0.2	5.2	0.64	0.59	32.2
18	R2	5	2.0	0.051	6.9	LOS A	0.2	5.2	0.64	0.59	31.3
Approach		29	2.0	0.051	6.9	LOS A	0.2	5.2	0.64	0.59	32.0
East: N. River Rd											
1	L2	11	2.0	0.400	6.9	LOS A	2.7	68.4	0.34	0.18	34.3
6	T1	455	2.0	0.400	6.9	LOS A	2.7	68.4	0.34	0.18	34.2
16	R2	25	2.0	0.400	6.9	LOS A	2.7	68.4	0.34	0.18	33.2
Approach		491	2.0	0.400	6.9	LOS A	2.7	68.4	0.34	0.18	34.2
North: E Access											
7	L2	26	2.0	0.129	6.0	LOS A	0.6	14.3	0.57	0.50	34.0
4	T1	1	2.0	0.129	6.0	LOS A	0.6	14.3	0.57	0.50	33.9
14	R2	73	2.0	0.129	6.0	LOS A	0.6	14.3	0.57	0.50	32.9
Approach		100	2.0	0.129	6.0	LOS A	0.6	14.3	0.57	0.50	33.2
West: N. River Rd											
5	L2	63	2.0	0.591	9.7	LOS A	6.1	156.2	0.32	0.13	32.7
2	T1	657	2.0	0.591	9.7	LOS A	6.1	156.2	0.32	0.13	32.7
12	R2	45	2.0	0.591	9.7	LOS A	6.1	156.2	0.32	0.13	31.8
Approach		764	2.0	0.591	9.7	LOS A	6.1	156.2	0.32	0.13	32.6
All Vehicles		1385	2.0	0.591	8.4	LOS A	6.1	156.2	0.35	0.18	33.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

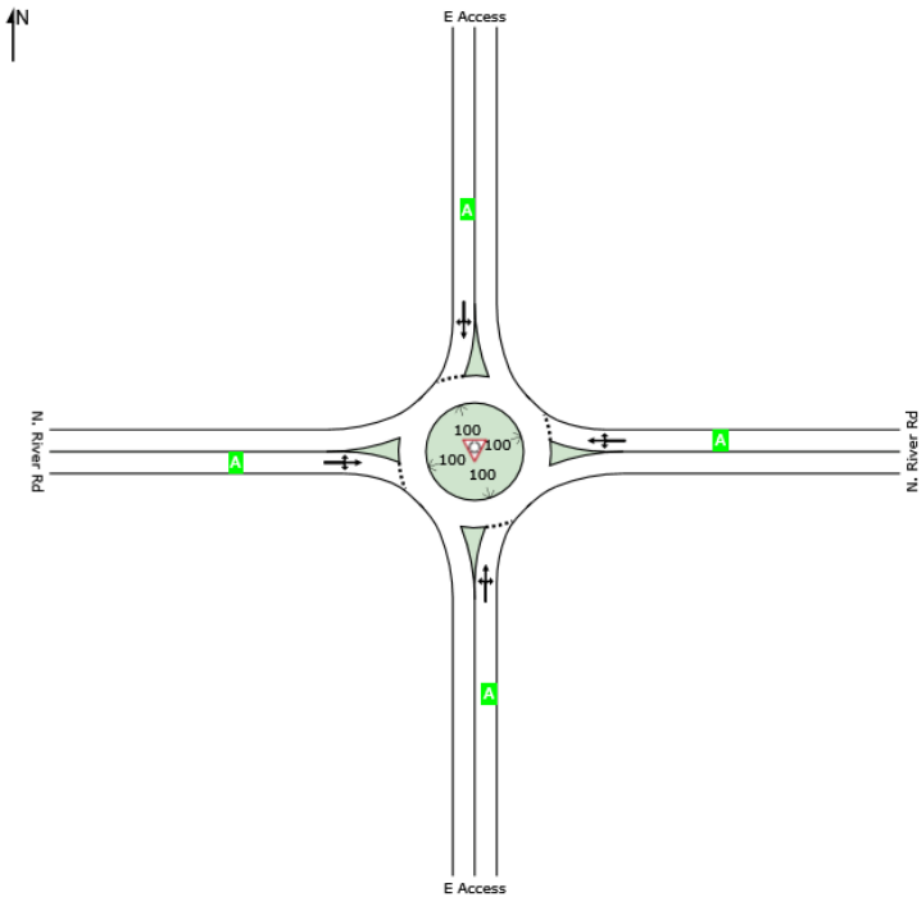
Lane Level of Service

 Site: 6 [6. N. River Rd / Wilshire Rd]

Ex+C+P PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / West Access]**

Ex+C+P PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	30	2.0	0.110	10.8	LOS B	0.4	11.2	0.73	0.73	30.7
8	T1	1	2.0	0.110	10.8	LOS B	0.4	11.2	0.73	0.73	30.6
18	R2	12	2.0	0.110	10.8	LOS B	0.4	11.2	0.73	0.73	29.9
Approach		43	2.0	0.110	10.8	LOS B	0.4	11.2	0.73	0.73	30.5
East: N. River Rd											
1	L2	22	2.0	0.480	8.0	LOS A	3.7	93.8	0.40	0.22	33.6
6	T1	540	2.0	0.480	8.0	LOS A	3.7	93.8	0.40	0.22	33.6
16	R2	22	2.0	0.480	8.0	LOS A	3.7	93.8	0.40	0.22	32.6
Approach		584	2.0	0.480	8.0	LOS A	3.7	93.8	0.40	0.22	33.5
North: W Access											
7	L2	11	2.0	0.062	6.0	LOS A	0.3	6.6	0.60	0.52	34.0
4	T1	1	2.0	0.062	6.0	LOS A	0.3	6.6	0.60	0.52	33.9
14	R2	30	2.0	0.062	6.0	LOS A	0.3	6.6	0.60	0.52	32.9
Approach		42	2.0	0.062	6.0	LOS A	0.3	6.6	0.60	0.52	33.2
West: N. River Rd											
5	L2	61	2.0	0.791	16.2	LOS C	13.9	353.0	0.51	0.19	30.0
2	T1	909	2.0	0.791	16.2	LOS C	13.9	353.0	0.51	0.19	29.9
12	R2	61	2.0	0.791	16.2	LOS C	13.9	353.0	0.51	0.19	29.2
Approach		1030	2.0	0.791	16.2	LOS C	13.9	353.0	0.51	0.19	29.9
All Vehicles		1700	2.0	0.791	13.0	LOS B	13.9	353.0	0.48	0.22	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

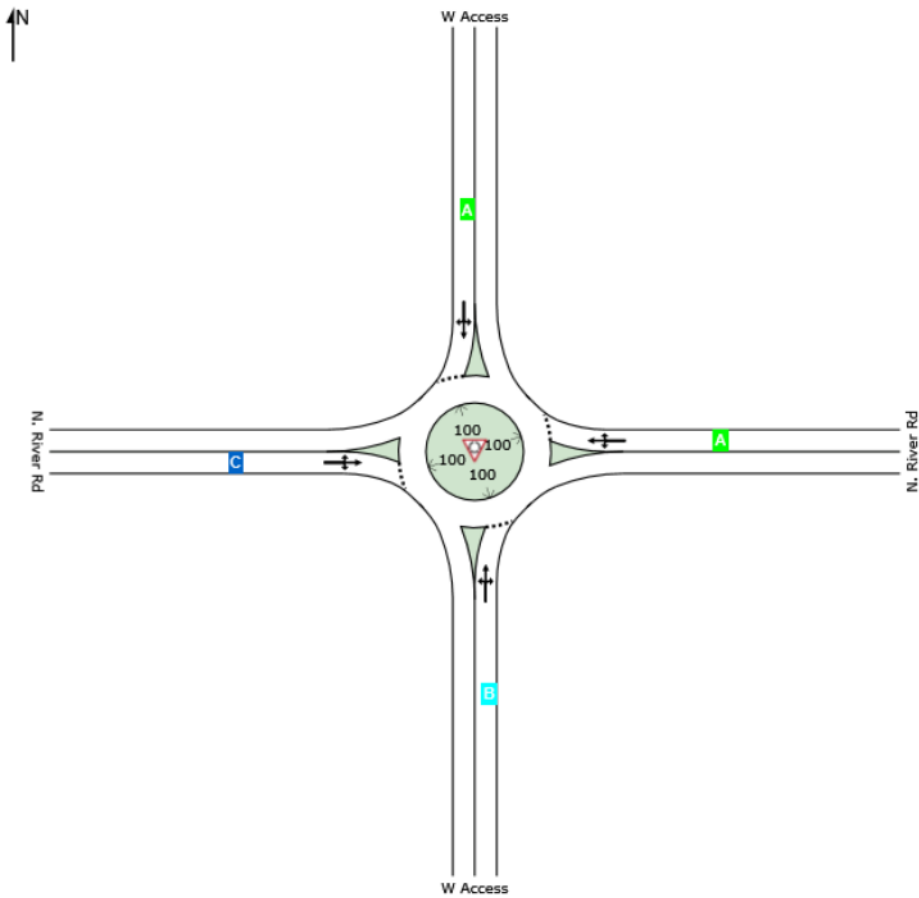
Lane Level of Service

 **Site: 24 [24. N. River Rd / West Access]**

Ex+C+P PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	B	A	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	663	118	42	441	25	61	0	22	13	0	38
Future Volume (veh/h)	76	663	118	42	441	25	61	0	22	13	0	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	721	128	46	479	27	66	0	24	14	0	41
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1410	631	94	1305	584	356	0	182	371	0	182
Arrive On Green	0.08	0.40	0.40	0.05	0.37	0.37	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1360	0	1583	1381	0	1583
Grp Volume(v), veh/h	83	721	128	46	479	27	66	0	24	14	0	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1360	0	1583	1381	0	1583
Q Serve(g_s), s	1.4	4.8	1.6	0.8	3.1	0.3	1.4	0.0	0.4	0.3	0.0	0.7
Cycle Q Clear(g_c), s	1.4	4.8	1.6	0.8	3.1	0.3	2.2	0.0	0.4	0.7	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1410	631	94	1305	584	356	0	182	371	0	182
V/C Ratio(X)	0.57	0.51	0.20	0.49	0.37	0.05	0.19	0.00	0.13	0.04	0.00	0.23
Avail Cap(c_a), veh/h	331	3244	1451	285	3153	1411	987	0	917	1012	0	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	7.1	6.1	14.3	7.2	6.3	13.5	0.0	12.4	12.7	0.0	12.5
Incr Delay (d2), s/veh	3.4	0.3	0.2	4.0	0.2	0.0	0.2	0.0	0.3	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	0.7	0.5	1.5	0.2	0.6	0.0	0.2	0.1	0.0	0.4
LnGrp Delay(d),s/veh	17.2	7.4	6.3	18.3	7.3	6.3	13.7	0.0	12.7	12.7	0.0	13.1
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h		932			552			90			55	
Approach Delay, s/veh		8.1			8.2			13.5			13.0	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	16.9		8.1	7.1	16.0		8.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	28.5		18.0	5.8	27.7		18.0				
Max Q Clear Time (g_c+I1), s	2.8	6.8		2.7	3.4	5.1		4.2				
Green Ext Time (p_c), s	0.0	5.6		0.1	0.0	3.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.6									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P AM w/ Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	29	2.0	0.067	6.5	LOS A	0.3	6.9	0.62	0.56	32.6
8	T1	1	2.0	0.067	6.5	LOS A	0.3	6.9	0.62	0.56	32.5
18	R2	12	2.0	0.067	6.5	LOS A	0.3	6.9	0.62	0.56	31.7
Approach		42	2.0	0.067	6.5	LOS A	0.3	6.9	0.62	0.56	32.3
East: N. River Rd											
1	L2	5	2.0	0.690	12.5	LOS B	8.0	203.1	0.53	0.27	31.6
6	T1	824	2.0	0.690	12.5	LOS B	8.0	203.1	0.53	0.27	31.6
16	R2	29	2.0	0.690	12.5	LOS B	8.0	203.1	0.53	0.27	30.7
Approach		859	2.0	0.690	12.5	LOS B	8.0	203.1	0.53	0.27	31.6
North: E Access											
7	L2	34	2.0	0.223	11.1	LOS B	1.0	24.4	0.74	0.74	31.4
4	T1	1	2.0	0.223	11.1	LOS B	1.0	24.4	0.74	0.74	31.3
14	R2	68	2.0	0.223	11.1	LOS B	1.0	24.4	0.74	0.74	30.5
Approach		103	2.0	0.223	11.1	LOS B	1.0	24.4	0.74	0.74	30.8
West: N. River Rd											
5	L2	43	2.0	0.506	8.2	LOS A	4.7	120.5	0.30	0.12	33.5
2	T1	595	2.0	0.506	8.2	LOS A	4.7	120.5	0.30	0.12	33.4
12	R2	13	2.0	0.506	8.2	LOS A	4.7	120.5	0.30	0.12	32.5
Approach		651	2.0	0.506	8.2	LOS A	4.7	120.5	0.30	0.12	33.4
All Vehicles		1655	2.0	0.690	10.5	LOS B	8.0	203.1	0.46	0.25	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

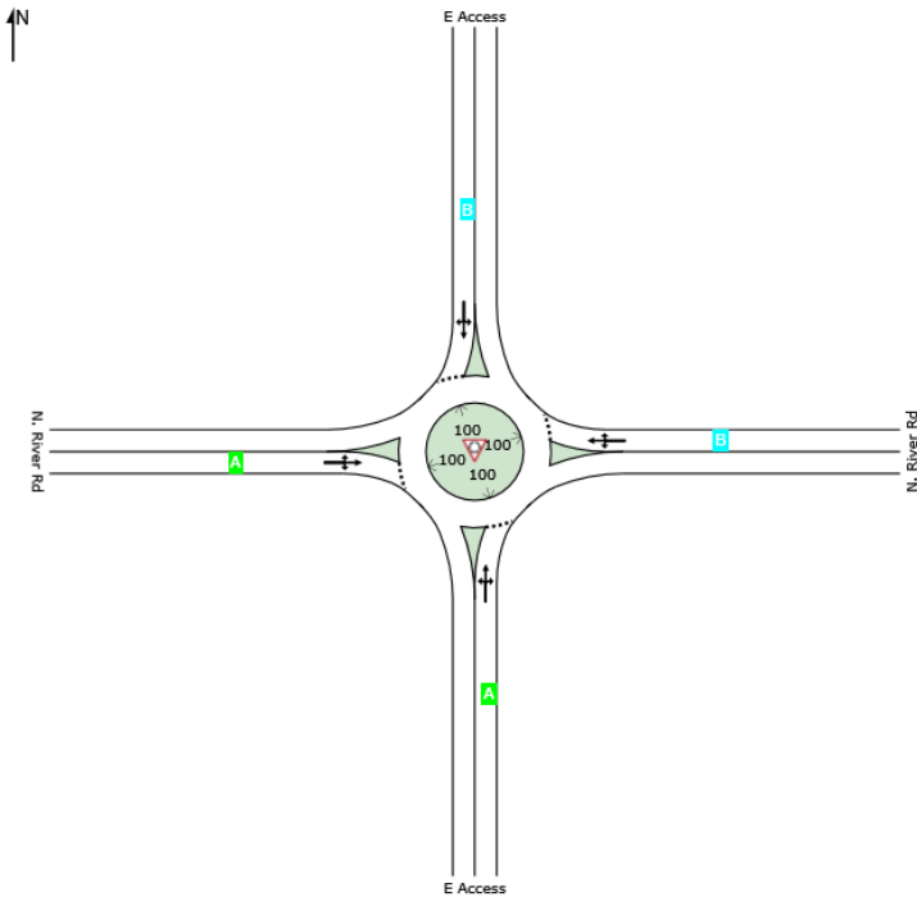
Lane Level of Service

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P AM w/ Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P AM w/ Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	39	2.0	0.099	6.5	LOS A	0.4	10.4	0.61	0.56	32.9
8	T1	1	2.0	0.099	6.5	LOS A	0.4	10.4	0.61	0.56	32.8
18	R2	26	2.0	0.099	6.5	LOS A	0.4	10.4	0.61	0.56	31.9
Approach		66	2.0	0.099	6.5	LOS A	0.4	10.4	0.61	0.56	32.5
East: N. River Rd											
1	L2	11	2.0	0.803	17.3	LOS C	14.1	358.8	0.69	0.32	29.7
6	T1	995	2.0	0.803	17.3	LOS C	14.1	358.8	0.69	0.32	29.6
16	R2	11	2.0	0.803	17.3	LOS C	14.1	358.8	0.69	0.32	28.9
Approach		1016	2.0	0.803	17.3	LOS C	14.1	358.8	0.69	0.32	29.6
North: W Access											
7	L2	26	2.0	0.199	14.5	LOS B	0.8	21.1	0.79	0.79	29.8
4	T1	1	2.0	0.199	14.5	LOS B	0.8	21.1	0.79	0.79	29.8
14	R2	39	2.0	0.199	14.5	LOS B	0.8	21.1	0.79	0.79	29.0
Approach		66	2.0	0.199	14.5	LOS B	0.8	21.1	0.79	0.79	29.4
West: N. River Rd											
5	L2	16	2.0	0.477	7.7	LOS A	4.2	106.0	0.27	0.10	33.9
2	T1	583	2.0	0.477	7.7	LOS A	4.2	106.0	0.27	0.10	33.8
12	R2	16	2.0	0.477	7.7	LOS A	4.2	106.0	0.27	0.10	32.8
Approach		615	2.0	0.477	7.7	LOS A	4.2	106.0	0.27	0.10	33.8
All Vehicles		1764	2.0	0.803	13.4	LOS B	14.1	358.8	0.54	0.27	31.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

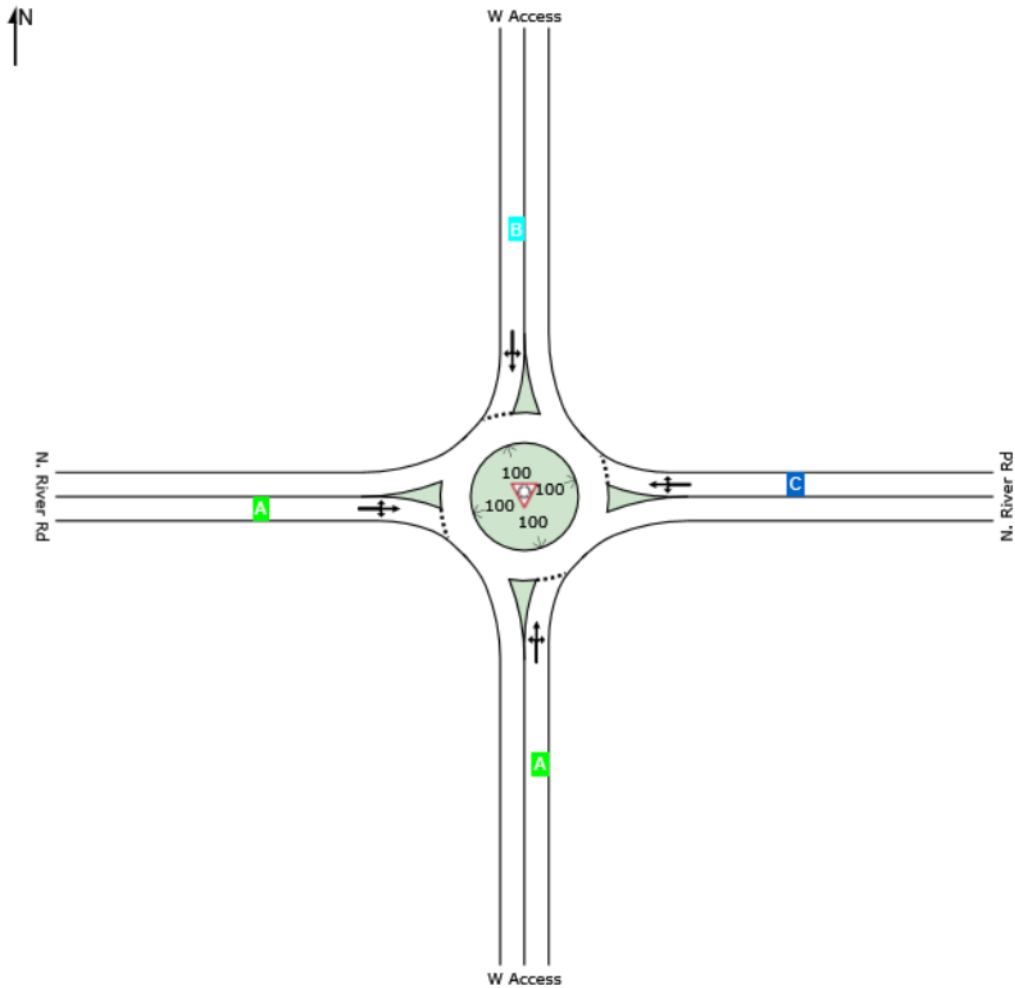
Lane Level of Service

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P AM w/ Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	C	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	534	30	19	816	13	71	0	48	32	0	48
Future Volume (veh/h)	20	534	30	19	816	13	71	0	48	32	0	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	22	580	33	21	887	14	77	0	52	35	0	52
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	1727	772	46	1723	771	326	0	207	326	0	207
Arrive On Green	0.03	0.49	0.49	0.03	0.49	0.49	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1347	0	1583	1347	0	1583
Grp Volume(v), veh/h	22	580	33	21	887	14	77	0	52	35	0	52
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1347	0	1583	1347	0	1583
Q Serve(g_s), s	0.5	3.8	0.4	0.4	6.5	0.2	2.1	0.0	1.1	0.9	0.0	1.1
Cycle Q Clear(g_c), s	0.5	3.8	0.4	0.4	6.5	0.2	3.2	0.0	1.1	2.0	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	1727	772	46	1723	771	326	0	207	326	0	207
V/C Ratio(X)	0.45	0.34	0.04	0.45	0.51	0.02	0.24	0.00	0.25	0.11	0.00	0.25
Avail Cap(c_a), veh/h	233	1727	772	233	1723	771	788	0	750	788	0	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	6.0	5.1	18.2	6.7	5.1	16.3	0.0	14.8	15.8	0.0	14.8
Incr Delay (d2), s/veh	6.5	0.5	0.1	6.7	1.1	0.0	0.4	0.0	0.6	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.0	0.2	0.3	3.3	0.1	0.8	0.0	0.5	0.4	0.0	0.5
LnGrp Delay(d),s/veh	24.7	6.5	5.2	25.0	7.8	5.1	16.6	0.0	15.5	15.9	0.0	15.5
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		635			922			129			87	
Approach Delay, s/veh		7.1			8.1			16.2			15.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	23.0		9.5	5.5	23.0		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.4	5.8		4.0	2.5	8.5		5.2				
Green Ext Time (p_c), s	0.0	3.3		0.2	0.0	4.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P PM w/ Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	21	2.0	0.082	11.0	LOS B	0.3	8.5	0.75	0.75	30.7
8	T1	1	2.0	0.082	11.0	LOS B	0.3	8.5	0.75	0.75	30.6
18	R2	9	2.0	0.082	11.0	LOS B	0.3	8.5	0.75	0.75	29.8
Approach		30	2.0	0.082	11.0	LOS B	0.3	8.5	0.75	0.75	30.4
East: N. River Rd											
1	L2	16	2.0	0.617	10.6	LOS B	6.3	161.3	0.50	0.26	32.4
6	T1	698	2.0	0.617	10.6	LOS B	6.3	161.3	0.50	0.26	32.4
16	R2	43	2.0	0.617	10.6	LOS B	6.3	161.3	0.50	0.26	31.5
Approach		758	2.0	0.617	10.6	LOS B	6.3	161.3	0.50	0.26	32.3
North: E Access											
7	L2	43	2.0	0.248	9.9	LOS A	1.1	28.3	0.72	0.72	31.9
4	T1	1	2.0	0.248	9.9	LOS A	1.1	28.3	0.72	0.72	31.9
14	R2	92	2.0	0.248	9.9	LOS A	1.1	28.3	0.72	0.72	31.0
Approach		137	2.0	0.248	9.9	LOS A	1.1	28.3	0.72	0.72	31.3
West: N. River Rd											
5	L2	60	2.0	0.776	15.8	LOS C	12.5	318.3	0.66	0.32	30.1
2	T1	877	2.0	0.776	15.8	LOS C	12.5	318.3	0.66	0.32	30.1
12	R2	38	2.0	0.776	15.8	LOS C	12.5	318.3	0.66	0.32	29.3
Approach		975	2.0	0.776	15.8	LOS C	12.5	318.3	0.66	0.32	30.0
All Vehicles		1900	2.0	0.776	13.3	LOS B	12.5	318.3	0.60	0.33	31.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

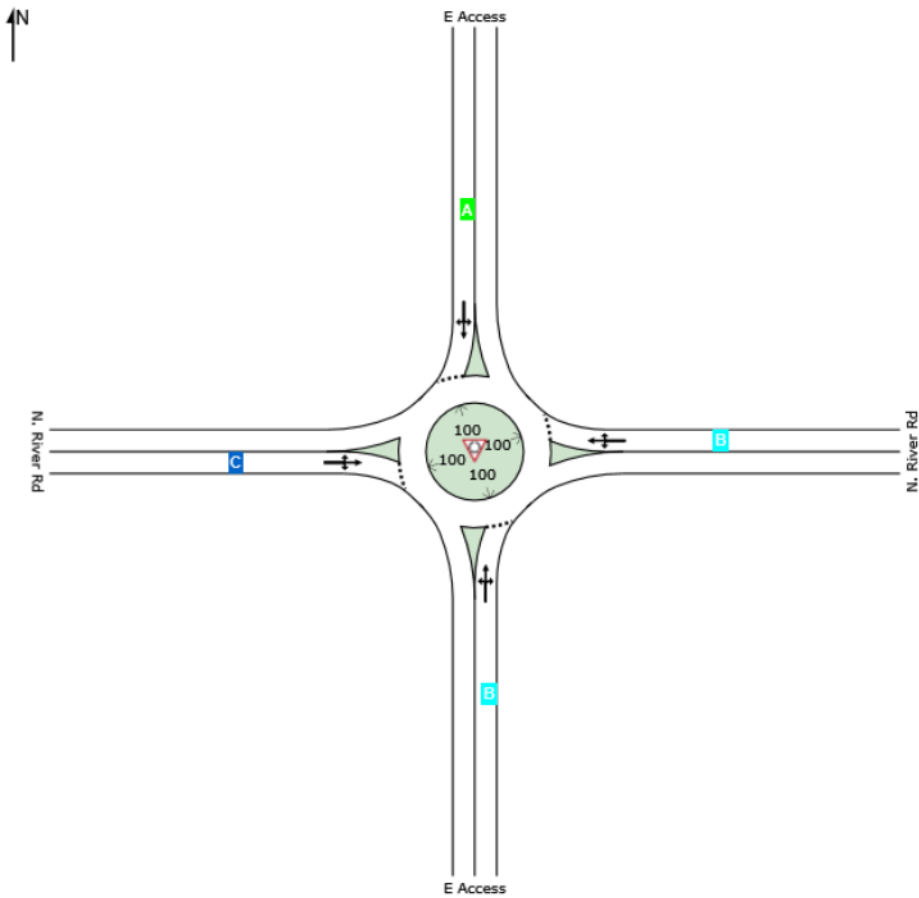
Lane Level of Service

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P PM w/ Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	B	B	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P PM w/ Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	25	2.0	0.176	19.1	LOS C	0.7	19.0	0.85	0.85	27.8
8	T1	1	2.0	0.176	19.1	LOS C	0.7	19.0	0.85	0.85	27.8
18	R2	16	2.0	0.176	19.1	LOS C	0.7	19.0	0.85	0.85	27.1
Approach		42	2.0	0.176	19.1	LOS C	0.7	19.0	0.85	0.85	27.6
East: N. River Rd											
1	L2	33	2.0	0.637	11.1	LOS B	7.2	182.0	0.52	0.27	32.2
6	T1	717	2.0	0.637	11.1	LOS B	7.2	182.0	0.52	0.27	32.1
16	R2	34	2.0	0.637	11.1	LOS B	7.2	182.0	0.52	0.27	31.3
Approach		784	2.0	0.637	11.1	LOS B	7.2	182.0	0.52	0.27	32.1
North: W Access											
7	L2	16	2.0	0.081	7.9	LOS A	0.3	8.6	0.68	0.66	32.7
4	T1	1	2.0	0.081	7.9	LOS A	0.3	8.6	0.68	0.66	32.6
14	R2	25	2.0	0.081	7.9	LOS A	0.3	8.6	0.68	0.66	31.7
Approach		42	2.0	0.081	7.9	LOS A	0.3	8.6	0.68	0.66	32.1
West: N. River Rd											
5	L2	50	2.0	0.902	25.7	LOS D	24.7	628.6	1.00	0.45	26.7
2	T1	1052	2.0	0.902	25.7	LOS D	24.7	628.6	1.00	0.45	26.6
12	R2	50	2.0	0.902	25.7	LOS D	24.7	628.6	1.00	0.45	26.0
Approach		1152	2.0	0.902	25.7	LOS D	24.7	628.6	1.00	0.45	26.6
All Vehicles		2021	2.0	0.902	19.5	LOS C	24.7	628.6	0.81	0.39	28.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: LINSOTT, LAW & GREENSPAN ENGINEERS | Processed: Thursday, June 07, 2018 10:31:30 AM

Project: N:\2596\Analysis\SIDRA\2035A+P PM.sip7

LANE LEVEL OF SERVICE

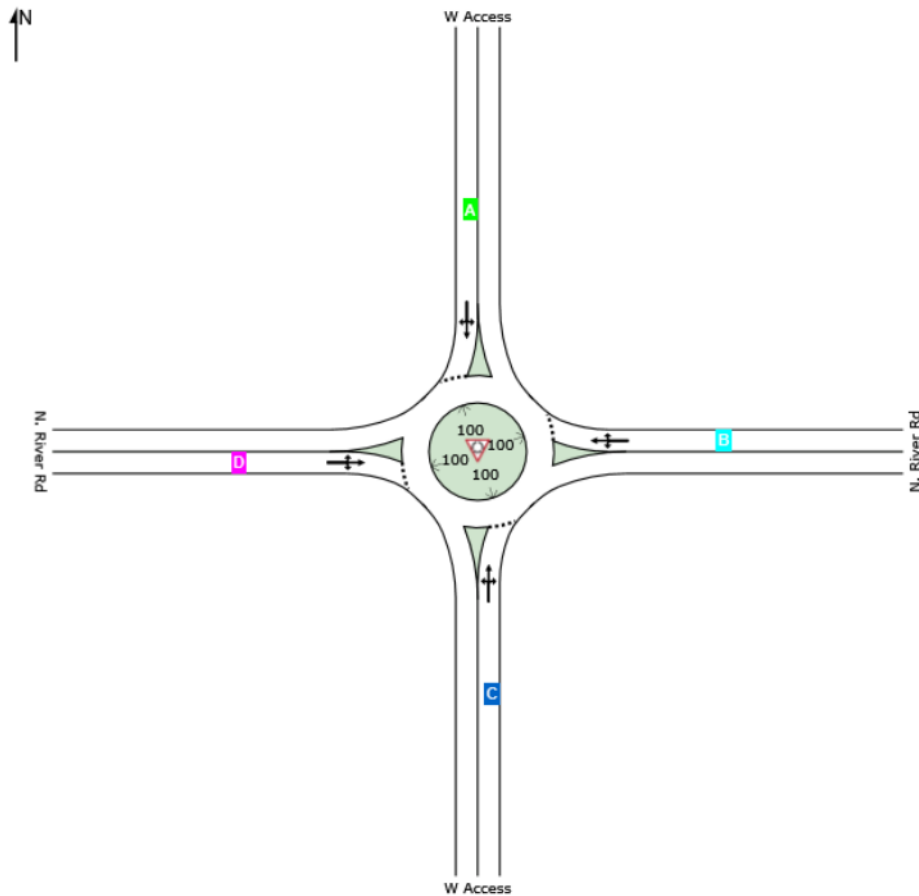
Lane Level of Service

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P PM w/ Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	C	B	A	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

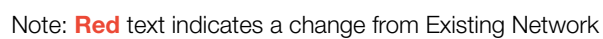
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

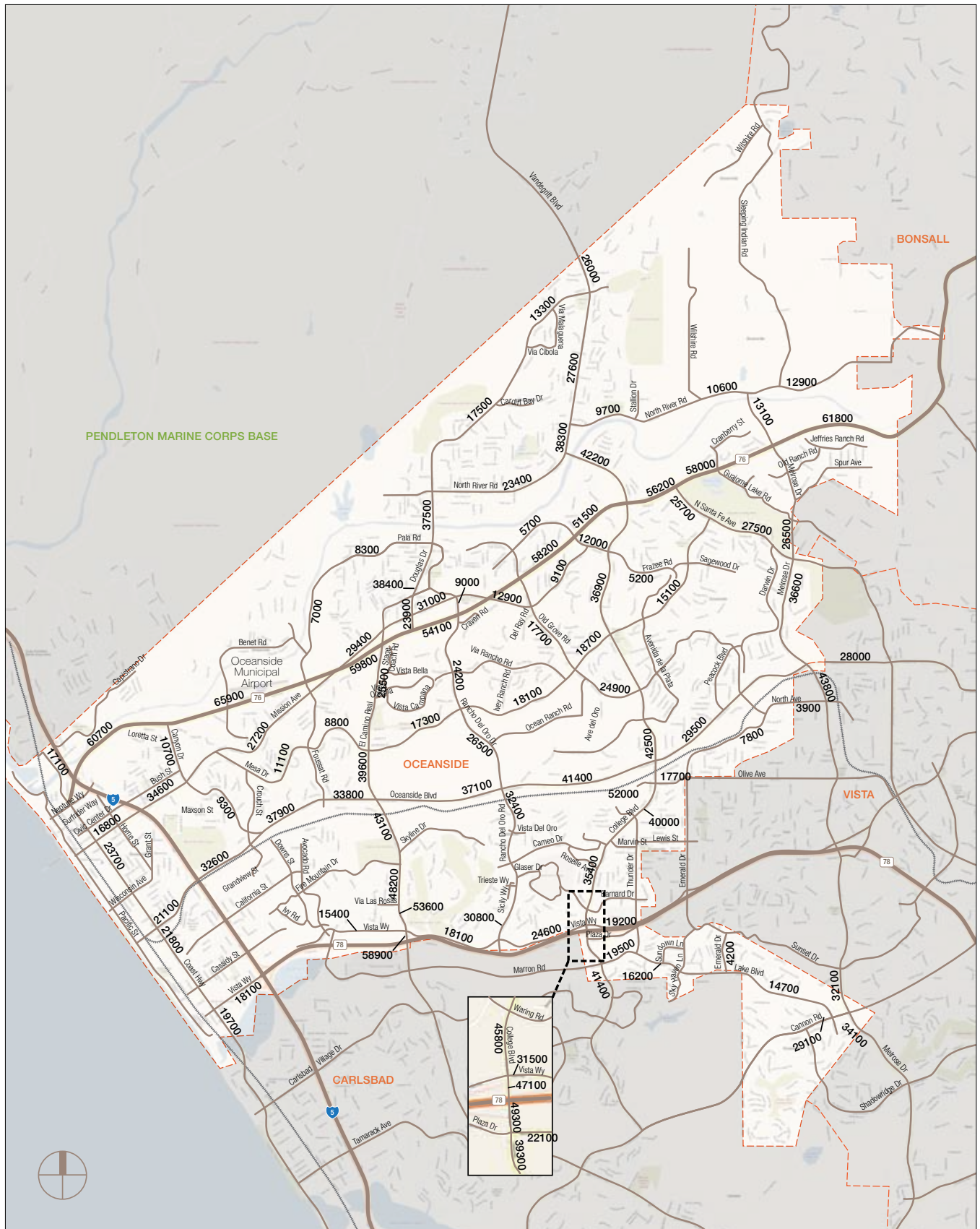
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	61	841	96	64	641	41	50	0	33	20	0	31						
Future Volume (veh/h)	61	841	96	64	641	41	50	0	33	20	0	31						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	66	914	104	70	697	45	54	0	36	22	0	34						
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	121	1513	677	126	1523	681	332	0	173	330	0	173						
Arrive On Green	0.07	0.43	0.43	0.07	0.43	0.43	0.11	0.00	0.11	0.11	0.00	0.11						
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1369	0	1583	1367	0	1583						
Grp Volume(v), veh/h	66	914	104	70	697	45	54	0	36	22	0	34						
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1369	0	1583	1367	0	1583						
Q Serve(g_s), s	1.2	6.9	1.4	1.3	4.8	0.6	1.3	0.0	0.7	0.5	0.0	0.7						
Cycle Q Clear(g_c), s	1.2	6.9	1.4	1.3	4.8	0.6	2.0	0.0	0.7	1.2	0.0	0.7						
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Lane Grp Cap(c), veh/h	121	1513	677	126	1523	681	332	0	173	330	0	173						
V/C Ratio(X)	0.55	0.60	0.15	0.56	0.46	0.07	0.16	0.00	0.21	0.07	0.00	0.20						
Avail Cap(c_a), veh/h	351	2366	1058	284	2232	999	899	0	828	896	0	828						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	15.5	7.6	6.0	15.5	7.0	5.7	14.8	0.0	14.0	14.5	0.0	13.9						
Incr Delay (d2), s/veh	3.8	0.4	0.1	3.8	0.2	0.0	0.2	0.0	0.6	0.1	0.0	0.5						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.7	3.4	0.6	0.8	2.4	0.3	0.5	0.0	0.3	0.2	0.0	0.3						
LnGrp Delay(d),s/veh	19.3	8.0	6.1	19.3	7.2	5.8	15.1	0.0	14.6	14.6	0.0	14.5						
LnGrp LOS	B	A	A	B	A	A	B		B	B		B						
Approach Vol, veh/h	1084				812				90		56							
Approach Delay, s/veh	8.5				8.1				14.9		14.5							
Approach LOS	A				A				B		B							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	6.9	19.2			8.3	6.8	19.3	8.3										
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5	4.5										
Max Green Setting (Gmax), s	5.5	23.0			18.0	6.8	21.7	18.0										
Max Q Clear Time (g_c+I1), s	3.3	8.9			3.2	3.2	6.8	4.0										
Green Ext Time (p_c), s	0.0	5.8			0.1	0.0	4.4	0.2										
Intersection Summary																		
HCM 2010 Ctrl Delay																		
HCM 2010 LOS																		

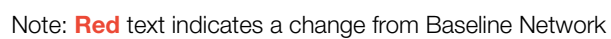
APPENDIX O

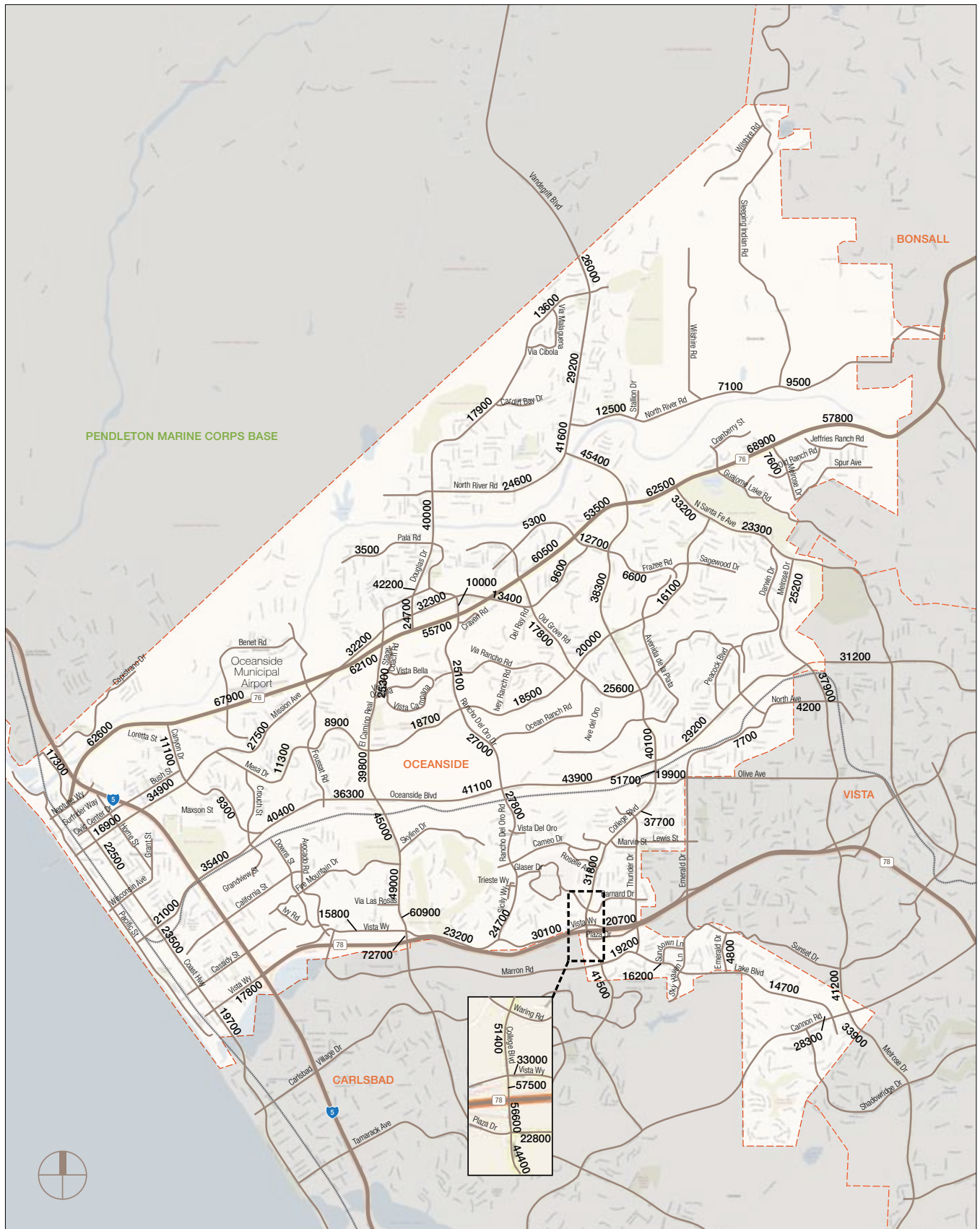
MELROSE DRIVE EXTENSION DOCUMENTATION





Note: Please refer to Table 7-1 for a complete listing of ADT volumes.





Note: Please refer to Table 9-1 for a complete listing of ADT volumes.

APPENDIX P

INTERSECTION ANALYSIS WORKSHEETS – YEAR 2035 WITHOUT PROJECT (WITHOUT MELROSE DRIVE EXTENSION)

Year 2035 AM (No Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	475	30	85	185	105	65	55	1005	65	15	305	35
Future Volume (veh/h)	475	30	85	185	105	65	55	1005	65	15	305	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	516	33	92	201	114	71	60	1092	71	16	332	38
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	90	250	311	220	128	94	1933	599	35	1608	180
Arrive On Green	0.19	0.21	0.21	0.09	0.10	0.10	0.05	0.38	0.38	0.02	0.35	0.35
Sat Flow, veh/h	3442	435	1213	3442	2153	1254	1774	5085	1577	1774	4640	520
Grp Volume(v), veh/h	516	0	125	201	92	93	60	1092	71	16	241	129
Grp Sat Flow(s),veh/h/ln	1721	0	1649	1721	1770	1637	1774	1695	1577	1774	1695	1770
Q Serve(g_s), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.0	1.7	0.5	3.0	3.0
Cycle Q Clear(g_c), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.0	1.7	0.5	3.0	3.0
Prop In Lane	1.00		0.74	1.00		0.77	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	668	0	340	311	181	167	94	1933	599	35	1175	614
V/C Ratio(X)	0.77	0.00	0.37	0.65	0.51	0.55	0.64	0.56	0.12	0.46	0.20	0.21
Avail Cap(c_a), veh/h	959	0	710	523	538	498	210	1933	599	150	1175	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	20.2	26.0	25.2	25.3	27.5	14.5	11.9	28.7	13.6	13.6
Incr Delay (d2), s/veh	2.5	0.0	0.7	2.3	2.2	2.8	7.0	1.2	0.4	9.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.8	1.7	1.5	1.6	1.1	4.9	0.8	0.3	1.4	1.6
LnGrp Delay(d),s/veh	25.1	0.0	20.9	28.3	27.4	28.1	34.5	15.7	12.3	38.0	14.0	14.4
LnGrp LOS	C		C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h	641			386			1223			386		
Approach Delay, s/veh	24.3			28.0			16.4			15.1		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	27.0	9.9	16.7	7.6	25.0	16.0	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	22.5	9.0	25.5	7.0	20.5	16.5	18.0				
Max Q Clear Time (g_c+1), s	2.5	12.0	5.3	5.9	4.0	5.0	10.4	5.2				
Green Ext Time (p_c), s	0.0	5.6	0.2	0.6	0.0	2.0	1.1	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	19.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\13. Year 2035B AM.syn

Year 2035 AM (No Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	45	60	115	690	65	310	95	850	425	160	750	35
Future Volume (veh/h)	45	60	115	690	65	310	95	850	425	160	750	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	65	125	750	71	337	103	924	462	174	815	38
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	326	267	797	104	493	129	1591	491	183	1216	544
Arrive On Green	0.04	0.17	0.17	0.23	0.37	0.37	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1774	1863	1525	3442	281	1334	1774	5085	1570	1774	3539	1583
Grp Volume(v), veh/h	49	65	125	750	0	408	103	924	462	174	815	38
Grp Sat Flow(s),veh/h/ln	1774	1863	1525	1721	0	1615	1774	1695	1570	1774	1770	1583
Q Serve(g_s), s	2.8	3.0	7.5	21.7	0.0	21.6	5.8	15.5	29.1	9.9	19.9	1.6
Cycle Q Clear(g_c), s	2.8	3.0	7.5	21.7	0.0	21.6	5.8	15.5	29.1	9.9	19.9	1.6
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	326	267	797	0	597	129	1591	491	183	1216	544
V/C Ratio(X)	0.75	0.20	0.47	0.94	0.00	0.68	0.80	0.58	0.94	0.95	0.67	0.07
Avail Cap(c_a), veh/h	156	661	541	797	0	805	140	1603	495	183	1216	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	35.8	37.6	38.3	0.0	27.0	46.3	29.3	34.0	45.2	28.4	22.4
Incr Delay (d2), s/veh	15.6	0.3	1.3	19.1	0.0	1.5	25.4	0.5	26.2	51.5	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	3.2	12.4	0.0	9.9	3.7	7.3	16.1	7.5	10.0	0.7
LnGrp Delay(d),s/veh	64.0	36.1	38.9	57.5	0.0	28.5	71.8	29.8	60.2	96.7	29.8	22.5
LnGrp LOS	E	D	D	E		C	E	C	E	F	C	C
Approach Vol, veh/h	239			1158			1489			1027		
Approach Delay, s/veh	43.3			47.2			42.1			40.9		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	36.3	28.0	22.3	11.9	39.4	8.2	42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	32.0	23.5	36.0	8.0	34.5	8.9	50.6				
Max Q Clear Time (g_c+1), s	3.1	23.7	9.5	7.8	21.9	4.8	23.6					
Green Ext Time (p_c), s	0.0	0.7	0.0	0.8	0.0	4.7	0.0	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay	43.4											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
N:\2596\Analysis\Synchro\Long Term\13. Year 2035B AM.syn

Year 2035 AM (No Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↰	↱	↱
Traffic Volume (veh/h)	5	610	5	5	940	10	55	0	10	10	0	25
Future Volume (veh/h)	5	610	5	5	940	10	55	0	10	10	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	5	663	0	5	1022	11	60	0	11	11	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	1447	647	12	1466	16	148	0	130	20	0	50
Arrive On Green	0.01	0.41	0.00	0.01	0.41	0.41	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3586	39	1774	0	1557	473	0	1161
Grp Volume(v), veh/h	5	663	0	5	504	529	60	0	11	38	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1855	1774	0	1557	1634	0	0
Q Serve(g_s), s	0.1	5.4	0.0	0.1	9.3	9.3	1.3	0.0	0.3	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.4	0.0	0.1	9.3	9.3	1.3	0.0	0.3	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	12	1447	647	12	724	759	148	0	130	71	0	0
V/C Ratio(X)	0.42	0.46	0.00	0.42	0.70	0.70	0.41	0.00	0.08	0.54	0.00	0.00
Avail Cap(c_a), veh/h	226	1890	845	226	945	991	812	0	713	748	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.5	8.5	0.0	19.5	9.6	9.6	17.1	0.0	16.6	18.4	0.0	0.0
Incr Delay (d2), s/veh	21.5	0.2	0.0	21.5	1.5	1.5	1.8	0.0	0.3	6.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	2.6	0.0	0.1	4.8	5.0	0.7	0.0	0.1	0.5	0.0	0.0
LnGrp Delay(d), s/veh	40.9	8.7	0.0	40.9	11.1	11.1	18.9	0.0	16.9	24.7	0.0	0.0
LnGrp LOS	D	A		D	B	B	B		B	C		
Approach Vol, veh/h	668			1038			71			38		
Approach Delay, s/veh	8.9			11.2			18.6			24.7		
Approach LOS	A			B			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.6			6.2	4.8	20.6		7.8				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I2), s	7.4			2.9	2.1	11.3		3.3				
Green Ext Time (p_c), s	0.0	3.8		0.1	0.0	4.6		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				11.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection												
Int Delay, s/veh	13.3											
Movement	EBL	EBT	WBT	WBR	SBL	SBR						
Lane Configurations	↰	↱	↰	↱	↰	↱						
Traffic Vol, veh/h	85	490	760	60	80	195						
Future Vol, veh/h	85	490	760	60	80	195						
Conflicting Peds, #/hr	5	0	0	5	0	2						
Sign Control	Free	Free	Free	Free	Stop	Stop						
RT Channelized	-	None	-	None	-	None						
Storage Length	25	-	-	-	0	-						
Veh in Median Storage, #	-	0	0	-	0	-						
Grade, %	-	0	0	-	0	-						
Peak Hour Factor	94	94	94	94	94	94						
Heavy Vehicles, %	2	2	2	2	2	2						
Mvmt Flow	90	521	809	64	85	207						
Major/Minor												
Major1	Major2	Minor2										
Conflicting Flow All	878	0	-	0	1547	848						
Stage 1	-	-	-	-	846	-						
Stage 2	-	-	-	-	701	-						
Critical Hdwy	4.12	-	-	-	6.42	6.22						
Critical Hdwy Stg 1	-	-	-	-	5.42	-						
Critical Hdwy Stg 2	-	-	-	-	5.42	-						
Follow-up Hdwy	2.218	-	-	-	3.518	3.318						
Pot Cap-1 Maneuver	769	-	-	-	126	361						
Stage 1	-	-	-	-	421	-						
Stage 2	-	-	-	-	492	-						
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	765	-	-	-	110	359						
Mov Cap-2 Maneuver	-	-	-	-	226	-						
Stage 1	-	-	-	-	370	-						
Stage 2	-	-	-	-	490	-						
Approach												
EB	WB	SB										
HCM Control Delay, s	1.5	0	77.8									
HCM LOS			F									
Minor Lane/Major Mvmt												
EBL	EBT	WBT	WBR	SBLn1								
Capacity (veh/h)	765	-	-	-	307							
HCM Lane V/C Ratio	0.118	-	-	-	0.953							
HCM Control Delay (s)	10.3	-	-	-	77.8							
HCM Lane LOS	B	-	-	-	F							
HCM 95th %tile Q(veh)	0.4	-	-	-	9.6							

HCM 2010 TWSC
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Year 2035 AM (No Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	565	810	5	5	10
Future Vol, veh/h	5	565	810	5	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	614	880	5	5	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	885	0	0 1504 880
Stage 1	-	-	- 880 -
Stage 2	-	-	- 624 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	765	-	- 134 346
Stage 1	-	-	- 406 -
Stage 2	-	-	- 534 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	765	-	- 133 346
Mov Cap-2 Maneuver	-	-	- 133 -
Stage 1	-	-	- 403 -
Stage 2	-	-	- 534 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	22.2
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	765	-	-	-	226
HCM Lane V/C Ratio	0.007	-	-	-	0.072
HCM Control Delay (s)	9.7	-	-	-	22.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Year 2035 AM (No Melrose)
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	405	650	20	10	50
Future Vol, veh/h	30	405	650	20	10	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	440	707	22	11	54

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	729	0	0 1224 718
Stage 1	-	-	- 718 -
Stage 2	-	-	- 506 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	875	-	- 198 429
Stage 1	-	-	- 483 -
Stage 2	-	-	- 606 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	875	-	- 188 429
Mov Cap-2 Maneuver	-	-	- 188 -
Stage 1	-	-	- 459 -
Stage 2	-	-	- 606 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.4
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	875	-	-	-	188	429
HCM Lane V/C Ratio	0.037	-	-	-	0.058	0.127
HCM Control Delay (s)	9.3	0	-	-	25.3	14.6
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.4

Year 2035 AM (No Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	40	270	350	20	45	190
Future Vol, veh/h	40	270	350	20	45	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	293	380	22	49	207
Major/Minor						
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	402	0	-	0	770	391
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1157	-	-	-	369	658
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1157	-	-	-	353	658
Mov Cap-2 Maneuver	-	-	-	-	353	-
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	692	-
Approach						
Approach	EB	WB	SB			
HCM Control Delay, s	1.1	0	16.5			
HCM LOS			C			
Minor Lane/Major Mvmt						
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1157	-	-	-	565	
HCM Lane V/C Ratio	0.038	-	-	-	0.452	
HCM Control Delay (s)	8.2	0	-	-	16.5	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	2.3	

HCM 2010 TWSC
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Year 2035 AM (No Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	90	75	155	850	1700	165		
Future Volume (veh/h)	90	75	155	850	1700	165		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	98	82	168	924	1848	179		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	162	145	152	2814	2343	1048		
Arrive On Green	0.09	0.09	0.09	0.80	0.66	0.66		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	98	82	168	924	1848	179		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	6.4	6.0	10.3	8.7	44.3	5.2		
Cycle Q Clear(g_c), s	6.4	6.0	10.3	8.7	44.3	5.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	162	145	152	2814	2343	1048		
V/C Ratio(X)	0.60	0.57	1.10	0.33	0.79	0.17		
Avail Cap(c_a), veh/h	488	435	152	2814	2343	1048		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	52.4	52.2	54.8	3.4	14.4	7.7		
Incr Delay (d2), s/veh	3.6	3.4	103.3	0.3	2.8	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	5.3	9.4	4.2	22.2	2.3		
LnGrp Delay(d),s/veh	56.0	55.7	158.1	3.7	17.1	8.1		
LnGrp LOS	E	E	F	A	B	A		
Approach Vol, veh/h	180			1092	2027			
Approach Delay, s/veh	55.9			27.5	16.3			
Approach LOS	E			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		102.9		17.1	16.0	86.9		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		73.4		33.0	* 10	57.4		
Max Q Clear Time (g_c+I1), s		10.7		8.4	12.3	46.3		
Green Ext Time (p_c), s		8.5		0.5	0.0	9.1		
Intersection Summary								
HCM 2010 Ctrl Delay			22.2					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	75	190	1280	30	35	75	515	600	20	965	10
Future Volume (veh/h)	40	75	190	1280	30	35	75	515	600	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1391	33	38	82	560	652	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	526	230	1347	300	346	81	1061	1874	38	988	10
Arrive On Green	0.15	0.15	0.15	0.38	0.38	0.38	0.05	0.30	0.30	0.02	0.28	0.28
Sat Flow, veh/h	1774	3539	1547	3548	791	911	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1391	0	71	82	560	652	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	0	1702	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.1	1.5	33.0	33.0
Cycle Q Clear(g_c), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.1	1.5	33.0	33.0
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	264	526	230	1347	0	646	81	1061	1874	38	487	511
V/C Ratio(X)	0.16	0.16	0.90	1.03	0.00	0.11	1.01	0.53	0.35	0.57	1.06	1.06
Avail Cap(c_a), veh/h	267	532	232	1347	0	646	81	1061	1874	84	487	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	44.4	50.1	37.2	0.0	24.0	57.2	34.9	8.1	58.1	43.4	43.4
Incr Delay (d2), s/veh	0.3	0.1	33.5	33.2	0.0	0.1	101.6	0.5	0.1	12.7	58.0	57.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.2	8.9	28.3	0.0	1.5	5.0	7.8	10.0	0.9	23.8	24.9
LnGrp Delay(d),s/veh	44.8	44.6	83.6	70.4	0.0	24.1	158.8	35.4	8.2	70.8	101.4	100.5
LnGrp LOS	D	D	F	F		C	F	D	A	E	F	F
Approach Vol, veh/h	332			1462			1294			1082		
Approach Delay, s/veh	69.0			68.1			29.5			100.4		
Approach LOS	E			E			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s7.1	40.4			22.3	10.0	37.5		50.0				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 32.8				18.0	5.5	33.0		45.5				
Max Q Clear Time (g_c+I), s 17.8				17.8	7.5	35.0		47.5				
Green Ext Time (p_c), s 0.0	6.0			0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	64.6											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	525	5	10	915	60	5	5	20	95	0	110
Future Volume (veh/h)	50	525	5	10	915	60	5	5	20	95	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	54	571	5	11	995	65	5	5	22	103	0	120
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1461	13	25	1243	81	99	68	514	132	0	526
Arrive On Green	0.05	0.41	0.41	0.01	0.37	0.37	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1774	3594	31	1774	3366	220	0	205	1550	0	0	1583
Grp Volume(v), veh/h	54	281	295	11	523	537	10	0	22	103	0	120
Grp Sat Flow(s),veh/h/ln	1774	1856	1774	1770	1816	205	0	1550	0	0	0	1583
Q Serve(g_s), s	1.6	6.1	6.1	0.3	14.4	14.4	0.0	0.0	0.5	0.0	0.0	3.0
Cycle Q Clear(g_c), s	1.6	6.1	6.1	0.3	14.4	14.4	18.1	0.0	0.5	18.1	0.0	3.0
Prop In Lane	1.00		0.02	1.00		0.12	0.50		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	719	754	25	653	671	167	0	514	132	0	526
V/C Ratio(X)	0.59	0.39	0.39	0.44	0.80	0.80	0.06	0.00	0.04	0.78	0.00	0.23
Avail Cap(c_a), veh/h	166	756	793	166	756	776	167	0	514	132	0	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	11.4	11.4	26.7	15.4	15.4	14.6	0.0	12.3	27.3	0.0	13.2
Incr Delay (d2), s/veh	6.1	0.3	0.3	11.7	5.4	5.3	0.1	0.0	0.0	25.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.0	3.2	0.2	8.0	8.1	0.1	0.0	0.2	2.4	0.0	1.3
LnGrp Delay(d),s/veh	31.4	11.8	11.8	38.4	20.8	20.7	14.8	0.0	12.4	52.5	0.0	13.4
LnGrp LOS	C	B	B	D	C	C	B		B	D		B
Approach Vol, veh/h	630			1071			32			223		
Approach Delay, s/veh	13.4			20.9			13.1			31.5		
Approach LOS	B			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s5.3	26.7			22.6	7.3	24.6		22.6				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 23.3				18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I), s 8.1				20.1	3.6	16.4		20.1				
Green Ext Time (p_c), s 0.0	3.1			0.0	0.0	3.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	19.6											
HCM 2010 LOS	B											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	15	30	5	380	20	900	15	245	560	935	395	25
Future Volume (veh/h)	15	30	5	380	20	900	15	245	560	935	395	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	33	5	413	22	978	16	266	609	1016	429	27
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	90	14	415	22	1448	30	970	815	957	1893	847
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.27	0.27	0.28	0.53	0.53
Sat Flow, veh/h	1774	1573	238	1688	90	2739	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	16	0	38	435	0	978	16	266	609	1016	429	27
Grp Sat Flow(s), veh/h/ln	1774	0	1812	1778	0	1370	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.1	0.0	2.5	30.3	0.0	30.5	1.1	7.3	34.0	34.5	8.0	1.0
Cycle Q Clear(g_c), s	1.1	0.0	2.5	30.3	0.0	30.5	1.1	7.3	34.0	34.5	8.0	1.0
Prop In Lane	1.00		0.13	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	104	437	0	1448	30	970	815	957	1893	847
V/C Ratio(X)	0.16	0.00	0.37	1.00	0.00	0.68	0.53	0.27	0.75	1.06	0.23	0.03
Avail Cap(c_a), veh/h	472	0	482	437	0	1448	80	970	815	957	1893	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	56.3	46.7	0.0	21.9	60.5	35.4	22.5	44.8	15.3	13.7
Incr Delay (d2), s/veh	0.7	0.0	2.2	41.8	0.0	1.3	13.5	0.2	3.8	47.0	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	1.3	19.9	0.0	12.6	0.7	3.6	21.7	22.6	3.9	0.4
LnGrp Delay(d), s/veh	56.4	0.0	58.5	88.5	0.0	23.1	74.0	35.5	26.3	91.8	15.3	13.7
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	54			1413			891			1472		
Approach Delay, s/veh	57.9			43.3			29.9			68.1		
Approach LOS	E			D			C			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	38.5		11.6	6.6	70.9		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0	34.0		33.0	5.6	62.9		30.5				
Max Q Clear Time (g_c+Q), s	36.0	36.0		4.5	3.1	10.0		32.5				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				49.9								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	425	20	55	45	45	0	40	715	20	10	1125	1130
Future Volume (veh/h)	425	20	55	45	45	0	40	715	20	10	1125	1130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	462	22	0	49	49	0	43	777	22	11	1223	1228
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	326	277	67	67	116	73	1648	47	25	1563	1719
Arrive On Green	0.18	0.18	0.00	0.07	0.07	0.00	0.04	0.47	0.47	0.01	0.44	0.44
Sat Flow, veh/h	3442	1863	1583	909	909	1583	1774	3515	100	1774	3539	2787
Grp Volume(v), veh/h	462	22	0	98	0	0	43	391	408	11	1223	1228
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1817	0	1583	1774	1770	1845	1774	1770	1393
Q Serve(g_s), s	8.6	0.7	0.0	3.5	0.0	0.0	1.6	10.1	10.1	0.4	19.7	20.2
Cycle Q Clear(g_c), s	8.6	0.7	0.0	3.5	0.0	0.0	1.6	10.1	10.1	0.4	19.7	20.2
Prop In Lane	1.00		1.00	0.50		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	603	326	277	133	0	116	73	830	865	25	1563	1719
V/C Ratio(X)	0.77	0.07	0.00	0.74	0.00	0.00	0.59	0.47	0.47	0.45	0.78	0.71
Avail Cap(c_a), veh/h	931	504	428	489	0	426	133	830	865	133	1634	1774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	23.0	0.0	30.4	0.0	0.0	31.5	12.1	12.1	32.8	15.9	8.8
Incr Delay (d2), s/veh	2.1	0.1	0.0	7.6	0.0	0.0	7.4	0.4	0.4	12.3	2.4	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	0.3	0.0	2.1	0.0	0.0	0.9	5.0	5.2	0.3	10.0	11.6
LnGrp Delay(d), s/veh	28.4	23.1	0.0	38.0	0.0	0.0	38.9	12.5	12.5	45.1	18.4	10.1
LnGrp LOS	C	C		D			D	B	B	D	B	B
Approach Vol, veh/h	484			98			842			2462		
Approach Delay, s/veh	28.1			38.0			13.9			14.4		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.9	35.9		16.2	7.3	34.1		9.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.9	30.9		18.1	5.0	30.9		18.0				
Max Q Clear Time (g_c+Q), s	12.1	12.1		10.6	3.6	22.2		5.5				
Green Ext Time (p_c), s	0.0	4.9		1.2	0.0	7.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				16.6								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	220	185	150	185	445	65	210	285	130	115	980	510
Future Volume (veh/h)	220	185	150	185	445	65	210	285	130	115	980	510
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	239	201	0	201	484	71	228	310	141	125	1065	554
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	715	320	283	587	86	264	1458	652	158	1247	695
Arrive On Green	0.09	0.20	0.00	0.08	0.19	0.19	0.15	0.41	0.41	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3091	451	1774	3539	1583	1774	3539	1548
Grp Volume(V), veh/h	239	201	0	201	276	279	228	310	141	125	1065	554
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1773	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	5.7	4.0	0.0	4.8	12.6	12.7	10.5	4.7	4.8	5.8	23.4	25.9
Cycle Q Clear(g_c), s	5.7	4.0	0.0	4.8	12.6	12.7	10.5	4.7	4.8	5.8	23.4	25.9
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	715	320	283	336	336	264	1458	652	158	1247	695
V/C Ratio(X)	0.74	0.28	0.00	0.71	0.82	0.83	0.86	0.21	0.22	0.79	0.85	0.80
Avail Cap(c_a), veh/h	472	823	368	410	380	381	264	1458	652	273	1266	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	28.3	0.0	37.5	32.6	32.7	34.9	15.9	15.9	37.4	25.2	20.0
Incr Delay (d2), s/veh	3.4	0.2	0.0	3.3	12.2	12.9	24.4	0.1	0.2	8.5	5.8	6.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.8	2.0	0.0	2.4	7.3	7.4	6.9	2.3	2.1	3.2	12.4	12.2
LnGrp Delay(d), s/veh	40.3	28.5	0.0	40.8	44.9	45.6	59.3	16.0	16.1	45.9	31.0	26.3
LnGrp LOS	D	C		D	D	D	E	B	B	D	C	C
Approach Vol, veh/h	440				756			679		1744		
Approach Delay, s/veh	34.9				44.0			30.5		30.6		
Approach LOS	C				D			C		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.0	11.4	21.4	17.0	34.1	12.4	20.4					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	29.6	10.0	19.5	12.5	30.0	11.5	18.0					
Max Q Clear Time (g_c+I), s	6.8	6.8	6.0	12.5	27.9	7.7	14.7					
Green Ext Time (p_c), s	0.1	2.5	0.2	0.9	0.0	1.7	0.3	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay					33.9							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	295	65	50	545	285	130	360	5	440	800	70
Future Volume (veh/h)	50	295	65	50	545	285	130	360	5	440	800	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	54	321	71	54	592	310	141	391	5	478	870	76
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1077	482	75	680	356	175	529	7	522	1132	99
Arrive On Green	0.04	0.30	0.30	0.04	0.30	0.30	0.10	0.15	0.15	0.29	0.34	0.34
Sat Flow, veh/h	3442	3539	1582	1774	2235	1170	1774	3577	46	1774	3294	288
Grp Volume(V), veh/h	54	321	71	54	469	433	141	193	203	478	467	479
Grp Sat Flow(s), veh/h/ln	1721	1770	1582	1774	1770	1635	1774	1770	1853	1774	1770	1812
Q Serve(g_s), s	1.3	5.9	2.8	2.6	21.4	21.4	6.6	8.9	8.9	22.2	20.1	20.1
Cycle Q Clear(g_c), s	1.3	5.9	2.8	2.6	21.4	21.4	6.6	8.9	8.9	22.2	20.1	20.1
Prop In Lane	1.00		1.00	1.00		0.72	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	146	1077	482	75	539	498	175	262	274	522	608	623
V/C Ratio(X)	0.37	0.30	0.15	0.72	0.87	0.87	0.80	0.74	0.74	0.92	0.77	0.77
Avail Cap(c_a), veh/h	202	1077	482	177	591	546	243	373	391	634	763	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	22.7	21.6	40.4	28.1	28.1	37.6	34.8	34.8	29.1	25.0	25.0
Incr Delay (d2), s/veh	1.6	0.2	0.1	12.1	12.5	13.4	12.6	4.5	4.4	16.1	3.7	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	2.9	1.2	1.5	12.3	11.5	3.9	4.7	4.9	13.2	10.4	10.6
LnGrp Delay(d), s/veh	41.3	22.9	21.8	52.5	40.6	41.5	50.3	39.3	39.2	45.2	28.7	28.6
LnGrp LOS	D	C	C	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h	446				956			537		1424		
Approach Delay, s/veh	24.9				41.7			42.1		34.2		
Approach LOS	C				D			D		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.5	12.9	33.8	8.1	30.5	29.6	17.1					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.0	11.7	36.8	5.0	28.5	30.5	18.0					
Max Q Clear Time (g_c+I), s	7.9	8.6	22.1	3.3	23.4	24.2	10.9					
Green Ext Time (p_c), s	0.0	2.1	0.1	5.4	0.0	2.6	0.9	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay					36.4							
HCM 2010 LOS					D							

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	1075	0	0	1935	215	0	0	0	275	0	575
Future Volume (veh/h)	290	1075	0	0	1935	215	0	0	0	275	0	575
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	315	1168	0	0	2103	234	0	0	0	299	0	625
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(V), veh/h	315	1168	0	0	2103	234	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	3.9	0.0	0.0	85.8	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	3.9	0.0	0.0	85.8	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.10	0.35	0.00	0.00	0.71	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	40.9	16.3	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	83.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	1.9	0.0	0.0	42.2	7.9	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	156.4	0.6	0.0	0.0	41.1	16.4	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1483			2337			0					
Approach Delay, s/veh	33.7			38.6			0.0					
Approach LOS	C			D								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	160.0				19.0	141.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	74.9				* 13	55.9		44.0				
Max Q Clear Time (g_c+I), s	5.9				15.3	87.8		0.0				
Green Ext Time (p_c), s	10.0				0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				36.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	950	360	340	1730	140	325	305	350	65	365	95
Future Volume (veh/h)	40	950	360	340	1730	140	325	305	350	65	365	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	1033	391	370	1880	152	353	332	380	71	397	103
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1332	596	225	1461	654	286	470	420	247	709	182
Arrive On Green	0.18	0.75	0.75	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2790	716
Grp Volume(V), veh/h	43	1033	391	370	1880	152	353	332	380	71	250	250
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1736
Q Serve(g_s), s	3.3	27.7	19.3	20.3	66.0	10.0	13.3	27.1	37.1	3.1	19.7	20.0
Cycle Q Clear(g_c), s	3.3	27.7	19.3	20.3	66.0	10.0	13.3	27.1	37.1	3.1	19.7	20.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.41
Lane Grp Cap(c), veh/h	161	1332	596	225	1461	654	286	470	420	247	450	441
V/C Ratio(X)	0.27	0.78	0.66	1.64	1.29	0.23	1.23	0.71	0.90	0.29	0.56	0.57
Avail Cap(c_a), veh/h	188	1332	596	225	1461	654	286	545	488	258	531	521
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	15.7	14.7	69.9	47.0	30.5	73.3	53.1	56.8	70.4	51.8	52.0
Incr Delay (d2), s/veh	0.7	3.3	4.1	291.6	129.5	0.1	131.8	3.5	18.5	0.6	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	13.8	8.9	28.2	58.6	4.4	11.6	13.7	18.4	1.5	9.7	9.8
LnGrp Delay(d),s/veh	61.6	19.1	18.8	361.4	176.5	30.6	205.1	56.6	75.3	71.0	52.9	53.1
LnGrp LOS	E	B	B	F	F	C	F	E	E	E	D	D
Approach Vol, veh/h	1467			2402			1065				571	
Approach Delay, s/veh	20.3			195.8			112.5				55.3	
Approach LOS	C			F			F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	68.2	19.0	46.8	20.2	74.0	17.2	48.6				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	20.3	52.9	* 13	48.0	* 17	56.2	* 12	49.3				
Max Q Clear Time (g_c+I), s	29.7	15.3	22.0	5.3	68.0	5.1	39.1					
Green Ext Time (p_c), s	0.0	8.6	0.0	3.2	0.0	0.0	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay				118.3								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	175	940	250	200	1665	15	210	190	180	35	320	335
Future Volume (veh/h)	175	940	250	200	1665	15	210	190	180	35	320	335
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	190	1022	272	217	1810	16	228	207	196	38	348	364
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1321	583	238	1480	13	280	473	409	118	446	393
Arrive On Green	0.10	0.37	0.37	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1562	1774	3595	32	3442	1770	1531	1774	1770	1560
Grp Volume(v), veh/h	190	1022	272	217	890	936	228	207	196	38	348	364
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1531	1774	1770	1560
Q Serve(g_s), s	15.3	40.7	21.1	19.3	65.9	65.9	10.4	15.5	17.2	3.3	29.3	36.4
Cycle Q Clear(g_c), s	15.3	40.7	21.1	19.3	65.9	65.9	10.4	15.5	17.2	3.3	29.3	36.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1321	583	238	728	764	280	473	409	118	446	393
V/C Ratio(X)	1.12	0.77	0.47	0.91	1.22	1.22	0.82	0.44	0.48	0.32	0.78	0.93
Avail Cap(c_a), veh/h	170	1321	583	264	728	764	299	487	421	144	477	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.30	0.30	0.30	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	44.2	38.1	68.3	47.1	47.1	72.3	48.7	49.3	71.3	55.7	58.4
Incr Delay (d2), s/veh	81.7	1.9	1.1	12.9	103.7	104.8	15.1	0.6	0.9	1.6	7.7	25.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	11.3	20.2	9.3	10.3	53.2	56.0	5.6	7.7	7.4	1.7	15.3	18.5
LnGrp Delay(d), s/veh	154.0	46.1	39.2	81.2	150.8	151.9	87.4	49.3	50.1	72.9	63.4	83.8
LnGrp LOS	F	D	D	F	F	F	F	D	D	E	E	F
Approach Vol, veh/h	1484			2043			631			750		
Approach Delay, s/veh	58.7			143.9			63.3			73.8		
Approach LOS	E			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.2	67.7	18.7	46.4	21.0	73.9	16.3	48.8				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	53.7	* 14	43.1	* 15	62.2	* 13	44.0					
Max Q Clear Time (g_c+Q), s	42.7	12.4	38.4	17.3	67.9	5.3	19.2					
Green Ext Time (p_c), s	0.1	5.4	0.1	1.9	0.0	0.0	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				97.1								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	1025	80	75	1695	60	75	85	130	75	140	70
Future Volume (veh/h)	50	1025	80	75	1695	60	75	85	130	75	140	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1114	87	82	1842	65	82	92	141	82	152	76
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	2028	1032	130	2046	1031	272	216	183	251	204	280
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	54	1114	87	82	1842	65	82	92	141	82	152	76
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.7	31.4	3.2	7.2	73.3	2.4	3.6	7.4	13.8	3.6	12.7	6.7
Cycle Q Clear(g_c), s	4.7	31.4	3.2	7.2	73.3	2.4	3.6	7.4	13.8	3.6	12.7	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	2028	1032	130	2046	1031	272	216	183	251	204	280
V/C Ratio(X)	0.45	0.55	0.08	0.63	0.90	0.06	0.30	0.43	0.77	0.33	0.74	0.27
Avail Cap(c_a), veh/h	133	2028	1032	165	2046	1031	280	512	435	258	501	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	21.3	10.2	72.1	29.7	10.2	69.5	65.8	68.7	70.4	69.0	56.8
Incr Delay (d2), s/veh	1.6	0.7	0.1	5.0	6.9	0.1	0.6	1.3	6.6	0.7	5.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.3	15.5	1.4	3.7	37.5	1.1	1.7	3.9	6.4	1.7	6.8	2.9
LnGrp Delay(d), s/veh	73.2	21.9	10.3	77.1	36.6	10.3	70.1	67.1	75.3	71.2	74.3	57.3
LnGrp LOS	E	C	B	E	D	B	E	E	E	E	E	E
Approach Vol, veh/h	1255			1989			315			310		
Approach Delay, s/veh	23.3			37.4			71.6			69.3		
Approach LOS	C			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.4	99.7	18.4	24.6	16.6	100.5	17.4	25.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	62.7	* 13	43.0	* 12	65.6	* 12	44.0					
Max Q Clear Time (g_c+Q), s	33.4	5.6	14.7	6.7	75.3	5.6	15.8					
Green Ext Time (p_c), s	0.1	8.6	0.1	1.1	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				38.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	475	900	45	625	1565	600	60	505	225	670	800	345
Future Volume (veh/h)	475	900	45	625	1565	600	60	505	225	670	800	345
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	516	978	49	679	1701	652	65	549	245	728	870	375
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	1164	470	669	1539	740	244	589	262	566	1211	731
Arrive On Green	0.12	0.23	0.23	0.19	0.30	0.30	0.07	0.25	0.25	0.16	0.34	0.34
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2372	1055	3442	3539	1579
Grp Volume(v), veh/h	516	978	49	679	1701	652	65	409	385	728	870	375
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1658	1721	1770	1579
Q Serve(g_s), s	19.3	29.4	3.6	31.1	48.4	48.4	2.9	36.2	36.3	26.3	34.3	26.8
Cycle Q Clear(g_c), s	19.3	29.4	3.6	31.1	48.4	48.4	2.9	36.2	36.3	26.3	34.3	26.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	415	1164	470	669	1539	740	244	440	412	566	1211	731
V/C Ratio(X)	1.24	0.84	0.10	1.01	1.10	0.88	0.27	0.93	0.93	1.29	0.72	0.51
Avail Cap(c_a), veh/h	415	1164	470	669	1539	740	258	453	425	566	1223	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	58.9	40.5	64.4	55.8	38.6	70.4	58.8	58.8	66.8	45.9	30.3
Incr Delay (d2), s/veh	128.2	7.4	0.4	38.6	57.4	14.3	0.6	25.5	27.4	142.1	2.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	16.6	14.6	1.6	18.4	30.8	28.9	1.4	20.9	19.8	23.7	17.1	11.8
LnGrp Delay(d), s/veh	198.6	66.2	40.9	103.0	113.2	52.9	71.0	84.3	86.2	208.9	48.0	30.9
LnGrp LOS	F	E	D	F	F	D	E	F	F	F	D	C
Approach Vol, veh/h	1543			3032			859			1973		
Approach Delay, s/veh	109.7			97.9			84.2			104.1		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.8	44.6	17.0	61.5	25.0	56.4	32.0	46.6				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	35.4	* 12	55.3	* 19	47.2	* 26	41.0					
Max Q Clear Time (g_c+Q), s	31.4	4.9	36.3	21.3	50.4	28.3	38.3					
Green Ext Time (p_c), s	0.0	2.2	0.1	7.5	0.0	0.0	0.0	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				100.4								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	10	1165	670	875	2190	25	625	5	745	5	30	25
Future Volume (veh/h)	10	1165	670	875	2190	25	625	5	745	5	30	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1266	728	951	2380	27	683	0	810	5	33	27
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1183	934	609	1737	20	909	0	685	126	67	55
Arrive On Green	0.03	0.33	0.33	0.18	0.48	0.48	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1580	3442	3585	41	3548	0	1580	1774	949	777
Grp Volume(v), veh/h	11	1266	728	951	1173	1234	683	0	810	5	0	60
Grp Sat Flow(s), veh/h/ln	1774	1770	1580	1721	1770	1856	1774	0	1580	1774	0	1726
Q Serve(g_s), s	1.0	53.5	53.5	28.3	77.5	77.5	28.4	0.0	41.0	0.4	0.0	5.4
Cycle Q Clear(g_c), s	1.0	53.5	53.5	28.3	77.5	77.5	28.4	0.0	41.0	0.4	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	47	1183	934	609	857	899	909	0	685	126	0	122
V/C Ratio(X)	0.23	1.07	0.78	1.56	1.37	1.37	0.75	0.00	1.18	0.04	0.00	0.49
Avail Cap(c_a), veh/h	122	1183	934	609	857	899	909	0	685	133	0	129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.3	53.3	24.4	65.8	41.2	41.2	54.8	0.0	45.4	69.3	0.0	71.6
Incr Delay (d2), s/veh	2.5	47.2	6.4	261.0	173.0	175.0	3.5	0.0	96.7	0.1	0.0	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	33.9	33.8	35.5	79.1	83.4	14.4	0.0	48.6	0.2	0.0	2.7
LnGrp Delay(d), s/veh	78.8	100.5	30.8	326.8	214.2	216.2	58.3	0.0	142.1	69.4	0.0	74.6
LnGrp LOS	E	F	C	F	F	F	E		F	E		E
Approach Vol, veh/h	2005			3358			1493			65		
Approach Delay, s/veh	75.1			246.8			103.8			74.2		
Approach LOS	E			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	61.5		17.4	10.0	85.5		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	28	52.8		12.0	* 11	70.1		41.0				
Max Q Clear Time (g_c+Q), s	30.3	55.5		7.4	3.0	79.5		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				164.6								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	595	860	275	75	1950	255	305	100	115	120	55	385
Future Volume (veh/h)	595	860	275	75	1950	255	305	100	115	120	55	385
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	647	935	299	82	2120	277	332	109	125	130	60	418
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	2142	798	272	1867	701	286	922	535	279	915	616
Arrive On Green	0.13	0.42	0.42	0.08	0.37	0.37	0.08	0.26	0.26	0.08	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1572	3442	3539	1569
Grp Volume(v), veh/h	647	935	299	82	2120	277	332	109	125	130	60	418
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1572	1721	1770	1569
Q Serve(g_s), s	21.3	20.9	18.5	3.6	58.7	19.1	13.3	3.8	9.1	5.8	2.0	35.4
Cycle Q Clear(g_c), s	21.3	20.9	18.5	3.6	58.7	19.1	13.3	3.8	9.1	5.8	2.0	35.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	458	2142	798	272	1867	701	286	922	535	279	915	616
V/C Ratio(X)	1.41	0.44	0.37	0.30	1.14	0.40	1.16	0.12	0.23	0.47	0.07	0.68
Avail Cap(c_a), veh/h	458	2142	798	282	1867	701	286	1084	607	280	1077	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.3	32.8	24.2	69.5	50.6	29.6	73.3	45.1	37.9	70.2	44.7	40.4
Incr Delay (d2), s/veh	198.1	0.6	1.3	0.6	68.2	1.7	103.9	0.1	0.2	1.2	0.0	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	22.7	9.9	8.4	1.7	39.3	8.5	10.4	1.9	4.0	2.8	1.0	15.6
LnGrp Delay(d), s/veh	267.4	33.5	25.6	70.1	118.8	31.3	177.2	45.2	38.1	71.4	44.8	42.7
LnGrp LOS	F	C	C	E	F	C	F	D	D	E	D	D
Approach Vol, veh/h	1881			2479			566			608		
Approach Delay, s/veh	112.7			107.4			121.1			49.0		
Approach LOS	F			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	74.9	19.0	47.8	27.0	66.2	18.7	48.1					
Change Period (Y+Rc), s	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4					
Max Green Setting (Gmax), s	59.6	* 13	48.7	* 21	51.4	* 13	49.0					
Max Q Clear Time (g_c+I), s	22.9	15.3	37.4	23.3	60.7	7.8	11.1					
Green Ext Time (p_c), s	0.1	9.6	0.0	1.5	0.0	0.0	0.2	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				104.2								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	45	730	265	630	1460	10	435	15	350	5	80	100
Future Volume (veh/h)	45	730	265	630	1460	10	435	15	350	5	80	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	793	288	685	1587	11	484	0	380	5	87	109
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1482	461	688	2173	15	529	0	553	10	175	158
Arrive On Green	0.07	0.29	0.29	0.20	0.42	0.42	0.15	0.00	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5210	36	3548	0	1583	101	1757	1583
Grp Volume(v), veh/h	49	793	288	685	1033	565	484	0	380	92	0	109
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1856	1774	0	1583	1858	0	1583
Q Serve(g_s), s	2.6	13.1	15.8	19.9	25.5	25.5	13.4	0.0	14.9	4.7	0.0	6.7
Cycle Q Clear(g_c), s	2.6	13.1	15.8	19.9	25.5	25.5	13.4	0.0	14.9	4.7	0.0	6.7
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.02	1.00	1.00	1.00	0.05	1.00	1.00
Lane Grp Cap(c), veh/h	132	1482	461	688	1414	774	529	0	553	185	0	158
V/C Ratio(X)	0.37	0.54	0.62	1.00	0.73	0.73	0.92	0.00	0.69	0.50	0.00	0.69
Avail Cap(c_a), veh/h	177	1482	461	688	1414	774	529	0	553	186	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	29.7	30.7	40.0	24.4	24.4	41.9	0.0	27.9	42.6	0.0	43.5
Incr Delay (d2), s/veh	1.7	1.4	6.3	33.0	3.4	6.0	20.7	0.0	3.6	2.1	0.0	12.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	1.4	6.3	7.7	12.6	12.6	14.3	8.1	0.0	9.5	2.5	0.0	3.4
LnGrp Delay(d), s/veh	45.8	31.1	36.9	73.0	27.8	30.4	62.6	0.0	31.5	44.7	0.0	55.5
LnGrp LOS	D	C	D	E	C	C	E		C	D		E
Approach Vol, veh/h	1130			2283			864			201		
Approach Delay, s/veh	33.3			42.0			48.9			50.6		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.7	36.6		16.4	13.1	49.2		21.3				
Change Period (Y+Rc), s	7.5			6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.1			10.0	* 10	39.1		14.9				
Max Q Clear Time (g_c+I), s	17.8			8.7	4.6	27.5		16.9				
Green Ext Time (p_c), s	0.0	5.0		0.1	0.0	7.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				41.5								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 AM (No Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	80	65	135	60	85	40	70	570	15	35	1080	110
Future Volume (veh/h)	80	65	135	60	85	40	70	570	15	35	1080	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	79	82	147	65	92	43	76	620	16	38	1174	120
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	253	210	160	168	140	105	1571	702	69	1499	661
Arrive On Green	0.14	0.14	0.14	0.09	0.09	0.09	0.06	0.44	0.44	0.04	0.42	0.42
Sat Flow, veh/h	1774	1863	1548	1774	1863	1550	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	79	82	147	65	92	43	76	620	16	38	1174	120
Grp Sat Flow(s), veh/h/ln	1774	1863	1548	1774	1863	1550	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.5	2.5	5.6	2.1	2.9	1.6	2.6	7.3	0.4	1.3	17.7	3.0
Cycle Q Clear(g_c), s	2.5	2.5	5.6	2.1	2.9	1.6	2.6	7.3	0.4	1.3	17.7	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	253	210	160	168	140	105	1571	702	69	1499	661
V/C Ratio(X)	0.33	0.32	0.70	0.41	0.55	0.31	0.73	0.39	0.02	0.55	0.78	0.18
Avail Cap(c_a), veh/h	517	543	451	517	543	452	144	1707	763	178	1775	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	24.1	25.5	26.6	26.9	26.3	28.6	11.6	9.7	29.2	15.4	11.1
Incr Delay (d2), s/veh	0.8	0.7	4.2	1.7	2.8	1.2	11.0	0.2	0.0	6.8	2.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	1.3	2.6	1.1	1.6	0.7	1.6	3.6	0.2	0.8	8.9	1.3
LnGrp Delay(d), s/veh	24.9	24.9	29.6	28.2	29.7	27.5	39.6	11.7	9.7	35.9	17.3	11.2
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h	308				200			712		1332		
Approach Delay, s/veh	27.2				28.7			14.7		17.3		
Approach LOS	C				C			B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	31.9		12.9	8.1	30.7		10.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.8			18.0	5.0	31.0		18.0				
Max Q Clear Time (g_c+I), s	9.3			7.6	4.6	19.7		4.9				
Green Ext Time (p_c), s	0.0	4.3		0.8	0.0	6.5		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				18.7								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	140	90	60	100	65	15	105	385	105	60	905	360
Future Volume (veh/h)	140	90	60	100	65	15	105	385	105	60	905	360
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	98	65	109	71	16	114	418	114	65	984	391
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	139	92	212	363	79	147	2565	799	90	1682	668
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.50	0.50	0.05	0.47	0.47
Sat Flow, veh/h	3442	1043	692	3442	2886	630	1774	5085	1583	1774	3564	1416
Grp Volume(v), veh/h	152	0	163	109	43	44	114	418	114	65	936	439
Grp Sat Flow(s), veh/h/ln	1721	0	1735	1721	1770	1746	1774	1695	1583	1774	1695	1589
Q Serve(g_s), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.2	2.8	2.6	14.5	14.5
Cycle Q Clear(g_c), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.2	2.8	2.6	14.5	14.5
Prop In Lane	1.00		0.40	1.00		0.36	1.00		1.00	1.00		0.89
Lane Grp Cap(c), veh/h	238	0	232	212	223	220	147	2565	799	90	1600	750
V/C Ratio(X)	0.64	0.00	0.70	0.51	0.19	0.20	0.77	0.16	0.14	0.73	0.59	0.59
Avail Cap(c_a), veh/h	406	0	475	330	445	439	311	2565	799	224	1600	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	29.8	32.7	28.2	28.2	32.3	9.6	9.5	33.7	13.9	13.9
Incr Delay (d2), s/veh	2.8	0.0	3.9	1.9	0.4	0.4	8.4	0.1	0.4	10.5	1.6	3.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	3.3	1.1	0.8	0.8	2.6	1.5	1.3	1.5	7.1	7.0
LnGrp Delay(d), s/veh	35.5	0.0	33.7	34.6	28.6	28.7	40.7	9.8	9.9	44.2	15.4	17.2
LnGrp LOS	D		C	C	C	C	D	A	A	D	B	B
Approach Vol, veh/h		315			196			646			1440	
Approach Delay, s/veh		34.6			32.0			15.3			17.3	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	40.8	8.9	14.1	10.5	38.5	9.5	13.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.1	36.3	6.9	19.7	12.6	32.8	8.5	18.1				
Max Q Clear Time (g_c+I), s	4.6	5.2	4.2	8.5	6.5	16.5	5.1	3.6				
Green Ext Time (p_c), s	0.0	3.4	0.1	0.6	0.1	8.9	0.1	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					20.0							
HCM 2010 LOS					B							
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	95	110	115	515	165	105	235	770	780	330	1045	65
Future Volume (veh/h)	95	110	115	515	165	105	235	770	780	330	1045	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	120	125	560	179	114	255	837	848	359	1136	71
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	346	280	552	290	185	276	1592	487	354	1263	553
Arrive On Green	0.07	0.19	0.19	0.16	0.27	0.27	0.16	0.31	0.31	0.20	0.36	0.36
Sat Flow, veh/h	1774	1863	1507	3442	1056	673	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	103	120	125	560	0	293	255	837	848	359	1136	71
Grp Sat Flow(s), veh/h/ln	1774	1863	1507	1721	0	1729	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	7.3	7.2	9.4	20.5	0.0	18.9	18.1	17.3	40.0	25.5	38.8	3.9
Cycle Q Clear(g_c), s	7.3	7.2	9.4	20.5	0.0	18.9	18.1	17.3	40.0	25.5	38.8	3.9
Prop In Lane	1.00		1.00	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	346	280	552	0	475	276	1592	487	354	1263	553
V/C Ratio(X)	0.81	0.35	0.45	1.01	0.00	0.62	0.92	0.53	1.74	1.01	0.90	0.13
Avail Cap(c_a), veh/h	217	525	425	552	0	553	276	1592	487	354	1263	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	45.3	46.2	53.6	0.0	40.5	53.2	36.1	43.9	51.1	38.9	27.7
Incr Delay (d2), s/veh	11.4	0.6	1.1	41.8	0.0	1.6	34.4	0.3	341.8	51.3	8.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	3.8	4.0	12.9	0.0	9.2	11.5	8.1	63.4	17.4	20.5	1.7
LnGrp Delay(d), s/veh	69.8	45.8	47.3	95.4	0.0	42.1	87.5	36.4	385.6	102.5	47.8	27.8
LnGrp LOS	E	D	D	F		D	F	D	F	F	D	C
Approach Vol, veh/h	348				853			1940			1566	
Approach Delay, s/veh	53.5				77.1			195.8			59.5	
Approach LOS	D				E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	44.5	25.0	28.2	24.4	50.1	13.7	39.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	40.0	20.5	36.0	19.9	45.6	15.6	40.9					
Max Q Clear Time (g_c+Q), s	42.0	22.5	11.4	20.1	40.8	9.3	20.9					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	3.1	0.1	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay				118.4								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	15	1125	10	10	690	10	40	0	15	5	0	25
Future Volume (veh/h)	15	1125	10	10	690	10	40	0	15	5	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	1223	0	11	750	11	43	0	16	5	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1565	700	25	1557	23	143	0	122	9	0	50
Arrive On Green	0.02	0.44	0.00	0.01	0.44	0.44	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3569	52	1774	0	1522	252	0	1359
Grp Volume(v), veh/h	16	1223	0	11	372	389	43	0	16	32	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1852	1774	0	1522	1610	0	0
Q Serve(g_s), s	0.4	12.4	0.0	0.3	6.3	6.3	1.0	0.0	0.4	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.4	12.4	0.0	0.3	6.3	6.3	1.0	0.0	0.4	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.16		0.84
Lane Grp Cap(c), veh/h	36	1565	700	25	772	808	143	0	122	60	0	0
V/C Ratio(X)	0.45	0.78	0.00	0.43	0.48	0.48	0.30	0.00	0.13	0.54	0.00	0.00
Avail Cap(c_a), veh/h	210	1759	787	210	879	920	756	0	648	686	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.5	10.0	0.0	20.7	8.5	8.5	18.3	0.0	18.1	20.0	0.0	0.0
Incr Delay (d2), s/veh	8.4	2.1	0.0	11.2	0.5	0.4	1.2	0.0	0.5	7.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	6.4	0.0	0.2	3.1	3.2	0.5	0.0	0.2	0.5	0.0	0.0
LnGrp Delay(d), s/veh	28.9	12.1	0.0	31.8	9.0	8.9	19.5	0.0	18.5	27.3	0.0	0.0
LnGrp LOS	C	B		C	A	A	B		B	C		
Approach Vol, veh/h	1239				772			59			32	
Approach Delay, s/veh	12.4				9.3			19.2			27.3	
Approach LOS	B				A			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.2			6.1	5.4	22.9		7.9				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q), s	14.4			2.8	2.4	8.3		3.0				
Green Ext Time (p_c), s	0.0	4.2		0.1	0.0	3.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				11.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	22.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	875	590	70	70	120
Future Vol, veh/h	165	875	590	70	70	120
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	931	628	74	74	128
Major/Minor						
	Major1	Major2		Minor2		
Conflicting Flow All	703	0	-	0	1949	666
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	1283	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	895	-	-	-	~ 71	459
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	260	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	894	-	-	-	~ 57	459
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	260	-
Approach						
	EB	WB		SB		
HCM Control Delay, s	1.6	0		217.8		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	894	-	-	-	-	159
HCM Lane V/C Ratio	0.196	-	-	-	-	1.271
HCM Control Delay (s)	10	-	-	-	-	217.8
HCM Lane LOS	B	-	-	-	-	F
HCM 95th %tile Q(veh)	0.7	-	-	-	-	11.8
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Year 2035 PM (No Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	935	650	5	0	5
Future Vol, veh/h	10	935	650	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	1016	707	5	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	712	0	-	0	1745	707
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	1038	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	888	-	-	-	95	435
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	341	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	888	-	-	-	94	435
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	341	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		13.4		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	888	-	-	-	435	
HCM Lane V/C Ratio	0.012	-	-	-	0.012	
HCM Control Delay (s)	9.1	-	-	-	13.4	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Year 2035 PM (No Melrose)
6: N. River Rd & Wilshire Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	30	695	450	15	20	80
Future Vol, veh/h	30	695	450	15	20	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	755	489	16	22	87

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	505	0	0	1318	497
Stage 1	-	-	-	497	-
Stage 2	-	-	-	821	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1060	-	-	173	573
Stage 1	-	-	-	611	-
Stage 2	-	-	-	432	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1060	-	-	164	573
Mov Cap-2 Maneuver	-	-	-	164	-
Stage 1	-	-	-	578	-
Stage 2	-	-	-	432	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1060	-	-	-	164	573
HCM Lane V/C Ratio	0.031	-	-	-	0.133	0.152
HCM Control Delay (s)	8.5	0	-	-	30.3	12.4
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.5

Year 2035 PM (No Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	155	410	220	20	25	100
Future Vol, veh/h	155	410	220	20	25	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	446	239	22	27	109

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	261	0	0	1032	250
Stage 1	-	-	-	250	-
Stage 2	-	-	-	782	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1303	-	-	258	789
Stage 1	-	-	-	792	-
Stage 2	-	-	-	451	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1303	-	-	214	789
Mov Cap-2 Maneuver	-	-	-	214	-
Stage 1	-	-	-	657	-
Stage 2	-	-	-	451	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1303	-	-	-	513
HCM Lane V/C Ratio	0.129	-	-	-	0.265
HCM Control Delay (s)	8.2	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.1

Year 2035 PM (No Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	170	200	75	1870	1175	110		
Future Volume (veh/h)	170	200	75	1870	1175	110		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	185	217	82	2033	1277	120		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	287	256	133	2529	2079	930		
Arrive On Green	0.16	0.16	0.08	0.71	0.59	0.59		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	185	217	82	2033	1277	120		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	10.7	14.6	4.9	42.4	25.6	3.7		
Cycle Q Clear(g_c), s	10.7	14.6	4.9	42.4	25.6	3.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	287	256	133	2529	2079	930		
V/C Ratio(X)	0.64	0.85	0.62	0.80	0.61	0.13		
Avail Cap(c_a), veh/h	532	475	145	2529	2079	930		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	43.1	44.8	49.3	10.5	14.6	10.1		
Incr Delay (d2), s/veh	2.4	7.5	6.6	2.8	1.4	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.4	12.7	2.7	21.3	12.8	1.7		
LnGrp Delay(d),s/veh	45.5	52.3	55.9	13.4	16.0	10.4		
LnGrp LOS	D	D	E	B	B	B		
Approach Vol, veh/h	402			2115	1397			
Approach Delay, s/veh	49.2			15.0	15.5			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		86.1		23.9	14.0	72.1		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9	48.7		
Max Q Clear Time (g_c+1), s		44.4		16.6	6.9	27.6		
Green Ext Time (p_c), s		15.1		1.2	0.0	10.5		
Intersection Summary								
HCM 2010 Ctrl Delay			18.7					
HCM 2010 LOS			B					
Notes								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	110	95	860	65	50	195	985	1435	45	970	40
Future Volume (veh/h)	50	110	95	860	65	50	195	985	1435	45	970	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	120	103	935	71	54	212	1071	1560	49	1054	43
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	365	157	1016	279	212	226	1464	1924	63	1115	45
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.13	0.41	0.41	0.04	0.32	0.32
Sat Flow, veh/h	1774	3539	1523	3548	976	742	1774	3539	2723	1774	3463	141
Grp Volume(v), veh/h	54	120	103	935	0	125	212	1071	1560	49	539	558
Grp Sat Flow(s), veh/h/ln	1774	1770	1523	1774	0	1718	1774	1770	1361	1774	1770	1834
Q Serve(g_s), s	3.1	3.5	7.3	28.5	0.0	6.2	13.2	28.4	44.9	3.1	33.1	33.1
Cycle Q Clear(g_c), s	3.1	3.5	7.3	28.5	0.0	6.2	13.2	28.4	44.9	3.1	33.1	33.1
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	183	365	157	1016	0	492	226	1464	1924	63	570	591
V/C Ratio(X)	0.30	0.33	0.66	0.92	0.00	0.25	0.94	0.73	0.81	0.78	0.95	0.95
Avail Cap(c_a), veh/h	286	571	246	1065	0	516	226	1464	1924	94	576	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	46.4	48.1	38.6	0.0	30.6	48.2	27.5	11.8	53.4	36.9	36.9
Incr Delay (d2), s/veh	0.9	0.5	4.6	12.3	0.0	0.3	43.1	1.9	2.7	21.0	24.6	24.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	1.7	3.3	15.6	0.0	3.0	9.2	14.2	24.6	1.9	20.0	20.7
LnGrp Delay(d), s/veh	47.2	47.0	52.7	50.9	0.0	30.9	91.3	29.4	14.5	74.3	61.5	60.9
LnGrp LOS	D	D	D	D		C	F	C	B	E	E	E
Approach Vol, veh/h	277			1060			2843			1146		
Approach Delay, s/veh	49.1			48.5			25.8			61.7		
Approach LOS	D			D			C			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		50.7		16.0	18.7	40.4		36.4				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		44.6		18.0	14.2	36.3		33.5				
Max Q Clear Time (g_c+1), s		46.9		9.3	15.2	35.1		30.5				
Green Ext Time (p_c), s		0.0		0.8	0.0	0.8		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay						39.3						
HCM 2010 LOS						D						
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	120	1015	10	25	825	95	0	5	30	80	5	105
Future Volume (veh/h)	120	1015	10	25	825	95	0	5	30	80	5	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	1103	11	27	897	103	0	5	33	87	5	114
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	1693	17	58	1298	149	0	275	227	367	16	234
Arrive On Green	0.10	0.47	0.47	0.03	0.41	0.41	0.00	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3589	36	1774	3189	366	0	1863	1538	1266	110	1583
Grp Volume(v), veh/h	130	544	570	27	498	502	0	5	33	92	0	114
Grp Sat Flow(s), veh/h/ln	1774	1770	1855	1774	1770	1785	0	1863	1538	1376	0	1583
Q Serve(g_s), s	2.8	9.1	9.1	0.6	9.0	9.0	0.0	0.1	0.7	2.2	0.0	2.6
Cycle Q Clear(g_c), s	2.8	9.1	9.1	0.6	9.0	9.0	0.0	0.1	0.7	2.3	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.21	0.00		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	172	835	875	58	720	727	0	275	227	384	0	234
V/C Ratio(X)	0.75	0.65	0.65	0.47	0.69	0.69	0.00	0.02	0.15	0.24	0.00	0.49
Avail Cap(c_a), veh/h	334	1073	1125	229	968	976	0	865	714	817	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	7.8	7.8	18.4	9.5	9.5	0.0	14.1	14.4	15.1	0.0	15.2
Incr Delay (d2), s/veh	6.5	0.9	0.9	5.8	1.3	1.3	0.0	0.0	0.3	0.3	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	4.6	4.8	0.4	4.6	4.6	0.0	0.0	0.3	0.9	0.0	1.2
LnGrp Delay(d), s/veh	23.6	8.7	8.7	24.2	10.8	10.8	0.0	14.2	14.7	15.4	0.0	16.8
LnGrp LOS	C	A	A	C	B	B		B	B	B		B
Approach Vol, veh/h	1244			1027			38			206		
Approach Delay, s/veh	10.3			11.1			14.6			16.1		
Approach LOS	B			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.8			10.2	8.3	20.3		10.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	7.3	21.2		18.0				
Max Q Clear Time (g_c+I), s	11.1			4.6	4.8	11.0		2.7				
Green Ext Time (p_c), s	0.0	5.9		0.7	0.1	4.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				11.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	25	25	15	470	25	1055	20	520	510	1060	405	35
Future Volume (veh/h)	25	25	15	470	25	1055	20	520	510	1060	405	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	27	16	511	27	1147	22	565	554	1152	440	38
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	57	34	472	25	1538	37	897	837	962	1812	811
Arrive On Green	0.05	0.05	0.05	0.28	0.28	0.28	0.02	0.25	0.25	0.28	0.51	0.51
Sat Flow, veh/h	1774	1074	637	1689	89	2714	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	27	0	43	538	0	1147	22	565	554	1152	440	38
Grp Sat Flow(s), veh/h/ln	1774	0	1711	1778	0	1357	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	19.0	34.0	37.5	9.3	1.6
Cycle Q Clear(g_c), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	19.0	34.0	37.5	9.3	1.6
Prop In Lane	1.00		0.37	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	91	497	0	1538	37	897	837	962	1812	811
V/C Ratio(X)	0.28	0.00	0.47	1.08	0.00	0.75	0.59	0.63	0.66	1.20	0.24	0.05
Avail Cap(c_a), veh/h	436	0	421	497	0	1538	82	897	837	962	1812	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	61.7	48.3	0.0	22.6	65.1	44.5	22.6	48.3	18.2	16.4
Incr Delay (d2), s/veh	1.6	0.0	3.7	64.4	0.0	2.0	14.3	1.4	2.0	99.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	0.0	1.6	27.3	0.0	16.6	1.0	9.5	20.9	31.0	4.5	0.7
LnGrp Delay(d), s/veh	62.7	0.0	65.4	112.8	0.0	24.6	79.4	45.9	24.5	147.4	18.3	16.4
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h		70		1685			1141			1630		
Approach Delay, s/veh		64.3		52.8			36.2			109.5		
Approach LOS		E		D			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.0	38.5		11.7	7.3	73.2		42.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	37.5			33.0	6.2	65.3		37.5				
Max Q Clear Time (g_c+I), s	36.0			5.3	3.6	11.3		39.5				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				69.2								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	1175	50	55	45	25	5	90	1305	40	10	905	815
Future Volume (veh/h)	1175	50	55	45	25	5	90	1305	40	10	905	815
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1277	54	0	49	27	5	98	1418	43	11	984	886
Adj No. of Lanes	2	1	1	0	1	1	2	0	1	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1243	673	572	65	36	89	122	1449	44	23	1265	2002
Arrive On Green	0.36	0.36	0.00	0.06	0.06	0.06	0.07	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1163	641	1583	1774	3507	106	1774	3539	2787
Grp Volume(v), veh/h	1277	54	0	76	0	5	98	715	746	11	984	886
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1805	0	1583	1774	1770	1844	1774	1770	1393
Q Serve(g_s), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	45.7	45.9	0.7	28.4	15.1
Cycle Q Clear(g_c), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	45.7	45.9	0.7	28.4	15.1
Prop In Lane	1.00	1.00	0.64	1.00	1.00	1.00	1.00	0.06	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1243	673	572	101	0	89	122	731	762	23	1265	2002
V/C Ratio(X)	1.03	0.08	0.00	0.75	0.00	0.06	0.80	0.98	0.98	0.48	0.78	0.44
Avail Cap(c_a), veh/h	1243	673	572	283	0	248	128	731	762	77	1361	2078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	24.2	0.0	53.4	0.0	51.4	52.8	33.2	33.2	56.3	32.9	6.7
Incr Delay (d2), s/veh	32.8	0.1	0.0	10.5	0.0	0.3	28.8	27.6	27.5	14.8	2.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	25.3	1.1	0.0	2.7	0.0	0.2	4.1	27.8	29.0	0.4	14.3	13.2
LnGrp Delay(d), s/veh	69.6	24.2	0.0	63.9	0.0	51.6	81.6	60.7	60.7	71.2	35.6	6.8
LnGrp LOS	F	C		E		D	F	E	E	D	D	A
Approach Vol, veh/h	1331				81			1559			1881	
Approach Delay, s/veh	67.7				63.2			62.0			22.3	
Approach LOS	E				E			E			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.0			46.0	12.4	45.6		11.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	47.5			41.5	8.3	44.2		18.0				
Max Q Clear Time (g_c+I), s	47.9			43.5	8.3	30.4		6.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				48.2								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	700	765	240	260	640	135	320	825	320	205	650	530
Future Volume (veh/h)	700	765	240	260	640	135	320	825	320	205	650	530
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	761	832	0	283	696	147	348	897	348	223	707	576
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	1050	470	356	595	126	306	1003	449	207	806	663
Arrive On Green	0.19	0.30	0.00	0.10	0.21	0.21	0.17	0.28	0.28	0.12	0.23	0.23
Sat Flow, veh/h	3442	3539	1583	3442	2895	611	1774	3539	1583	1774	3539	1560
Grp Volume(v), veh/h	761	832	0	283	425	418	348	897	348	223	707	576
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1736	1774	1770	1583	1774	1770	1560
Q Serve(g_s), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	21.9	18.2	10.5	17.3	20.5
Cycle Q Clear(g_c), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	21.9	18.2	10.5	17.3	20.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	669	1050	470	356	364	357	306	1003	449	207	806	663
V/C Ratio(X)	1.14	0.79	0.00	0.80	1.17	1.17	1.14	0.89	0.78	1.08	0.88	0.87
Avail Cap(c_a), veh/h	669	1050	470	382	364	357	306	1003	449	207	806	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.1	0.0	39.4	35.8	35.8	37.3	31.0	29.6	39.8	33.5	23.8
Incr Delay (d2), s/veh	79.1	4.2	0.0	10.5	101.7	102.7	94.5	10.4	8.3	84.7	10.8	11.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	15.6	10.1	0.0	3.9	19.3	19.0	15.6	12.2	8.9	10.0	9.6	15.1
LnGrp Delay(d), s/veh	115.4	33.3	0.0	49.9	137.5	138.4	131.8	41.4	37.9	124.4	44.3	35.6
LnGrp LOS	F	C		D	F	F	F	D	D	F	D	D
Approach Vol, veh/h	1593			1126			1593			1506		
Approach Delay, s/veh	72.5			115.8			60.4			52.8		
Approach LOS	E			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	13.8	31.2	20.0	25.0	22.0	23.0					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.5	10.0	26.0	15.5	20.5	17.5	18.5					
Max Q Clear Time (g_c+I), s	23.9	9.2	21.5	17.5	22.5	19.5	20.5					
Green Ext Time (p_c), s	0.0	1.1	0.1	2.3	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay				72.5								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	260	895	165	40	490	360	205	670	5	255	610	90
Future Volume (veh/h)	260	895	165	40	490	360	205	670	5	255	610	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	283	973	179	43	533	391	223	728	5	277	663	98
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	1318	577	63	591	433	257	816	6	311	793	117
Arrive On Green	0.10	0.37	0.37	0.04	0.31	0.31	0.14	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	3442	3539	1548	1774	1934	1418	1774	3602	25	1774	3085	455
Grp Volume(v), veh/h	283	973	179	43	488	436	223	358	375	277	380	381
Grp Sat Flow(s), veh/h/ln	1721	1770	1548	1774	1770	1583	1774	1770	1858	1774	1770	1771
Q Serve(g_s), s	7.6	22.5	7.8	2.3	25.0	25.0	11.6	18.6	18.6	14.5	19.2	19.3
Cycle Q Clear(g_c), s	7.6	22.5	7.8	2.3	25.0	25.0	11.6	18.6	18.6	14.5	19.2	19.3
Prop In Lane	1.00	1.00	1.00	1.00	0.90	1.00	0.90	1.00	0.01	1.00	0.00	0.26
Lane Grp Cap(c), veh/h	353	1318	577	63	541	484	257	401	421	311	455	455
V/C Ratio(X)	0.80	0.74	0.31	0.68	0.90	0.90	0.87	0.89	0.89	0.89	0.84	0.84
Avail Cap(c_a), veh/h	382	1341	587	96	570	510	290	420	441	346	476	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	25.7	21.1	45.1	31.5	31.5	39.6	35.5	35.5	38.2	33.3	33.3
Incr Delay (d2), s/veh	11.0	2.2	0.3	11.9	17.1	18.7	21.5	20.2	19.4	22.1	11.8	12.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2	11.3	3.4	1.3	14.8	13.4	7.2	11.3	11.8	9.0	10.9	10.9
LnGrp Delay(d), s/veh	52.5	27.9	21.4	57.0	48.6	50.2	61.1	55.7	55.0	60.3	45.1	45.3
LnGrp LOS	D	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h	1435				967			956			1038	
Approach Delay, s/veh	31.9				49.7			56.6			49.2	
Approach LOS	C				D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s/7.9	39.8	18.2	28.8	14.2	33.4	21.1	25.9					
Change Period (Y+Rc), s/4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s/35.9	15.5	25.5	10.5	30.5	18.5	22.5						
Max Q Clear Time (g_c+1/3), s/24.5	13.6	21.3	9.6	27.0	16.5	20.6						
Green Ext Time (p_c), s/0.0	5.6	0.1	1.8	0.1	1.9	0.2	0.9					

Intersection Summary

HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (veh/h)	625	2240	0	0	1550	265	0	0	0	265	0	430
Future Volume (veh/h)	625	2240	0	0	1550	265	0	0	0	265	0	430
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	679	2435	0	0	1685	288	0	0	0	288	0	467
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
Arrive On Green	0.14	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	679	2435	0	0	1685	288	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	25.3	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.3	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
V/C Ratio(X)	1.40	0.72	0.00	0.00	0.61	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	484	3382	0	0	2772	1240	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	77.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	193.8	1.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	25.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	271.1	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	3114				1973			0				
Approach Delay, s/veh	60.6				0.1			0.0				
Approach LOS	E				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s/180.0					31.0	149.0		0.0				
Change Period (Y+Rc), s/8.0					5.7	8.0		6.1				
Max Green Setting (Gmax), s/91.9					25	60.9		44.0				
Max Q Clear Time (g_c+1/3), s/19.6					27.3	2.0		0.0				
Green Ext Time (p_c), s/44.1					0.0	26.4		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	2070	360	305	1395	120	330	370	305	100	280	55
Future Volume (veh/h)	75	2070	360	305	1395	120	330	370	305	100	280	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	82	2250	391	332	1516	130	359	402	332	109	304	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	1511	676	210	1601	716	273	452	370	228	689	134
Arrive On Green	0.06	0.29	0.29	0.12	0.45	0.45	0.08	0.25	0.25	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1835	1501	3442	2948	574
Grp Volume(v), veh/h	82	2250	391	332	1516	130	359	388	346	109	181	183
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1566	1721	1770	1753
Q Serve(g_s), s	8.1	76.9	38.0	21.3	73.8	8.8	14.3	38.0	38.5	5.5	15.7	16.1
Cycle Q Clear(g_c), s	8.1	76.9	38.0	21.3	73.8	8.8	14.3	38.0	38.5	5.5	15.7	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.33
Lane Grp Cap(c), veh/h	165	1511	676	210	1601	716	273	436	386	228	413	409
V/C Ratio(X)	0.50	1.49	0.58	1.58	0.95	0.18	1.31	0.89	0.90	0.48	0.44	0.45
Avail Cap(c_a), veh/h	168	1511	676	210	1601	716	273	495	438	229	472	467
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.16	0.16	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	64.3	50.4	79.3	47.2	29.4	82.8	65.4	65.6	81.0	58.9	59.0
Incr Delay (d2), s/veh	0.4	220.5	0.6	268.8	5.2	0.2	164.5	16.4	19.3	1.5	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	83.9	16.8	26.1	37.2	3.9	13.0	20.6	18.7	2.7	7.8	7.9
LnGrp Delay(d),s/veh	80.7	284.8	51.0	348.1	52.4	29.6	247.3	81.8	84.9	82.6	59.6	59.8
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2723			1978			1093			473		
Approach Delay, s/veh	245.1			100.5			137.1			65.0		
Approach LOS	F			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	84.9	20.0	48.1	22.4	89.4	17.6	50.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	21.0	70.9	* 14	48.0	* 17	75.2	* 12	50.3				
Max Q Clear Time (g_c+Qg), s	23.3	78.9	16.3	18.1	10.1	75.8	7.5	40.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.1	0.0	0.1	3.4				
Intersection Summary												
HCM 2010 Ctrl Delay	167.0											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	1935	300	185	1365	15	245	280	215	10	115	160
Future Volume (veh/h)	240	1935	300	185	1365	15	245	280	215	10	115	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	261	2103	326	201	1484	16	266	304	234	11	125	174
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1919	848	171	1776	19	309	363	272	54	230	206
Arrive On Green	0.14	0.54	0.54	0.10	0.50	0.50	0.09	0.19	0.19	0.03	0.13	0.13
Sat Flow, veh/h	1774	3539	1563	1774	3587	39	3442	1917	1434	1774	1770	1580
Grp Volume(v), veh/h	261	2103	326	201	732	768	266	280	258	11	125	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1582	1774	1770	1580
Q Serve(g_s), s	25.8	97.6	21.7	17.3	64.1	64.2	13.7	27.4	28.4	1.1	11.9	19.4
Cycle Q Clear(g_c), s	25.8	97.6	21.7	17.3	64.1	64.2	13.7	27.4	28.4	1.1	11.9	19.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	254	1919	848	171	876	919	309	335	300	54	230	206
V/C Ratio(X)	1.03	1.10	0.38	1.18	0.84	0.84	0.86	0.84	0.86	0.20	0.54	0.85
Avail Cap(c_a), veh/h	254	1919	848	171	876	919	402	433	387	128	354	316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.1	41.2	23.8	81.3	39.1	39.2	80.8	70.3	70.7	85.1	73.3	76.5
Incr Delay (d2), s/veh	24.1	44.0	0.1	112.3	6.1	5.9	14.0	10.7	14.5	1.8	2.0	12.1
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	59.2	9.4	13.8	32.8	34.4	7.1	14.4	13.7	0.6	6.0	9.1
LnGrp Delay(d),s/veh	101.3	85.2	23.9	193.6	45.3	45.1	94.8	80.9	85.2	86.9	75.2	88.6
LnGrp LOS	F	F	C	F	D	D	F	F	F	F	E	F
Approach Vol, veh/h	2690			1701			804			310		
Approach Delay, s/veh	79.3			62.7			86.9			83.2		
Approach LOS	E			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	105.6	21.8	29.5	31.5	97.1	11.2	40.2				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	21.0	80.2	* 21	36.0	* 26	71.7	* 13	44.0				
Max Q Clear Time (g_c+Qg), s	23.3	99.6	15.7	21.4	27.8	66.2	3.1	30.4				
Green Ext Time (p_c), s	0.0	0.0	0.4	1.5	0.0	4.1	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay	75.5											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	1955	155	150	1410	70	85	155	185	35	75	35
Future Volume (veh/h)	50	1955	155	150	1410	70	85	155	185	35	75	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.97	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	2125	168	163	1533	76	92	168	201	38	82	38
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1962	990	141	2023	983	246	304	255	195	276	326
Arrive On Green	0.06	0.55	0.55	0.08	0.57	0.57	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1534
Grp Volume(v), veh/h	54	2125	168	163	1533	76	92	168	201	38	82	38
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1534
Q Serve(g_s), s	5.3	99.8	8.0	14.3	58.9	3.4	4.6	14.9	22.2	1.9	7.1	3.6
Cycle Q Clear(g_c), s	5.3	99.8	8.0	14.3	58.9	3.4	4.6	14.9	22.2	1.9	7.1	3.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	110	1962	990	141	2023	983	246	304	255	195	276	326
V/C Ratio(X)	0.49	1.08	0.17	1.16	0.76	0.08	0.37	0.55	0.79	0.19	0.30	0.12
Avail Cap(c_a), veh/h	118	1962	990	141	2023	983	249	455	382	229	445	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.6	40.1	14.1	82.8	29.2	13.1	79.7	69.3	72.4	81.0	68.3	57.5
Incr Delay (d2), s/veh	0.3	38.5	0.0	124.0	2.7	0.2	0.9	1.6	6.4	0.5	0.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.6	59.0	3.5	11.9	29.5	1.5	2.2	7.8	10.1	0.9	3.7	1.5
LnGrp Delay(d), s/veh	81.9	78.7	14.1	206.9	31.9	13.2	80.7	70.9	78.8	81.5	68.9	57.7
LnGrp LOS	F	F	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2347			1772			461			158		
Approach Delay, s/veh	74.1			47.2			76.3			69.2		
Approach LOS	E			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	107.8	18.6	33.7	16.9	110.9	15.9	36.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	14	83.3	* 13	43.0	* 12	85.6	* 12	44.0				
Max Q Clear Time (g_c+max), s	101.8	6.6	9.1	7.3	60.9	3.9	24.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	13.9	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				64.1								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	745	1600	80	345	1140	740	70	1060	370	600	990	455
Future Volume (veh/h)	745	1600	80	345	1140	740	70	1060	370	600	990	455
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.98	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	810	1739	87	375	1239	804	76	1152	402	652	1076	495
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	541	1469	561	312	1130	566	224	878	299	465	1450	884
Arrive On Green	0.16	0.29	0.29	0.09	0.22	0.22	0.07	0.34	0.34	0.14	0.41	0.41
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2581	880	3442	3539	1550
Grp Volume(v), veh/h	810	1739	87	375	1239	804	76	782	772	652	1076	495
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1692	1721	1770	1550
Q Serve(g_s), s	28.3	52.0	6.8	16.3	40.0	40.0	3.8	61.2	61.2	24.3	46.4	36.6
Cycle Q Clear(g_c), s	28.3	52.0	6.8	16.3	40.0	40.0	3.8	61.2	61.2	24.3	46.4	36.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	541	1469	561	312	1130	566	224	602	575	465	1450	884
V/C Ratio(X)	1.50	1.18	0.16	1.20	1.10	1.42	0.34	1.30	1.34	1.40	0.74	0.56
Avail Cap(c_a), veh/h	541	1469	561	312	1130	566	229	602	575	465	1450	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.8	64.0	39.7	81.8	70.0	57.8	80.4	59.4	59.4	77.8	45.0	24.8
Incr Delay (d2), s/veh	233.2	89.9	0.6	118.0	57.1	199.9	0.9	146.5	165.7	194.1	2.1	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	31.0	36.6	3.0	12.9	24.7	59.5	1.8	54.4	55.1	24.1	23.1	15.9
LnGrp Delay(d), s/veh	309.1	153.9	40.3	199.8	127.1	257.7	81.3	205.9	225.1	271.9	47.1	25.6
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2636			2418			1630			2223		
Approach Delay, s/veh	197.9			181.8			209.2			108.3		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.0	17.4	80.6	34.0	48.0	30.0	68.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	15	52.0	* 12	73.5	* 28	40.0	* 24	61.2				
Max Q Clear Time (g_c+max), s	54.0	5.8	48.4	30.3	42.0	26.3	63.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	11.3	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				173.2								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	20	2100	550	500	1600	20	625	20	890	5	5	5
Future Volume (veh/h)	20	2100	550	500	1600	20	625	20	890	5	5	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	2283	598	543	1739	22	695	0	967	5	5	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1582	1059	503	1976	25	808	0	587	62	30	30
Arrive On Green	0.04	0.45	0.45	0.15	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3578	45	3548	0	1563	1774	846	846
Grp Volume(v), veh/h	22	2283	598	543	859	902	695	0	967	5	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1562	1721	1770	1853	1774	0	1563	1774	0	1691
Q Serve(g_s), s	2.2	80.5	36.3	26.3	75.9	76.4	33.9	0.0	41.0	0.5	0.0	1.0
Cycle Q Clear(g_c), s	2.2	80.5	36.3	26.3	75.9	76.4	33.9	0.0	41.0	0.5	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	72	1582	1059	503	978	1024	808	0	587	62	0	59
V/C Ratio(X)	0.30	1.44	0.56	1.08	0.88	0.88	0.86	0.00	1.65	0.08	0.00	0.17
Avail Cap(c_a), veh/h	108	1582	1059	503	978	1024	808	0	587	118	0	113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.9	49.8	15.4	76.8	35.0	35.1	66.7	0.0	56.5	84.0	0.0	84.3
Incr Delay (d2), s/veh	2.3	203.0	2.2	63.4	11.1	10.8	9.3	0.0	298.5	0.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	83.9	27.2	16.9	40.0	42.2	17.6	0.0	77.9	0.3	0.0	0.5
LnGrp Delay(d),s/veh	86.2	252.7	17.6	140.2	46.1	46.0	76.0	0.0	355.0	84.6	0.0	85.6
LnGrp LOS	F	F	B	F	D	D	E		F	F		F
Approach Vol, veh/h	2903			2304			1662			15		
Approach Delay, s/veh	203.0			68.2			238.3			85.2		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	88.5		12.4	13.0	107.4		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax),s	74.8			12.0	* 11	90.1		41.0				
Max Q Clear Time (g_c+Q),s	82.5			3.0	4.2	78.4		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	166.2											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	130	2150	460	45	1440	40	280	10	95	60	10	130
Future Volume (veh/h)	130	2150	460	45	1440	40	280	10	95	60	10	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	2337	500	49	1565	43	304	11	103	65	11	141
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	3101	1105	227	3070	1053	304	404	285	239	337	265
Arrive On Green	0.07	0.61	0.61	0.07	0.60	0.60	0.09	0.11	0.11	0.07	0.10	0.10
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	141	2337	500	49	1565	43	304	11	103	65	11	141
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	7.1	59.7	25.1	2.4	31.7	1.7	15.9	0.5	10.3	3.2	0.5	14.6
Cycle Q Clear(g_c), s	7.1	59.7	25.1	2.4	31.7	1.7	15.9	0.5	10.3	3.2	0.5	14.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	3101	1105	227	3070	1053	304	404	285	239	337	265
V/C Ratio(X)	0.57	0.75	0.45	0.22	0.51	0.04	1.00	0.03	0.36	0.27	0.03	0.53
Avail Cap(c_a), veh/h	249	3101	1105	249	3070	1053	304	1001	552	249	944	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	25.4	12.0	79.6	20.4	9.9	82.0	70.8	64.7	79.4	73.9	68.5
Incr Delay (d2), s/veh	3.0	1.7	1.3	0.5	0.6	0.1	51.6	0.0	0.8	0.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	28.4	11.3	1.2	15.0	0.7	9.7	0.2	4.6	1.6	0.3	6.5
LnGrp Delay(d),s/veh	83.8	27.1	13.3	80.1	21.0	10.0	133.7	70.9	65.5	80.0	73.9	70.1
LnGrp LOS	F	C	B	F	C	A	F	E	E	F	E	E
Approach Vol, veh/h	2978			1657			418			217		
Approach Delay, s/veh	27.5			22.5			115.2			73.3		
Approach LOS	C			C			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	21.6	23.6	18.7	116.1	18.2	27.0					
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	77.8		* 16	48.0	* 13	77.8	* 13	50.9				
Max Q Clear Time (g_c+Q), s	61.7	17.9	16.6	9.1	33.7	5.2	12.3					
Green Ext Time (p_c), s	0.0	14.4	0.0	0.5	0.1	14.8	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	34.8											
HCM 2010 LOS	C											
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰ ↱ ↱	↱	↰ ↱ ↱	↰ ↱ ↱	↱	↱	↰ ↱ ↱	↱	↱	↰ ↱ ↱	↱	↱
Traffic Volume (veh/h)	45	1755	330	610	970	5	240	30	370	20	35	75
Future Volume (veh/h)	45	1755	330	610	970	5	240	30	370	20	35	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	1908	359	663	1054	5	285	0	402	22	38	82
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1983	617	697	2744	13	384	0	492	55	96	131
Arrive On Green	0.07	0.39	0.39	0.20	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5224	25	3548	0	1583	671	1158	1583
Grp Volume(v), veh/h	49	1908	359	663	684	375	285	0	402	60	0	82
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1858	1774	0	1583	1829	0	1583
Q Serve(g_s), s	3.2	44.0	21.5	22.8	14.4	14.4	9.3	0.0	13.0	3.7	0.0	6.0
Cycle Q Clear(g_c), s	3.2	44.0	21.5	22.8	14.4	14.4	9.3	0.0	13.0	3.7	0.0	6.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.37		1.00
Lane Grp Cap(c), veh/h	119	1983	617	697	1781	976	384	0	492	151	0	131
V/C Ratio(X)	0.41	0.96	0.58	0.95	0.38	0.38	0.74	0.00	0.82	0.40	0.00	0.63
Avail Cap(c_a), veh/h	148	1983	617	697	1781	976	384	0	492	152	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.7	35.7	28.9	47.3	16.9	16.9	51.9	0.0	38.2	52.2	0.0	53.3
Incr Delay (d2), s/veh	2.3	13.1	4.0	22.8	0.6	1.1	7.5	0.0	10.3	1.7	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	22.9	10.1	13.1	6.9	7.7	5.0	0.0	13.7	2.0	0.0	3.0
LnGrp Delay(d),s/veh	56.0	48.8	32.9	70.1	17.6	18.1	59.4	0.0	48.5	53.9	0.0	62.2
LnGrp LOS	E	D	C	E	B	B	E		D	D		E
Approach Vol, veh/h	2316			1722			687			142		
Approach Delay, s/veh	46.5			37.9			53.0			58.7		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	54.3		16.3	13.7	70.5		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	24.0	46.7		10.0	* 10	61.0		13.0				
Max Q Clear Time (g_c+M), s	24.0	46.0		8.0	5.2	16.4		15.0				
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	9.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				44.7								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Year 2035 PM (No Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	105	140	25	90	45	220	985	55	55	960	225
Future Volume (veh/h)	175	105	140	25	90	45	220	985	55	55	960	225
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	167	152	27	98	49	239	1071	60	60	1043	245
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	260	217	147	155	130	283	1705	738	86	1310	586
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.16	0.48	0.48	0.05	0.37	0.37
Sat Flow, veh/h	1774	1863	1553	1774	1863	1560	1774	3539	1532	1774	3539	1582
Grp Volume(v), veh/h	152	167	152	27	98	49	239	1071	60	60	1043	245
Grp Sat Flow(s),veh/h/ln	1774	1863	1553	1774	1863	1560	1774	1770	1532	1774	1770	1582
Q Serve(g_s), s	5.9	6.2	6.8	1.0	3.7	2.2	9.5	16.4	1.5	2.4	19.1	8.4
Cycle Q Clear(g_c), s	5.9	6.2	6.8	1.0	3.7	2.2	9.5	16.4	1.5	2.4	19.1	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	260	217	147	155	130	283	1705	738	86	1310	586
V/C Ratio(X)	0.61	0.64	0.70	0.18	0.63	0.38	0.84	0.63	0.08	0.70	0.80	0.42
Avail Cap(c_a), veh/h	439	461	384	439	461	386	354	1941	840	149	1532	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	29.6	29.9	31.1	32.3	31.6	29.7	14.0	10.2	34.1	20.5	17.1
Incr Delay (d2), s/veh	2.5	2.6	4.1	0.6	4.2	1.8	14.0	0.5	0.0	9.9	2.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	3.3	3.1	0.5	2.1	1.0	5.8	8.0	0.7	1.4	9.7	3.8
LnGrp Delay(d),s/veh	31.9	32.2	34.0	31.6	36.5	33.4	43.7	14.5	10.2	44.0	23.1	17.6
LnGrp LOS	C	C	C	C	D	C	D	B	B	D	C	B
Approach Vol, veh/h	471			174			1370			1348		
Approach Delay, s/veh	32.7			34.9			19.4			23.0		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.5			14.6	16.1	31.4		10.5				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	39.9			18.0	14.5	31.5		18.0				
Max Q Clear Time (g_c+M), s	18.4			8.8	11.5	21.1		5.7				
Green Ext Time (p_c), s	0.0	8.4		1.4	0.2	5.8		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				23.5								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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APPENDIX Q

INTERSECTION ANALYSIS WORKSHEETS – YEAR 2035 WITH PROJECT (WITHOUT MELROSE DRIVE EXTENSION)

Year 2035 + Proj AM (No Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	475	30	85	185	105	65	55	1037	65	15	318	35
Future Volume (veh/h)	475	30	85	185	105	65	55	1037	65	15	318	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	516	33	92	201	114	71	60	1127	71	16	346	38
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	90	250	311	220	128	94	1933	599	35	1616	174
Arrive On Green	0.19	0.21	0.21	0.09	0.10	0.10	0.05	0.38	0.38	0.02	0.35	0.35
Sat Flow, veh/h	3442	435	1213	3442	2153	1254	1774	5085	1577	1774	4661	502
Grp Volume(v), veh/h	516	0	125	201	92	93	60	1127	71	16	250	134
Grp Sat Flow(s),veh/h/ln	1721	0	1649	1721	1770	1637	1774	1695	1577	1774	1695	1773
Q Serve(g_s), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.4	1.7	0.5	3.1	3.2
Cycle Q Clear(g_c), s	8.4	0.0	3.9	3.3	2.9	3.2	2.0	10.4	1.7	0.5	3.1	3.2
Prop In Lane	1.00		0.74	1.00		0.77	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	668	0	340	311	181	167	94	1933	599	35	1175	615
V/C Ratio(X)	0.77	0.00	0.37	0.65	0.51	0.55	0.64	0.58	0.12	0.46	0.21	0.22
Avail Cap(c_a), veh/h	959	0	710	523	538	498	210	1933	599	150	1175	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	20.2	26.0	25.2	25.3	27.5	14.6	11.9	28.7	13.6	13.7
Incr Delay (d2), s/veh	2.5	0.0	0.7	2.3	2.2	2.8	7.0	1.3	0.4	9.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.8	1.7	1.5	1.6	1.1	5.0	0.8	0.3	1.5	1.7
LnGrp Delay(d),s/veh	25.1	0.0	20.9	28.3	27.4	28.1	34.5	15.9	12.3	38.0	14.1	14.5
LnGrp LOS	C		C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h	641				386			1258			400	
Approach Delay, s/veh	24.3				28.0			16.6			15.2	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	27.0	9.9	16.7	7.6	25.0	16.0	10.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	22.5	9.0	25.5	7.0	20.5	16.5	18.0				
Max Q Clear Time (g_c+1), s	2.5	12.4	5.3	5.9	4.0	5.2	10.4	5.2				
Green Ext Time (p_c), s	0.0	5.6	0.2	0.6	0.0	2.1	1.1	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				19.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	45	60	115	947	65	342	95	850	533	173	750	35
Future Volume (veh/h)	45	60	115	947	65	342	95	850	533	173	750	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	65	125	1029	71	372	103	924	579	188	815	38
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	325	266	795	95	499	129	1599	494	183	1221	546
Arrive On Green	0.04	0.17	0.17	0.23	0.37	0.37	0.07	0.31	0.31	0.10	0.34	0.34
Sat Flow, veh/h	1774	1863	1525	3442	258	1353	1774	5085	1570	1774	3539	1583
Grp Volume(v), veh/h	49	65	125	1029	0	443	103	924	579	188	815	38
Grp Sat Flow(s),veh/h/ln	1774	1863	1525	1721	0	1611	1774	1695	1570	1774	1770	1583
Q Serve(g_s), s	2.8	3.0	7.5	23.5	0.0	24.4	5.8	15.5	32.0	10.5	19.9	1.6
Cycle Q Clear(g_c), s	2.8	3.0	7.5	23.5	0.0	24.4	5.8	15.5	32.0	10.5	19.9	1.6
Prop In Lane	1.00		1.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	325	266	795	0	594	129	1599	494	183	1221	546
V/C Ratio(X)	0.75	0.20	0.47	1.29	0.00	0.75	0.80	0.58	1.17	1.03	0.67	0.07
Avail Cap(c_a), veh/h	155	659	539	795	0	801	139	1599	494	183	1221	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	35.9	37.8	39.1	0.0	28.0	46.5	29.2	34.9	45.6	28.4	22.4
Incr Delay (d2), s/veh	15.7	0.3	1.3	142.0	0.0	2.6	25.5	0.5	97.7	73.8	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	3.3	26.7	0.0	11.3	3.8	7.3	27.2	8.8	10.0	0.7
LnGrp Delay(d),s/veh	64.2	36.2	39.0	181.2	0.0	30.6	72.0	29.8	132.6	119.7	29.8	22.4
LnGrp LOS	E	D	D	F		C	E	C	F	F	C	C
Approach Vol, veh/h	239			1472			1606				1041	
Approach Delay, s/veh	43.4			135.8			69.5				45.8	
Approach LOS	D			F			E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	36.5	28.0	22.3	11.9	39.6	8.2	42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	32.0	23.5	36.0	8.0	34.5	8.9	50.6				
Max Q Clear Time (g_c+1), s	34.0	25.5	9.5	7.8	21.9	4.8	26.4					
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	4.7	0.0	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay				84.8								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↰	↱	↰	↱	↱
Traffic Volume (veh/h)	5	731	5	9	1229	10	55	0	12	10	0	25
Future Volume (veh/h)	5	731	5	9	1229	10	55	0	12	10	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	5	795	0	10	1336	11	60	0	13	11	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	12	1576	705	23	1624	13	146	0	128	20	0	49
Arrive On Green	0.01	0.45	0.00	0.01	0.45	0.45	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3597	30	1774	0	1555	473	0	1161
Grp Volume(v), veh/h	5	795	0	10	657	690	60	0	13	38	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1857	1774	0	1555	1634	0	0
Q Serve(g_s), s	0.1	6.9	0.0	0.2	14.0	14.0	1.4	0.0	0.3	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	6.9	0.0	0.2	14.0	14.0	1.4	0.0	0.3	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	12	1576	705	23	799	839	146	0	128	69	0	0
V/C Ratio(X)	0.42	0.50	0.00	0.43	0.82	0.82	0.41	0.00	0.10	0.55	0.00	0.00
Avail Cap(c_a), veh/h	206	1722	770	206	861	904	740	0	648	682	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.3	8.6	0.0	21.1	10.3	10.3	18.8	0.0	18.3	20.3	0.0	0.0
Incr Delay (d2), s/veh	21.6	0.3	0.0	12.1	6.1	5.8	1.9	0.0	0.3	6.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.1	3.4	0.0	0.2	8.1	8.5	0.8	0.0	0.2	0.6	0.0	0.0
LnGrp Delay(d), s/veh	42.9	8.8	0.0	33.2	16.4	16.2	20.7	0.0	18.7	26.9	0.0	0.0
LnGrp LOS	D	A		C	B	B	C		B	C		
Approach Vol, veh/h	800			1357			73			38		
Approach Delay, s/veh	9.0			16.4			20.3			26.9		
Approach LOS	A			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.7			6.3	4.8	24.0		8.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	21.0			18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+I), s	8.9			3.0	2.1	16.0		3.4				
Green Ext Time (p_c), s	0.0	4.4		0.1	0.0	3.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	35.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	85	613	1053	64	82	195
Future Vol, veh/h	85	613	1053	64	82	195
Conflicting Peds, #/hr	5	0	0	5	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	652	1120	68	87	207
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1193	0	-	0	1991	1161
Stage 1	-	-	-	-	1159	-
Stage 2	-	-	-	-	832	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	585	-	-	-	~ 67	238
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	427	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	582	-	-	-	~ 56	236
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	425	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.5	0		266.1		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	582	-	-	-	-	205
HCM Lane V/C Ratio	0.155	-	-	-	-	1.437
HCM Control Delay (s)	12.3	-	-	-	-	266.1
HCM Lane LOS	B	-	-	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	-	17.5
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 2010 TWSC
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	690	1107	5	5	10
Future Vol, veh/h	5	690	1107	5	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	742	1190	5	5	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1195	0	0 1942 1190
Stage 1	-	-	- 1190 -
Stage 2	-	-	- 752 -
Critical Hdwy	4.12	-	- 6.1 6
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	584	-	- 85 246
Stage 1	-	-	- 289 -
Stage 2	-	-	- 466 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	584	-	- 84 246
Mov Cap-2 Maneuver	-	-	- 84 -
Stage 1	-	-	- 286 -
Stage 2	-	-	- 466 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	31.9
HCM LOS	D		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	584	-	-	-	150
HCM Lane V/C Ratio	0.009	-	-	-	0.108
HCM Control Delay (s)	11.2	-	-	-	31.9
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Year 2035 + Proj AM (No Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	357	387	20	45	195
Future Vol, veh/h	52	357	387	20	45	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	388	421	22	49	212

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	443	0	0 934 432
Stage 1	-	-	- 432 -
Stage 2	-	-	- 502 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1117	-	- 295 624
Stage 1	-	-	- 655 -
Stage 2	-	-	- 608 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1117	-	- 276 624
Mov Cap-2 Maneuver	-	-	- 276 -
Stage 1	-	-	- 612 -
Stage 2	-	-	- 608 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	19.5
HCM LOS	C		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1117	-	-	-	505
HCM Lane V/C Ratio	0.051	-	-	-	0.517
HCM Control Delay (s)	8.4	0	-	-	19.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	2.9

Year 2035 + Proj AM (No Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				 	 			
Traffic Volume (veh/h)	130	123	175	862	1705	182		
Future Volume (veh/h)	130	123	175	862	1705	182		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	141	134	190	937	1853	198		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	188	168	152	2763	2291	1025		
Arrive On Green	0.11	0.11	0.09	0.78	0.65	0.65		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	141	134	190	937	1853	198		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	9.3	9.9	10.3	9.5	46.5	6.0		
Cycle Q Clear(g_c), s	9.3	9.9	10.3	9.5	46.5	6.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	188	168	152	2763	2291	1025		
V/C Ratio(X)	0.75	0.80	1.25	0.34	0.81	0.19		
Avail Cap(c_a), veh/h	488	435	152	2763	2291	1025		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	52.1	52.4	54.8	3.9	15.7	8.5		
Incr Delay (d2), s/veh	5.9	8.4	154.5	0.3	3.2	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.9	8.8	11.6	4.7	23.4	2.8		
LnGrp Delay(d),s/veh	58.0	60.8	209.3	4.3	18.9	8.9		
LnGrp LOS	E	E	F	A	B	A		
Approach Vol, veh/h	275			1127	2051			
Approach Delay, s/veh	59.4			38.8	17.9			
Approach LOS	E			D	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		101.2		18.8	16.0	85.2		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		73.4		33.0	* 10	57.4		
Max Q Clear Time (g_c+1), s		11.5		11.9	12.3	48.5		
Green Ext Time (p_c), s		8.7		0.8	0.0	7.6		
Intersection Summary								
HCM 2010 Ctrl Delay			28.0					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Future Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1455	33	38	82	560	679	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	526	230	1347	300	346	81	1061	1874	38	988	10
Arrive On Green	0.15	0.15	0.15	0.38	0.38	0.38	0.05	0.30	0.30	0.02	0.28	0.28
Sat Flow, veh/h	1774	3539	1547	3548	791	911	1774	3539	2723	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1455	0	71	82	560	679	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	0	1702	1774	1770	1361	1774	1770	1856
Q Serve(g_s), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.8	1.5	33.0	33.0
Cycle Q Clear(g_c), s	2.5	2.4	15.8	45.5	0.0	3.2	5.5	15.8	12.8	1.5	33.0	33.0
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	264	526	230	1347	0	646	81	1061	1874	38	487	511
V/C Ratio(X)	0.16	0.16	0.90	1.08	0.00	0.11	1.01	0.53	0.36	0.57	1.06	1.06
Avail Cap(c_a), veh/h	267	532	232	1347	0	646	81	1061	1874	84	487	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	44.4	50.1	37.2	0.0	24.0	57.2	34.9	8.2	58.1	43.4	43.4
Incr Delay (d2), s/veh	0.3	0.1	33.5	49.1	0.0	0.1	101.6	0.5	0.1	12.7	58.0	57.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.2	8.9	31.3	0.0	1.5	5.0	7.8	10.5	0.9	23.8	24.9
LnGrp Delay(d),s/veh	44.8	44.6	83.6	86.3	0.0	24.1	158.8	35.4	8.3	70.8	101.4	100.5
LnGrp LOS	D	D	F	F		C	F	D	A	E	F	F
Approach Vol, veh/h		332			1526			1321			1082	
Approach Delay, s/veh		69.0			83.4			29.1			100.4	
Approach LOS		E			F			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		40.4		22.3	10.0	37.5		50.0				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s		32.8		18.0	5.5	33.0		45.5				
Max Q Clear Time (g_c+1), s		17.8		17.8	7.5	35.0		47.5				
Green Ext Time (p_c), s		6.1		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			69.7									
HCM 2010 LOS			E									
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	550	5	10	974	60	5	5	20	95	0	110
Future Volume (veh/h)	50	550	5	10	974	60	5	5	20	95	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	54	598	5	11	1059	65	5	5	22	103	0	120
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1496	13	25	1282	79	97	67	506	130	0	517
Arrive On Green	0.05	0.42	0.42	0.01	0.38	0.38	0.33	0.33	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1774	3596	30	1774	3381	207	0	205	1550	0	0	1583
Grp Volume(v), veh/h	54	294	309	11	554	570	10	0	22	103	0	120
Grp Sat Flow(s), veh/h/ln	1774	1770	1857	1774	1770	1819	205	0	1550	0	0	1583
Q Serve(g_s), s	1.7	6.5	6.5	0.3	15.7	15.7	0.0	0.0	0.5	0.0	0.0	3.1
Cycle Q Clear(g_c), s	1.7	6.5	6.5	0.3	15.7	15.7	18.1	0.0	0.5	18.1	0.0	3.1
Prop In Lane	1.00		0.02	1.00		0.11	0.50		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	736	772	25	671	690	164	0	506	130	0	517
V/C Ratio(X)	0.60	0.40	0.40	0.44	0.83	0.83	0.06	0.00	0.04	0.79	0.00	0.23
Avail Cap(c_a), veh/h	163	744	780	163	744	764	164	0	506	130	0	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	11.3	11.3	27.1	15.6	15.6	15.0	0.0	12.8	27.7	0.0	13.6
Incr Delay (d2), s/veh	6.2	0.4	0.3	11.8	7.0	6.9	0.2	0.0	0.0	27.7	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	3.2	3.3	0.2	8.8	9.1	0.1	0.0	0.2	2.5	0.0	1.3
LnGrp Delay(d), s/veh	31.9	11.7	11.7	38.9	22.6	22.4	15.1	0.0	12.8	55.4	0.0	13.8
LnGrp LOS	C	B	B	D	C	C	B		B	E		B
Approach Vol, veh/h	657			1135			32			223		
Approach Delay, s/veh	13.3			22.7			13.5			33.0		
Approach LOS	B			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.6			22.6	7.3	25.5		22.6				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.3			18.1	5.1	23.3		18.1				
Max Q Clear Time (g_c+I), s	8.5			20.1	3.7	17.7		20.1				
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	3.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				20.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	15	30	5	380	20	983	15	270	560	1133	454	25
Future Volume (veh/h)	15	30	5	380	20	983	15	270	560	1133	454	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	33	5	413	22	1068	16	293	609	1232	493	27
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	90	14	415	22	1448	30	970	815	957	1893	847
Arrive On Green	0.06	0.06	0.06	0.25	0.25	0.25	0.02	0.27	0.27	0.28	0.53	0.53
Sat Flow, veh/h	1774	1573	238	1688	90	2739	1774	3539	1553	3442	3539	1583
Grp Volume(v), veh/h	16	0	38	435	0	1068	16	293	609	1232	493	27
Grp Sat Flow(s), veh/h/ln	1774	0	1812	1778	0	1370	1774	1770	1553	1721	1770	1583
Q Serve(g_s), s	1.1	0.0	2.5	30.3	0.0	30.5	1.1	8.1	34.0	34.5	9.3	1.0
Cycle Q Clear(g_c), s	1.1	0.0	2.5	30.3	0.0	30.5	1.1	8.1	34.0	34.5	9.3	1.0
Prop In Lane	1.00		0.13	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	104	437	0	1448	30	970	815	957	1893	847
V/C Ratio(X)	0.16	0.00	0.37	1.00	0.00	0.74	0.53	0.30	0.75	1.29	0.26	0.03
Avail Cap(c_a), veh/h	472	0	482	437	0	1448	80	970	815	957	1893	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	56.3	46.7	0.0	23.1	60.5	35.7	22.5	44.8	15.6	13.7
Incr Delay (d2), s/veh	0.7	0.0	2.2	41.8	0.0	2.0	13.5	0.2	3.8	137.4	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	1.3	19.9	0.0	14.5	0.7	4.0	21.7	34.6	4.5	0.4
LnGrp Delay(d), s/veh	56.4	0.0	58.5	88.5	0.0	25.1	74.0	35.8	26.3	182.2	15.7	13.7
LnGrp LOS	E		E	F		C	E	D	C	F	B	B
Approach Vol, veh/h	54			1503			918			1752		
Approach Delay, s/veh	57.9			43.4			30.2			132.7		
Approach LOS	E			D			C			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.0	38.5		11.6	6.6	70.9		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	34.0			33.0	5.6	62.9		30.5				
Max Q Clear Time (g_c+I), s	36.0			4.5	3.1	11.3		32.5				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	3.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				77.8								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	435	20	55	45	45	0	40	730	20	10	1161	1154
Future Volume (veh/h)	435	20	55	45	45	0	40	730	20	10	1161	1154
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	473	22	0	49	49	0	43	793	22	11	1262	1254
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	612	331	282	67	67	116	73	1649	46	24	1563	1726
Arrive On Green	0.18	0.18	0.00	0.07	0.07	0.00	0.04	0.47	0.01	0.44	0.44	0.44
Sat Flow, veh/h	3442	1863	1583	909	909	1583	1774	3518	98	1774	3539	2787
Grp Volume(v), veh/h	473	22	0	98	0	0	43	399	416	11	1262	1254
Grp Sat Flow(s), veh/h/ln	1721	1863	1583	1817	0	1583	1774	1770	1846	1774	1770	1393
Q Serve(g_s), s	8.9	0.7	0.0	3.6	0.0	0.0	1.6	10.4	10.5	0.4	20.9	21.0
Cycle Q Clear(g_c), s	8.9	0.7	0.0	3.6	0.0	0.0	1.6	10.4	10.5	0.4	20.9	21.0
Prop In Lane	1.00		1.00	0.50		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	612	331	282	133	0	116	73	830	865	24	1563	1726
V/C Ratio(X)	0.77	0.07	0.00	0.74	0.00	0.00	0.59	0.48	0.48	0.45	0.81	0.73
Avail Cap(c_a), veh/h	922	499	424	484	0	422	131	830	865	131	1618	1770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.1	0.0	30.7	0.0	0.0	31.9	12.3	12.3	33.1	16.4	8.9
Incr Delay (d2), s/veh	2.3	0.1	0.0	7.7	0.0	0.0	7.4	0.4	0.4	12.3	3.1	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	0.3	0.0	2.1	0.0	0.0	0.9	5.2	5.4	0.3	10.8	11.9
LnGrp Delay(d), s/veh	28.8	23.2	0.0	38.3	0.0	0.0	39.3	12.7	12.7	45.4	19.4	10.4
LnGrp LOS	C	C		D			D	B	B	D	B	B
Approach Vol, veh/h	495			98			858			2527		
Approach Delay, s/veh	28.6			38.3			14.1			15.1		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.2			16.5	7.3	34.3		9.4				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	30.9			18.1	5.0	30.9		18.0				
Max Q Clear Time (g_c+I), s	12.5			10.9	3.6	23.0		5.6				
Green Ext Time (p_c), s	0.0	5.0		1.2	0.0	6.8		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.1								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	222	185	150	185	445	65	210	292	130	115	996	514
Future Volume (veh/h)	222	185	150	185	445	65	210	292	130	115	996	514
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	241	201	0	201	484	71	228	317	141	125	1083	559
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	716	320	283	586	86	264	1459	653	158	1248	696
Arrive On Green	0.09	0.20	0.00	0.08	0.19	0.19	0.15	0.41	0.41	0.09	0.35	0.35
Sat Flow, veh/h	3442	3539	1583	3442	3091	451	1774	3539	1583	1774	3539	1548
Grp Volume(v), veh/h	241	201	0	201	276	279	228	317	141	125	1083	559
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1773	1774	1770	1583	1774	1770	1548
Q Serve(g_s), s	5.7	4.0	0.0	4.8	12.6	12.7	10.6	4.9	4.8	5.8	24.0	26.3
Cycle Q Clear(g_c), s	5.7	4.0	0.0	4.8	12.6	12.7	10.6	4.9	4.8	5.8	24.0	26.3
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	716	320	283	336	336	264	1459	653	158	1248	696
V/C Ratio(X)	0.74	0.28	0.00	0.71	0.82	0.83	0.86	0.22	0.22	0.79	0.87	0.80
Avail Cap(c_a), veh/h	471	821	367	409	379	379	264	1459	653	272	1263	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	28.4	0.0	37.6	32.7	32.8	35.0	16.0	15.9	37.5	25.4	20.1
Incr Delay (d2), s/veh	3.5	0.2	0.0	3.3	12.4	13.1	24.5	0.1	0.2	8.5	6.6	6.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	2.0	0.0	2.4	7.3	7.4	7.0	2.4	2.1	3.2	12.9	12.4
LnGrp Delay(d), s/veh	40.6	28.6	0.0	40.9	45.1	45.8	59.5	16.0	16.1	46.0	32.0	26.7
LnGrp LOS	D	C		D	D	D	E	B	B	D	C	C
Approach Vol, veh/h	442			756			686			1767		
Approach Delay, s/veh	35.1			44.2			30.5			31.3		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	39.2	11.4	21.5	17.0	34.2	12.5	20.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.9	29.6	10.0	19.5	12.5	30.0	11.5	18.0				
Max Q Clear Time (g_c+I), s	6.9	6.8	6.0	12.6	28.3	7.7	14.7					
Green Ext Time (p_c), s	0.1	2.5	0.2	0.9	0.0	1.4	0.3	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				34.3								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	295	65	50	545	288	130	368	5	448	820	78
Future Volume (veh/h)	53	295	65	50	545	288	130	368	5	448	820	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	321	71	54	592	313	141	400	5	487	891	85
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	1076	481	74	673	356	175	534	7	529	1140	109
Arrive On Green	0.04	0.30	0.30	0.04	0.30	0.30	0.10	0.15	0.15	0.30	0.35	0.35
Sat Flow, veh/h	3442	3539	1582	1774	2226	1176	1774	3578	45	1774	3266	312
Grp Volume(v), veh/h	58	321	71	54	471	434	141	198	207	487	483	493
Grp Sat Flow(s), veh/h/ln	1721	1770	1582	1774	1770	1633	1774	1770	1853	1774	1770	1808
Q Serve(g_s), s	1.4	6.0	2.8	2.6	22.0	22.0	6.8	9.3	9.3	23.1	21.3	21.3
Cycle Q Clear(g_c), s	1.4	6.0	2.8	2.6	22.0	22.0	6.8	9.3	9.3	23.1	21.3	21.3
Prop In Lane	1.00		1.00	1.00		0.72	1.00		0.02	1.00		0.17
Lane Grp Cap(c), veh/h	149	1076	481	74	535	494	175	264	277	529	617	631
V/C Ratio(X)	0.39	0.30	0.15	0.73	0.88	0.88	0.81	0.75	0.75	0.92	0.78	0.78
Avail Cap(c_a), veh/h	198	1076	481	173	579	535	238	366	383	622	748	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	23.2	22.1	41.2	28.8	28.9	38.4	35.5	35.5	29.5	25.4	25.4
Incr Delay (d2), s/veh	1.7	0.2	0.1	12.6	13.8	14.8	13.4	5.4	5.2	17.5	4.4	4.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	3.0	1.3	1.6	12.8	11.9	4.0	5.0	5.2	13.8	11.1	11.3
LnGrp Delay(d), s/veh	42.2	23.3	22.2	53.8	42.6	43.6	51.8	40.9	40.7	47.0	29.8	29.7
LnGrp LOS	D	C	C	D	D	D	D	D	D	D	C	C
Approach Vol, veh/h	450			959			546			1463		
Approach Delay, s/veh	25.6			43.7			43.6			35.5		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	13.1	34.9	8.3	30.8	30.5	17.5					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	25.0	11.7	36.8	5.0	28.5	30.5	18.0					
Max Q Clear Time (g_c+1/4), s	8.0	8.8	23.3	3.4	24.0	25.1	11.3					
Green Ext Time (p_c), s	0.0	2.1	0.1	5.4	0.0	2.3	0.8	1.3				

Intersection Summary

HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	1087	0	0	1963	215	0	0	0	275	0	595
Future Volume (veh/h)	298	1087	0	0	1963	215	0	0	0	275	0	595
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	324	1182	0	0	2134	234	0	0	0	299	0	647
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
Arrive On Green	0.08	0.95	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	324	1182	0	0	2134	234	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	13.3	4.0	0.0	0.0	87.4	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	4.0	0.0	0.0	87.4	18.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00		0.00	
Lane Grp Cap(c), veh/h	286	3362	0	0	2942	1316	0	1	0	0	0	0
V/C Ratio(X)	1.13	0.35	0.00	0.00	0.73	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	286	3362	0	0	2942	1316	0	512	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	73.3	0.3	0.0	0.0	41.5	16.3	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	93.8	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	1.9	0.0	0.0	43.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	167.2	0.6	0.0	0.0	41.7	16.4	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			D	B						
Approach Vol, veh/h	1506			2368			0					
Approach Delay, s/veh	36.4			39.2			0.0					
Approach LOS	D			D								
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		5		6		8					
Phs Duration (G+Y+Rc), s	160.0		19.0		141.0		0.0					
Change Period (Y+Rc), s	8.0		* 5.7		8.0		6.1					
Max Green Setting (Gmax), s	74.9		* 13		55.9		44.0					
Max Q Clear Time (g_c+1/4), s	6.0		15.3		89.4		0.0					
Green Ext Time (p_c), s	10.2		0.0		0.0		0.0					

Intersection Summary

HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	962	360	348	1758	140	325	305	353	65	365	95
Future Volume (veh/h)	40	962	360	348	1758	140	325	305	353	65	365	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	43	1046	391	378	1911	152	353	332	384	71	397	103
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1325	593	225	1453	650	286	474	424	247	715	184
Arrive On Green	0.18	0.75	0.75	0.13	0.41	0.41	0.08	0.27	0.27	0.07	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1770	1583	3442	2790	716
Grp Volume(V), veh/h	43	1046	391	378	1911	152	353	332	384	71	250	250
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1721	1770	1736
Q Serve(g_s), s	3.3	29.1	19.6	20.3	65.7	10.0	13.3	27.1	37.5	3.1	19.6	20.0
Cycle Q Clear(g_c), s	3.3	29.1	19.6	20.3	65.7	10.0	13.3	27.1	37.5	3.1	19.6	20.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	161	1325	593	225	1453	650	286	474	424	247	454	445
V/C Ratio(X)	0.27	0.79	0.66	1.68	1.31	0.23	1.23	0.70	0.91	0.29	0.55	0.56
Avail Cap(c_a), veh/h	188	1325	593	225	1453	650	286	545	488	258	531	521
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	16.2	15.0	69.9	47.1	30.7	73.3	52.8	56.6	70.4	51.5	51.7
Incr Delay (d2), s/veh	0.6	3.6	4.2	307.5	142.1	0.1	131.8	3.4	18.9	0.6	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.7	14.3	9.0	29.2	60.8	4.4	11.6	13.7	18.7	1.5	9.7	9.7
LnGrp Delay(d), s/veh	61.6	19.8	19.3	377.3	189.3	30.8	205.1	56.2	75.5	71.0	52.6	52.8
LnGrp LOS	E	B	B	F	F	F	F	E	E	E	D	D
Approach Vol, veh/h	1480			2441			1069			571		
Approach Delay, s/veh	20.9			208.5			112.3			55.0		
Approach LOS	C			F			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	67.9	19.0	47.1	20.2	73.7	17.2	48.9				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	28	52.9	* 13	48.0	* 17	56.2	* 12	49.3				
Max Q Clear Time (g_c+Q), s	23.3	31.1	15.3	22.0	5.3	67.7	5.1	39.5				
Green Ext Time (p_c), s	0.0	8.5	0.0	3.2	0.0	0.0	0.1	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay				124.3								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	955	250	204	1701	15	210	190	182	35	320	335
Future Volume (veh/h)	175	955	250	204	1701	15	210	190	182	35	320	335
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	190	1038	272	222	1849	16	228	207	198	38	348	364
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	1311	579	243	1480	13	280	473	409	118	446	393
Arrive On Green	0.10	0.37	0.37	0.14	0.41	0.41	0.08	0.27	0.27	0.07	0.25	0.25
Sat Flow, veh/h	1774	3539	1562	1774	3596	31	3442	1770	1531	1774	1770	1560
Grp Volume(V), veh/h	190	1038	272	222	909	956	228	207	198	38	348	364
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1774	1770	1857	1721	1770	1531	1774	1770	1560
Q Serve(g_s), s	15.3	41.8	21.2	19.8	65.9	65.9	10.4	15.5	17.4	3.3	29.3	36.4
Cycle Q Clear(g_c), s	15.3	41.8	21.2	19.8	65.9	65.9	10.4	15.5	17.4	3.3	29.3	36.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	1311	579	243	728	764	280	473	409	118	446	393
V/C Ratio(X)	1.12	0.79	0.47	0.91	1.25	1.25	0.82	0.44	0.48	0.32	0.78	0.93
Avail Cap(c_a), veh/h	170	1311	579	264	728	764	299	487	421	144	477	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.40	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.3	44.9	38.4	68.1	47.1	47.1	72.3	48.7	49.3	71.3	55.7	58.4
Incr Delay (d2), s/veh	80.7	2.1	1.1	11.7	114.5	115.8	15.1	0.6	0.9	1.6	7.7	25.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	20.8	9.4	10.5	55.3	58.3	5.6	7.7	7.5	1.7	15.3	18.5
LnGrp Delay(d), s/veh	153.0	46.9	39.5	79.8	161.6	162.8	87.4	49.3	50.2	72.9	63.4	83.8
LnGrp LOS	F	D	D	E	F	F	F	D	D	D	E	F
Approach Vol, veh/h	1500			2087			633			750		
Approach Delay, s/veh	59.0			153.5			63.3			73.8		
Approach LOS	E			F			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.6	67.3	18.7	46.4	21.0	73.9	16.3	48.8				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	24	53.7	* 14	43.1	* 15	62.2	* 13	44.0				
Max Q Clear Time (g_c+Q), s	24.8	43.8	12.4	38.4	17.3	67.9	5.3	19.4				
Green Ext Time (p_c), s	0.1	5.1	0.1	1.9	0.0	0.0	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				101.5								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	50	1042	80	75	1735	68	75	85	130	78	140	70
Future Volume (veh/h)	50	1042	80	75	1735	68	75	85	130	78	140	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1133	87	82	1886	74	82	92	141	85	152	76
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	2028	1031	130	2045	1031	272	216	183	252	205	281
Arrive On Green	0.07	0.57	0.57	0.07	0.58	0.58	0.08	0.12	0.12	0.07	0.11	0.11
Sat Flow, veh/h	1774	3539	1582	1774	3539	1583	3442	1863	1583	3442	1863	1570
Grp Volume(v), veh/h	54	1133	87	82	1886	74	82	92	141	85	152	76
Grp Sat Flow(s), veh/h/ln	1774	1770	1582	1774	1770	1583	1721	1863	1583	1721	1863	1570
Q Serve(g_s), s	4.7	32.2	3.2	7.2	77.1	2.7	3.6	7.4	13.8	3.8	12.7	6.7
Cycle Q Clear(g_c), s	4.7	32.2	3.2	7.2	77.1	2.7	3.6	7.4	13.8	3.8	12.7	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	121	2028	1031	130	2045	1031	272	216	183	252	205	281
V/C Ratio(X)	0.45	0.56	0.08	0.63	0.92	0.07	0.30	0.43	0.77	0.34	0.74	0.27
Avail Cap(c_a), veh/h	133	2028	1031	165	2045	1031	280	512	435	258	501	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.6	21.5	10.2	72.1	30.5	10.2	69.5	65.8	68.7	70.4	69.0	56.8
Incr Delay (d2), s/veh	1.5	0.7	0.1	5.0	8.4	0.1	0.6	1.3	6.7	0.8	5.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	15.9	1.4	3.7	39.8	1.2	1.7	3.9	6.4	1.8	6.8	2.9
LnGrp Delay(d), s/veh	73.2	22.1	10.3	77.1	38.9	10.4	70.1	67.1	75.3	71.2	74.3	57.3
LnGrp LOS	E	C	B	E	D	B	E	E	E	E	E	E
Approach Vol, veh/h	1274			2042			315			313		
Approach Delay, s/veh	23.5			39.4			71.6			69.3		
Approach LOS	C			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	99.7	18.4	24.6	16.6	100.4	17.4	25.5					
Change Period (Y+Rc), s	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0					
Max Green Setting (Gmax), s	62.7	* 13	43.0	* 12	65.6	* 12	44.0					
Max Q Clear Time (g_c+1/3), s	34.2	5.6	14.7	6.7	79.1	5.8	15.8					
Green Ext Time (p_c), s	0.1	8.7	0.1	1.1	0.0	0.0	0.1	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				39.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	495	900	45	625	1565	627	60	537	225	733	875	393
Future Volume (veh/h)	495	900	45	625	1565	627	60	537	225	733	875	393
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	538	978	49	679	1701	682	65	584	245	797	951	427
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	1138	461	669	1513	731	244	614	257	566	1229	739
Arrive On Green	0.12	0.22	0.22	0.19	0.30	0.30	0.07	0.25	0.25	0.16	0.35	0.35
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	2421	1014	3442	3539	1579
Grp Volume(v), veh/h	538	978	49	679	1701	682	65	427	402	797	951	427
Grp Sat Flow(s), veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1770	1666	1721	1770	1579
Q Serve(g_s), s	19.3	29.6	3.7	31.1	47.6	47.6	2.9	37.9	38.0	26.3	38.4	31.5
Cycle Q Clear(g_c), s	19.3	29.6	3.7	31.1	47.6	47.6	2.9	37.9	38.0	26.3	38.4	31.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.61	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	415	1138	461	669	1513	731	244	449	423	566	1229	739
V/C Ratio(X)	1.30	0.86	0.11	1.01	1.12	0.93	0.27	0.95	0.95	1.41	0.77	0.58
Avail Cap(c_a), veh/h	415	1138	461	669	1513	731	258	453	427	566	1229	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	59.7	41.1	64.4	56.2	40.7	70.4	58.7	58.7	66.8	46.6	31.0
Incr Delay (d2), s/veh	150.0	8.5	0.5	38.6	65.2	20.4	0.6	29.7	31.4	194.3	3.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	17.8	14.8	1.6	18.4	31.4	32.6	1.4	22.3	21.2	27.8	19.3	14.0
LnGrp Delay(d), s/veh	220.4	68.2	41.6	103.0	121.4	61.1	71.0	88.4	90.1	261.2	49.7	32.2
LnGrp LOS	F	E	D	F	F	E	E	F	F	F	D	C
Approach Vol, veh/h	1565			3062			894			2175		
Approach Delay, s/veh	119.7			103.9			87.9			123.8		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.8	43.8	17.0	62.4	25.0	55.6	32.0	47.4				
Change Period (Y+Rc), s	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8					
Max Green Setting (Gmax), s	35.4	* 12	55.3	* 19	47.2	* 26	41.0					
Max Q Clear Time (g_c+1/3), s	31.6	4.9	40.4	21.3	49.6	28.3	40.0					
Green Ext Time (p_c), s	0.0	2.1	0.1	7.4	0.0	0.0	0.5					
Intersection Summary												
HCM 2010 Ctrl Delay				110.9								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 			 		 	 	
Traffic Volume (veh/h)	10	1189	710	875	2200	25	642	5	745	5	30	25
Future Volume (veh/h)	10	1189	710	875	2200	25	642	5	745	5	30	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1292	772	951	2391	27	702	0	810	5	33	27
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1183	934	609	1737	20	909	0	685	126	67	55
Arrive On Green	0.03	0.33	0.33	0.18	0.48	0.48	0.26	0.00	0.26	0.07	0.07	0.07
Sat Flow, veh/h	1774	3539	1580	3442	3585	40	3548	0	1580	1774	949	777
Grp Volume(v), veh/h	11	1292	772	951	1178	1240	702	0	810	5	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1580	1721	1770	1856	1774	0	1580	1774	0	1726
Q Serve(g_s), s	1.0	53.5	53.5	28.3	77.5	77.5	29.4	0.0	41.0	0.4	0.0	5.4
Cycle Q Clear(g_c), s	1.0	53.5	53.5	28.3	77.5	77.5	29.4	0.0	41.0	0.4	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	47	1183	934	609	857	899	909	0	685	126	0	122
V/C Ratio(X)	0.23	1.09	0.83	1.56	1.37	1.38	0.77	0.00	1.18	0.04	0.00	0.49
Avail Cap(c_a), veh/h	122	1183	934	609	857	899	909	0	685	133	0	129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.3	53.3	24.4	65.8	41.2	41.2	55.2	0.0	45.4	69.3	0.0	71.6
Incr Delay (d2), s/veh	2.5	55.1	8.3	261.0	175.7	177.7	4.1	0.0	96.7	0.1	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	35.2	36.3	35.5	79.7	84.1	15.0	0.0	48.6	0.2	0.0	2.7
LnGrp Delay(d),s/veh	78.8	108.4	32.7	326.8	217.0	218.9	59.3	0.0	142.1	69.4	0.0	74.6
LnGrp LOS	E	F	C	F	F	F	E		F	E		E
Approach Vol, veh/h	2075		3369				1512				65	
Approach Delay, s/veh	80.1		248.7				103.7				74.2	
Approach LOS	F		F				F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	61.5		17.4	10.0	85.5		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (G_max), s	28	52.8		12.0	* 11	70.1		41.0				
Max Q Clear Time (g_c+Q), s	3	55.5		7.4	3.0	79.5		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	166.0											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	595	880	279	75	1958	255	307	100	115	120	55	385
Future Volume (veh/h)	595	880	279	75	1958	255	307	100	115	120	55	385
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	647	957	303	82	2128	277	334	109	125	130	60	418
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	2142	798	272	1867	701	286	922	535	279	915	616
Arrive On Green	0.13	0.42	0.42	0.08	0.37	0.37	0.08	0.26	0.26	0.08	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	5085	1560	3442	3539	1572	3442	3539	1569
Grp Volume(v), veh/h	647	957	303	82	2128	277	334	109	125	130	60	418
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1560	1721	1770	1572	1721	1770	1569
Q Serve(g_s), s	21.3	21.5	18.8	3.6	58.7	19.1	13.3	3.8	9.1	5.8	2.0	35.4
Cycle Q Clear(g_c), s	21.3	21.5	18.8	3.6	58.7	19.1	13.3	3.8	9.1	5.8	2.0	35.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	2142	798	272	1867	701	286	922	535	279	915	616
V/C Ratio(X)	1.41	0.45	0.38	0.30	1.14	0.40	1.17	0.12	0.23	0.47	0.07	0.68
Avail Cap(c_a), veh/h	458	2142	798	282	1867	701	286	1084	607	280	1077	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.3	33.0	24.3	69.5	50.6	29.6	73.3	45.1	37.9	70.2	44.7	40.4
Incr Delay (d2), s/veh	198.1	0.7	1.4	0.6	70.0	1.7	106.4	0.1	0.2	1.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.7	10.1	8.5	1.7	39.6	8.5	10.5	1.9	4.0	2.8	1.0	15.6
LnGrp Delay(d),s/veh	267.4	33.7	25.7	70.1	120.6	31.3	179.8	45.2	38.1	71.4	44.8	42.7
LnGrp LOS	F	C	C	E	F	C	F	D	D	E	D	D
Approach Vol, veh/h	1907		2487				568				608	
Approach Delay, s/veh	111.7		109.0				122.8				49.0	
Approach LOS	F		F				F				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.4	74.9	19.0	47.8	27.0	66.2	18.7	48.1				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (G_max), s	13	59.6	* 13	48.7	* 21	51.4	* 13	49.0				
Max Q Clear Time (g_c+Q), s	8	23.5	15.3	37.4	23.3	60.7	7.8	11.1				
Green Ext Time (p_c), s	0.1	9.8	0.0	1.5	0.0	0.0	0.2	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	104.8											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰↰	↰	↰	↰↰↰	↰↰↰		↰	↰	↰	↰↰	↰	
Traffic Volume (veh/h)	45	742	273	670	1465	18	438	15	367	8	80	100
Future Volume (veh/h)	45	742	273	670	1465	18	438	15	367	8	80	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	807	297	728	1592	20	487	0	399	9	87	109
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1482	461	688	2158	27	529	0	553	17	167	158
Arrive On Green	0.07	0.29	0.29	0.20	0.42	0.42	0.15	0.00	0.15	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3442	5176	65	3548	0	1583	174	1680	1583
Grp Volume(v), veh/h	49	807	297	728	1043	569	487	0	399	96	0	109
Grp Sat Flow(s), veh/h/ln	1774	1695	1583	1721	1695	1851	1774	0	1583	1854	0	1583
Q Serve(g_s), s	2.6	13.4	16.4	20.0	25.9	25.9	13.5	0.0	14.9	4.9	0.0	6.7
Cycle Q Clear(g_c), s	2.6	13.4	16.4	20.0	25.9	25.9	13.5	0.0	14.9	4.9	0.0	6.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.09		1.00
Lane Grp Cap(c), veh/h	132	1482	461	688	1414	772	529	0	553	185	0	158
V/C Ratio(X)	0.37	0.54	0.64	1.06	0.74	0.74	0.92	0.00	0.72	0.52	0.00	0.69
Avail Cap(c_a), veh/h	177	1482	461	688	1414	772	529	0	553	185	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	29.8	30.9	40.0	24.5	24.5	42.0	0.0	28.3	42.7	0.0	43.5
Incr Delay (d2), s/veh	1.7	1.4	6.8	50.6	3.5	6.2	21.7	0.0	4.6	2.5	0.0	12.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	6.5	8.0	14.3	12.7	14.5	8.2	0.0	10.2	2.6	0.0	3.4
LnGrp Delay(d), s/veh	45.8	31.3	37.7	90.6	28.0	30.8	63.6	0.0	32.9	45.3	0.0	55.5
LnGrp LOS	D	C	D	F	C	C	E		C	D		E
Approach Vol, veh/h	1153			2340			886			205		
Approach Delay, s/veh	33.6			48.1			49.8			50.7		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.7	36.6		16.4	13.1	49.2		21.3				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	29.1			10.0	* 10	39.1		14.9				
Max Q Clear Time (g_c+Q), s	18.4			8.7	4.6	27.9		16.9				
Green Ext Time (p_c), s	0.0	4.9		0.1	0.0	7.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				44.9								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰↰	↰	↰	↰↰↰	↰↰↰		↰↰	↰	↰	↰↰	↰	↰
Traffic Volume (veh/h)	80	65	135	60	85	40	70	600	15	35	1151	110
Future Volume (veh/h)	80	65	135	60	85	40	70	600	15	35	1151	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	79	82	147	65	92	43	76	652	16	38	1251	120
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	251	209	158	166	138	103	1607	718	68	1538	678
Arrive On Green	0.13	0.13	0.13	0.09	0.09	0.09	0.06	0.45	0.45	0.04	0.43	0.43
Sat Flow, veh/h	1774	1863	1548	1774	1863	1550	1774	3539	1582	1774	3539	1561
Grp Volume(v), veh/h	79	82	147	65	92	43	76	652	16	38	1251	120
Grp Sat Flow(s), veh/h/ln	1863	1863	1548	1774	1863	1550	1774	1770	1582	1774	1770	1561
Q Serve(g_s), s	2.6	2.5	5.8	2.2	3.0	1.7	2.7	7.8	0.4	1.3	19.6	3.0
Cycle Q Clear(g_c), s	2.6	2.5	5.8	2.2	3.0	1.7	2.7	7.8	0.4	1.3	19.6	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	251	209	158	166	138	103	1607	718	68	1538	678
V/C Ratio(X)	0.33	0.33	0.70	0.41	0.55	0.31	0.74	0.41	0.02	0.56	0.81	0.18
Avail Cap(c_a), veh/h	503	528	439	503	528	439	140	1660	742	173	1727	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	24.9	26.3	27.3	27.7	27.1	29.4	11.6	9.6	30.0	15.7	11.0
Incr Delay (d2), s/veh	0.8	0.7	4.3	1.7	2.9	1.3	12.6	0.2	0.0	6.9	2.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	1.4	2.7	1.2	1.7	0.8	1.7	3.8	0.2	0.8	10.2	1.3
LnGrp Delay(d), s/veh	25.7	25.6	30.6	29.0	30.6	28.4	42.1	11.8	9.6	36.9	18.5	11.1
LnGrp LOS	C	C	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h	308			200			744			1409		
Approach Delay, s/veh	28.0			29.6			14.8			18.4		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.7	33.4		13.1	8.2	32.1		10.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.8			18.0	5.0	31.0		18.0				
Max Q Clear Time (g_c+Q), s	9.8			7.8	4.7	21.6		5.0				
Green Ext Time (p_c), s	0.0	4.5		0.8	0.0	6.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				19.3								
HCM 2010 LOS				B								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj AM (No Melrose)
25: Main Access & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	25	628	37	13	893	8	87	0	31	20	0	59
Future Volume (veh/h)	25	628	37	13	893	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	27	683	40	14	971	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1597	714	32	1545	691	354	0	236	382	0	236
Arrive On Green	0.03	0.45	0.45	0.02	0.44	0.44	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	683	40	14	971	9	95	0	34	22	0	64
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.5	4.6	0.5	0.3	7.5	0.1	2.4	0.0	0.7	0.5	0.0	1.3
Cycle Q Clear(g_c), s	0.5	4.6	0.5	0.3	7.5	0.1	3.7	0.0	0.7	1.2	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	1597	714	32	1545	691	354	0	236	382	0	236
V/C Ratio(X)	0.46	0.43	0.06	0.43	0.63	0.01	0.27	0.00	0.14	0.06	0.00	0.27
Avail Cap(c_a), veh/h	251	2353	1052	251	2353	1052	834	0	806	875	0	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	6.6	5.5	17.2	7.7	5.6	15.0	0.0	13.1	13.6	0.0	13.3
Incr Delay (d2), s/veh	5.6	0.2	0.0	9.0	0.4	0.0	0.4	0.0	0.3	0.1	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	2.2	0.2	0.2	3.7	0.1	0.9	0.0	0.3	0.2	0.0	0.6
LnGrp Delay(d), s/veh	22.4	6.8	5.5	26.1	8.2	5.7	15.4	0.0	13.4	13.7	0.0	14.0
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h	750				994			129		86		
Approach Delay, s/veh	7.3				8.4			14.9		13.9		
Approach LOS	A				A			B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.5			9.8	5.7	19.9		9.8				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I), s	6.6			3.3	2.5	9.5		5.7				
Green Ext Time (p_c), s	0.0	4.5		0.3	0.0	5.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					8.6							
HCM 2010 LOS					A							

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
1: Vandegrift Blvd & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	140	90	60	100	65	15	105	405	105	60	946	360
Future Volume (veh/h)	140	90	60	100	65	15	105	405	105	60	946	360
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	98	65	109	71	16	114	440	114	65	1028	391
Adj No. of Lanes	2	1	0	2	2	0	1	3	1	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	139	92	212	363	79	147	2565	799	90	1705	648
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.13	0.08	0.50	0.50	0.05	0.47	0.47
Sat Flow, veh/h	3442	1043	692	3442	2886	630	1774	5085	1583	1774	3613	1374
Grp Volume(v), veh/h	152	0	163	109	43	44	114	440	114	65	964	455
Grp Sat Flow(s), veh/h/ln	1721	0	1735	1721	1770	1746	1774	1695	1583	1774	1695	1597
Q Serve(g_s), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.4	2.8	2.6	15.1	15.1
Cycle Q Clear(g_c), s	3.1	0.0	6.5	2.2	1.6	1.6	4.5	3.4	2.8	2.6	15.1	15.1
Prop In Lane	1.00		0.40	1.00		0.36	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	238	0	232	212	223	220	147	2565	799	90	1600	754
V/C Ratio(X)	0.64	0.00	0.70	0.51	0.19	0.20	0.77	0.17	0.14	0.73	0.60	0.60
Avail Cap(c_a), veh/h	406	0	475	330	445	439	311	2565	799	224	1600	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	29.8	32.7	28.2	28.2	32.3	9.7	9.5	33.7	14.0	14.0
Incr Delay (d2), s/veh	2.8	0.0	3.9	1.9	0.4	0.4	8.4	0.1	0.4	10.5	1.7	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	3.3	1.1	0.8	0.8	2.6	1.6	1.3	1.5	7.3	7.3
LnGrp Delay(d), s/veh	35.5	0.0	33.7	34.6	28.6	28.7	40.7	9.8	9.9	44.2	15.7	17.6
LnGrp LOS	D		C	C	C	C	D	A	A	D	B	B
Approach Vol, veh/h		315			196			668			1484	
Approach Delay, s/veh		34.6			32.0			15.1			17.5	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	40.8	8.9	14.1	10.5	38.5	9.5	13.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.1	36.3	6.9	19.7	12.6	32.8	8.5	18.1				
Max Q Clear Time (g_c+I), s	4.6	5.4	4.2	8.5	6.5	17.1	5.1	3.6				
Green Ext Time (p_c), s	0.0	3.6	0.1	0.6	0.1	8.9	0.1	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay					20.0							
HCM 2010 LOS					C							

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
2: N. River Rd & Vandegrift Blvd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Traffic Volume (veh/h)	95	110	115	681	165	125	235	770	1110	371	1045	65
Future Volume (veh/h)	95	110	115	681	165	125	235	770	1110	371	1045	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	120	125	740	179	136	255	837	1207	403	1136	71
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	346	280	552	268	203	276	1592	487	354	1263	553
Arrive On Green	0.07	0.19	0.19	0.16	0.27	0.27	0.16	0.31	0.31	0.20	0.36	0.36
Sat Flow, veh/h	1774	1863	1507	3442	975	740	1774	5085	1556	1774	3539	1548
Grp Volume(v), veh/h	103	120	125	740	0	315	255	837	1207	403	1136	71
Grp Sat Flow(s), veh/h/ln	1774	1863	1507	1721	0	1715	1774	1695	1556	1774	1770	1548
Q Serve(g_s), s	7.3	7.2	9.4	20.5	0.0	20.9	18.1	17.3	40.0	25.5	38.8	3.9
Cycle Q Clear(g_c), s	7.3	7.2	9.4	20.5	0.0	20.9	18.1	17.3	40.0	25.5	38.8	3.9
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	346	280	552	0	471	276	1592	487	354	1263	553
V/C Ratio(X)	0.81	0.35	0.45	1.34	0.00	0.67	0.92	0.53	2.48	1.14	0.90	0.13
Avail Cap(c_a), veh/h	217	525	425	552	0	549	276	1592	487	354	1263	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	45.3	46.2	53.6	0.0	41.2	53.2	36.1	43.9	51.1	38.9	27.7
Incr Delay (d2), s/veh	11.4	0.6	1.1	164.8	0.0	2.5	34.4	0.3	671.1	90.8	8.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	3.8	4.0	22.3	0.0	10.2	11.5	8.1	108.0	21.3	20.5	1.7
LnGrp Delay(d), s/veh	69.8	45.8	47.3	218.4	0.0	43.7	87.5	36.4	714.9	141.9	47.8	27.8
LnGrp LOS	E	D	D	F		D	F	D	F	F	D	C
Approach Vol, veh/h	348				1055			2299			1610	
Approach Delay, s/veh	53.5				166.3			398.3			70.5	
Approach LOS	D				F			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	44.5	25.0	28.2	24.4	50.1	13.7	39.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	40.0	20.5	36.0	19.9	45.6	15.6	40.9					
Max Q Clear Time (g_c+Q), s	42.0	22.5	11.4	20.1	40.8	9.3	22.9					
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	3.1	1.8					

Intersection Summary

HCM 2010 Ctrl Delay	230.3
HCM 2010 LOS	F

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
3: Waterview Way/Los Morros Way & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Traffic Volume (veh/h)	15	1495	10	13	877	10	40	0	20	5	0	25
Future Volume (veh/h)	15	1495	10	13	877	10	40	0	20	5	0	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	16	1625	0	14	953	11	43	0	22	5	0	27
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1645	736	32	1656	19	147	0	125	9	0	50
Arrive On Green	0.02	0.46	0.00	0.02	0.46	0.46	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1774	3539	1583	1774	3582	41	1774	0	1519	252	0	1359
Grp Volume(v), veh/h	16	1625	0	14	471	493	43	0	22	32	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1854	1774	0	1519	1610	0	0
Q Serve(g_s), s	0.4	20.5	0.0	0.4	8.8	8.8	1.0	0.0	0.6	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.4	20.5	0.0	0.4	8.8	8.8	1.0	0.0	0.6	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	0.16		0.84
Lane Grp Cap(c), veh/h	36	1645	736	32	818	857	147	0	125	59	0	0
V/C Ratio(X)	0.45	0.99	0.00	0.44	0.58	0.58	0.29	0.00	0.18	0.54	0.00	0.00
Avail Cap(c_a), veh/h	196	1645	736	196	822	861	707	0	605	641	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	12.0	0.0	22.0	8.9	8.9	19.5	0.0	19.3	21.4	0.0	0.0
Incr Delay (d2), s/veh	8.5	19.3	0.0	9.4	1.0	0.9	1.1	0.0	0.7	7.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	14.1	0.0	0.3	4.4	4.6	0.5	0.0	0.3	0.5	0.0	0.0
LnGrp Delay(d), s/veh	30.4	31.3	0.0	31.4	9.9	9.8	20.6	0.0	20.0	29.0	0.0	0.0
LnGrp LOS	C	C		C	A	A	C		B	C		
Approach Vol, veh/h	1641			978			65			32		
Approach Delay, s/veh	31.3			10.2			20.4			29.0		
Approach LOS	C			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	25.5		6.2	5.4	25.4		8.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	40.0	21.0		18.0	5.0	21.0		18.0				
Max Q Clear Time (g_c+Q), s	42.0	22.5		2.9	2.4	10.8		3.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	4.4		0.2				

Intersection Summary

HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
4: N. River Rd & Leon St

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	1250	779	73	75	120
Future Vol, veh/h	165	1250	779	73	75	120
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	1330	829	78	80	128

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	908	0	0 2551 869
Stage 1	-	-	- 869 -
Stage 2	-	-	- 1682 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	750	-	- ~ 29 351
Stage 1	-	-	- 410 -
Stage 2	-	-	- 166 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	749	-	- ~ 22 351
Mov Cap-2 Maneuver	-	-	- ~ -13 -
Stage 1	-	-	- 313 -
Stage 2	-	-	- 166 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	
HCM LOS			-

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	749	-	-	-	+
HCM Lane V/C Ratio	0.234	-	-	-	-
HCM Control Delay (s)	11.3	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-	-

Notes			
~: Volume exceeds capacity	\$. Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Year 2035 + Proj PM (No Melrose)
5: N. River Rd & Stallion Dr

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1315	842	5	0	5
Future Vol, veh/h	10	1315	842	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	170	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	1429	915	5	0	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	920	0	0 2366 915
Stage 1	-	-	- 915 -
Stage 2	-	-	- 1451 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	742	-	- ~ 39 331
Stage 1	-	-	- 390 -
Stage 2	-	-	- 215 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	742	-	- ~ 38 331
Mov Cap-2 Maneuver	-	-	- ~ 38 -
Stage 1	-	-	- 384 -
Stage 2	-	-	- 215 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	742	-	-	-	331
HCM Lane V/C Ratio	0.015	-	-	-	0.016
HCM Control Delay (s)	9.9	-	-	-	16.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Year 2035 + Proj PM (No Melrose)
7: N. River Rd & Sleeping Indian Rd

North River Farms
06/27/2018

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	163	466	332	20	25	115
Future Vol, veh/h	163	466	332	20	25	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	177	507	361	22	27	125
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	383	0	0	1233	372	
Stage 1	-	-	-	372	-	
Stage 2	-	-	-	861	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1175	-	-	195	674	
Stage 1	-	-	-	697	-	
Stage 2	-	-	-	414	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1175	-	-	154	674	
Mov Cap-2 Maneuver	-	-	-	154	-	
Stage 1	-	-	-	551	-	
Stage 2	-	-	-	414	-	
Approach	EB	WB	SB			
HCM Control Delay, s	2.2	0	18.4			
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1175	-	-	-	420	
HCM Lane V/C Ratio	0.151	-	-	-	0.362	
HCM Control Delay (s)	8.6	0	-	-	18.4	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.5	-	-	-	1.6	

Year 2035 + Proj PM (No Melrose)
8: SR-76 & N. River Rd

North River Farms
06/27/2018

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				 	 			
Traffic Volume (veh/h)	196	231	136	1878	1190	161		
Future Volume (veh/h)	196	231	136	1878	1190	161		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	213	251	148	2041	1293	175		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	326	291	145	2451	1978	885		
Arrive On Green	0.18	0.18	0.08	0.69	0.56	0.56		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	213	251	148	2041	1293	175		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	12.2	16.9	9.0	46.1	27.9	6.0		
Cycle Q Clear(g_c), s	12.2	16.9	9.0	46.1	27.9	6.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	326	291	145	2451	1978	885		
V/C Ratio(X)	0.65	0.86	1.02	0.83	0.65	0.20		
Avail Cap(c_a), veh/h	532	475	145	2451	1978	885		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	41.6	43.5	50.5	12.3	16.9	12.0		
Incr Delay (d2), s/veh	2.2	8.8	80.0	3.5	1.7	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.2	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.2	14.6	7.6	23.3	14.1	2.7		
LnGrp Delay(d),s/veh	43.8	52.4	130.7	15.8	18.6	12.5		
LnGrp LOS	D	D	F	B	B	B		
Approach Vol, veh/h	464			2189	1468			
Approach Delay, s/veh	48.4			23.6	17.8			
Approach LOS	D			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		83.7		26.3	14.7	69.0		
Change Period (Y+Rc), s		7.5		6.1	* 5.7	7.5		
Max Green Setting (Gmax), s		63.4		33.0	* 9	48.7		
Max Q Clear Time (g_c+I1), s		48.1		18.9	11.0	29.9		
Green Ext Time (p_c), s		12.6		1.3	0.0	10.1		
Intersection Summary								
HCM 2010 Ctrl Delay			24.3					
HCM 2010 LOS			C					
Notes								

Year 2035 + Proj PM (No Melrose)
9: Douglas Dr & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	50	110	95	898	65	50	195	985	1511	45	970	40
Future Volume (veh/h)	50	110	95	898	65	50	195	985	1511	45	970	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1900	
Adj Flow Rate, veh/h	54	120	103	976	71	54	212	1071	1642	49	1054	43
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	364	156	1036	285	217	223	1452	1931	63	1107	45
Arrive On Green	0.10	0.10	0.10	0.29	0.29	0.29	0.13	0.41	0.41	0.04	0.32	0.32
Sat Flow, veh/h	1774	3539	1523	3548	976	742	1774	3539	2723	1774	3463	141
Grp Volume(v), veh/h	54	120	103	976	0	125	212	1071	1642	49	539	558
Grp Sat Flow(s), veh/h/ln	1774	1770	1523	1774	0	1718	1774	1770	1361	1774	1770	1834
Q Serve(g_s), s	3.2	3.6	7.3	30.3	0.0	6.3	13.4	28.9	46.3	3.1	33.6	33.6
Cycle Q Clear(g_c), s	3.2	3.6	7.3	30.3	0.0	6.3	13.4	28.9	46.3	3.1	33.6	33.6
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	182	364	156	1036	0	502	223	1452	1931	63	566	587
V/C Ratio(X)	0.30	0.33	0.66	0.94	0.00	0.25	0.95	0.74	0.85	0.78	0.95	0.95
Avail Cap(c_a), veh/h	283	565	243	1053	0	510	223	1452	1931	93	569	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	47.0	48.7	39.0	0.0	30.5	49.0	28.1	11.9	54.0	37.5	37.5
Incr Delay (d2), s/veh	0.9	0.5	4.6	15.6	0.0	0.3	46.1	2.0	3.8	21.6	26.1	25.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.6	1.8	3.3	17.0	0.0	3.0	9.4	14.5	26.3	1.9	20.4	21.1
LnGrp Delay(d), s/veh	47.7	47.5	53.4	54.6	0.0	30.7	95.1	30.2	15.7	75.6	63.6	63.1
LnGrp LOS	D	D	D	D		C	F	C	B	E	E	E
Approach Vol, veh/h	277			1101			2925			1146		
Approach Delay, s/veh	49.7			51.9			26.8			63.9		
Approach LOS	D			D			C			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	50.8			16.1	18.7	40.6		37.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	44.6			18.0	14.2	36.3		33.5				
Max Q Clear Time (g_c+I), s	48.3			9.3	15.4	35.6		32.3				
Green Ext Time (p_c), s	0.0	0.0		0.8	0.0	0.5		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				40.8								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
10: Ave Descanso & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	120	1091	10	25	863	95	0	5	30	80	5	105
Future Volume (veh/h)	120	1091	10	25	863	95	0	5	30	80	5	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	1186	11	27	938	103	0	5	33	87	5	114
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	1718	16	58	1328	146	0	273	225	363	16	232
Arrive On Green	0.10	0.48	0.48	0.03	0.41	0.41	0.00	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	3592	33	1774	3206	352	0	1863	1537	1266	110	1583
Grp Volume(v), veh/h	130	584	613	27	518	523	0	5	33	92	0	114
Grp Sat Flow(s), veh/h/ln	1774	1770	1856	1774	1770	1788	0	1863	1537	1376	0	1583
Q Serve(g_s), s	2.8	10.1	10.1	0.6	9.5	9.5	0.0	0.1	0.7	2.3	0.0	2.6
Cycle Q Clear(g_c), s	2.8	10.1	10.1	0.6	9.5	9.5	0.0	0.1	0.7	2.4	0.0	2.6
Prop In Lane	1.00		0.02	1.00		0.20	0.00		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	171	846	888	58	733	741	0	273	225	379	0	232
V/C Ratio(X)	0.76	0.69	0.69	0.47	0.71	0.71	0.00	0.02	0.15	0.24	0.00	0.49
Avail Cap(c_a), veh/h	329	1056	1108	225	953	963	0	852	703	804	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	8.0	8.0	18.7	9.5	9.5	0.0	14.4	14.7	15.3	0.0	15.5
Incr Delay (d2), s/veh	6.8	1.4	1.3	5.8	1.7	1.6	0.0	0.0	0.3	0.3	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.7	5.2	5.4	0.4	4.9	5.0	0.0	0.0	0.3	1.0	0.0	1.2
LnGrp Delay(d), s/veh	24.1	9.4	9.3	24.5	11.2	11.2	0.0	14.4	15.0	15.7	0.0	17.1
LnGrp LOS	C	A	A	C	B	B		B	B	B		B
Approach Vol, veh/h	1327			1068			38			206		
Approach Delay, s/veh	10.8			11.5			14.9			16.4		
Approach LOS	B			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.3			10.3	8.3	20.8		10.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5			18.0	7.3	21.2		18.0				
Max Q Clear Time (g_c+I), s	12.1			4.6	4.8	11.5		2.7				
Green Ext Time (p_c), s	0.0	6.0		0.7	0.1	4.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				11.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
11: College Blvd & N. River Rd

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	25	15	470	25	1309	20	596	510	1188	443	35
Future Volume (veh/h)	25	25	15	470	25	1309	20	596	510	1188	443	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	27	16	511	27	1423	22	648	554	1291	482	38
Adj No. of Lanes	1	1	0	0	1	2	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	57	34	472	25	1538	37	897	837	962	1812	811
Arrive On Green	0.05	0.05	0.05	0.28	0.28	0.28	0.02	0.25	0.25	0.28	0.51	0.51
Sat Flow, veh/h	1774	1074	637	1689	89	2714	1774	3539	1556	3442	3539	1583
Grp Volume(v), veh/h	27	0	43	538	0	1423	22	648	554	1291	482	38
Grp Sat Flow(s), veh/h/ln	1774	0	1711	1778	0	1357	1774	1770	1556	1721	1770	1583
Q Serve(g_s), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	22.4	34.0	37.5	10.3	1.6
Cycle Q Clear(g_c), s	2.0	0.0	3.3	37.5	0.0	37.5	1.6	22.4	34.0	37.5	10.3	1.6
Prop In Lane	1.00		0.37	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	91	497	0	1538	37	897	837	962	1812	811
V/C Ratio(X)	0.28	0.00	0.47	1.08	0.00	0.93	0.59	0.72	0.66	1.34	0.27	0.05
Avail Cap(c_a), veh/h	436	0	421	497	0	1538	82	897	837	962	1812	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	0.0	61.7	48.3	0.0	27.3	65.1	45.8	22.6	48.3	18.5	16.4
Incr Delay (d2), s/veh	1.6	0.0	3.7	64.4	0.0	9.9	14.3	2.9	2.0	160.9	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.0	1.6	27.3	0.0	26.1	1.0	11.3	20.9	39.3	5.0	0.7
LnGrp Delay(d), s/veh	62.7	0.0	65.4	112.8	0.0	37.2	79.4	48.7	24.5	209.3	18.6	16.4
LnGrp LOS	E		E	F		D	E	D	C	F	B	B
Approach Vol, veh/h	70			1961			1224			1811		
Approach Delay, s/veh	64.3			57.9			38.3			154.5		
Approach LOS	E			E			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.0	38.5		11.7	7.3	73.2		42.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	37.5	34.0		33.0	6.2	65.3		37.5				
Max Q Clear Time (g_c+Q), s	39.5	36.0		5.3	3.6	12.3		39.5				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	87.8											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
12: Douglas Dr & El Camino Real

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↰	↑	↱		↰	↱	↰	↱		↰	↱	↱
Traffic Volume (veh/h)	1205	50	55	45	25	5	90	1351	40	10	928	830
Future Volume (veh/h)	1205	50	55	45	25	5	90	1351	40	10	928	830
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	1310	54	0	49	27	5	98	1468	43	11	1009	902
Adj No. of Lanes	2	1	1	0	1	1	1	2	0	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1243	673	572	65	36	89	122	1451	42	23	1265	2002
Arrive On Green	0.36	0.36	0.00	0.06	0.06	0.06	0.07	0.41	0.41	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1163	641	1583	1774	3512	103	1774	3539	2787
Grp Volume(v), veh/h	1310	54	0	76	0	5	98	739	772	11	1009	902
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1805	0	1583	1774	1770	1845	1774	1770	1393
Q Serve(g_s), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	47.5	47.5	0.7	29.5	15.5
Cycle Q Clear(g_c), s	41.5	2.2	0.0	4.8	0.0	0.3	6.3	47.5	47.5	0.7	29.5	15.5
Prop In Lane	1.00		1.00	0.64		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	1243	673	572	101	0	89	122	731	762	23	1265	2002
V/C Ratio(X)	1.05	0.08	0.00	0.75	0.00	0.06	0.80	1.01	1.01	0.48	0.80	0.45
Avail Cap(c_a), veh/h	1243	673	572	283	0	248	128	731	762	77	1361	2078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	24.2	0.0	53.4	0.0	51.4	52.8	33.7	33.7	56.3	33.2	6.7
Incr Delay (d2), s/veh	41.1	0.1	0.0	10.5	0.0	0.3	28.8	35.8	35.9	14.8	3.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.8	1.1	0.0	2.7	0.0	0.2	4.1	30.4	31.7	0.4	14.9	13.6
LnGrp Delay(d),s/veh	77.8	24.2	0.0	63.9	0.0	51.6	81.6	69.5	69.6	71.2	36.4	6.9
LnGrp LOS	F	C		E		D	F	F	F	E	D	A
Approach Vol, veh/h	1364			81			1609			1922		
Approach Delay, s/veh	75.7			63.2			70.3			22.8		
Approach LOS	E			E			E			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.0			46.0	12.4	45.6		11.0				
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	47.5			41.5	8.3	44.2		18.0				
Max Q Clear Time (g_c+I), s	49.5			43.5	8.3	31.5		6.8				
Green Ext Time (p_c), s	0.0			0.0	0.0	8.6		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	53.3											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
13: El Camino Real & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	705	765	240	260	640	135	320	845	320	205	660	533
Future Volume (veh/h)	705	765	240	260	640	135	320	845	320	205	660	533
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00	0.97	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	766	832	0	283	696	147	348	918	348	223	717	579
Adj No. of Lanes	2	2	1	2	2	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	1050	470	356	595	126	306	1003	449	207	806	663
Arrive On Green	0.19	0.30	0.00	0.10	0.21	0.21	0.17	0.28	0.28	0.12	0.23	0.23
Sat Flow, veh/h	3442	3539	1583	3442	2895	611	1774	3539	1583	1774	3539	1560
Grp Volume(v), veh/h	766	832	0	283	425	418	348	918	348	223	717	579
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1770	1736	1774	1770	1583	1774	1770	1560
Q Serve(g_s), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	22.6	18.2	10.5	17.7	20.5
Cycle Q Clear(g_c), s	17.5	19.5	0.0	7.2	18.5	18.5	15.5	22.6	18.2	10.5	17.7	20.5
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	1050	470	356	364	357	306	1003	449	207	806	663
V/C Ratio(X)	1.14	0.79	0.00	0.80	1.17	1.17	1.14	0.92	0.78	1.08	0.89	0.87
Avail Cap(c_a), veh/h	669	1050	470	382	364	357	306	1003	449	207	806	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.1	0.0	39.4	35.8	35.8	37.3	31.2	29.6	39.8	33.7	23.9
Incr Delay (d2), s/veh	82.0	4.2	0.0	10.5	101.7	102.7	94.5	12.7	8.3	84.7	12.0	12.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	15.9	10.1	0.0	3.9	19.3	19.0	15.6	12.7	8.9	10.0	9.9	15.3
LnGrp Delay(d), s/veh	118.2	33.3	0.0	49.9	137.5	138.4	131.8	43.9	37.9	124.4	45.6	36.1
LnGrp LOS	F	C		D	F	F	F	D	D	F	D	D
Approach Vol, veh/h	1598				1126			1614			1519	
Approach Delay, s/veh	74.0				115.8			61.5			53.6	
Approach LOS	E				F			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	30.0	13.8	31.2	20.0	25.0	22.0	23.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	10.0	26.0	15.5	20.5	17.5	18.5					
Max Q Clear Time (g_c+I), s	24.6	9.2	21.5	17.5	22.5	19.5	20.5					
Green Ext Time (p_c), s	0.0	0.7	0.1	2.3	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay				73.3								
HCM 2010 LOS				E								

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
14: Douglas Dr & Mission Ave

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗	↖↗
Traffic Volume (veh/h)	270	895	165	40	490	370	205	695	5	260	623	95
Future Volume (veh/h)	270	895	165	40	490	370	205	695	5	260	623	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	293	973	179	43	533	402	223	755	5	283	677	103
Adj No. of Lanes	2	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1321	578	63	580	438	256	823	5	316	805	122
Arrive On Green	0.10	0.37	0.37	0.04	0.30	0.30	0.14	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	3442	3539	1548	1774	1909	1439	1774	3603	24	1774	3072	467
Grp Volume(v), veh/h	293	973	179	43	494	441	223	371	389	283	390	390
Grp Sat Flow(s), veh/h/ln	1721	1770	1548	1774	1770	1578	1774	1770	1858	1774	1770	1769
Q Serve(g_s), s	8.1	23.1	8.0	2.3	26.2	26.2	12.0	19.9	19.9	15.2	20.2	20.3
Cycle Q Clear(g_c), s	8.1	23.1	8.0	2.3	26.2	26.2	12.0	19.9	19.9	15.2	20.2	20.3
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.01	1.00		0.26
Lane Grp Cap(c), veh/h	359	1321	578	63	538	480	256	404	424	316	464	463
V/C Ratio(X)	0.82	0.74	0.31	0.69	0.92	0.92	0.87	0.92	0.92	0.90	0.84	0.84
Avail Cap(c_a), veh/h	372	1321	578	93	556	496	283	410	430	338	465	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	26.3	21.6	46.3	32.6	32.6	40.7	36.6	36.6	39.1	33.9	34.0
Incr Delay (d2), s/veh	12.8	2.2	0.3	12.4	20.1	21.9	22.8	25.1	24.3	24.3	13.0	13.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	14.5	11.6	3.4	1.4	15.8	14.3	7.5	12.5	13.0	9.5	11.5	11.6
LnGrp Delay(d), s/veh	55.4	28.5	21.9	58.8	52.7	54.5	63.4	61.7	60.8	63.4	46.9	47.1
LnGrp LOS	E	C	C	E	D	D	E	E	E	E	D	D
Approach Vol, veh/h	1445				978			983			1063	
Approach Delay, s/veh	33.1				53.8			61.7			51.4	
Approach LOS	C				D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	30.0	13.8	31.2	20.0	25.0	22.0	23.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	10.0	26.0	15.5	20.5	17.5	18.5					
Max Q Clear Time (g_c+I), s	24.6	9.2	21.5	17.5	22.5	19.5	20.5					
Green Ext Time (p_c), s	0.0	0.7	0.1	2.3	0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay									48.3			
HCM 2010 LOS									D			

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
15: SR-76 & Douglas Dr

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗			↖ ↗	↖ ↗		↖ ↗		↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	650	2275	0	0	1568	265	0	0	0	265	0	443
Future Volume (veh/h)	650	2275	0	0	1568	265	0	0	0	265	0	443
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1900	1863	1900	1863	0	1863
Adj Flow Rate, veh/h	707	2473	0	0	1704	288	0	0	0	288	0	482
Adj No. of Lanes	2	2	0	0	2	1	0	1	0	1	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2	2	0	2
Cap, veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
Arrive On Green	0.14	0.96	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	3442	3632	0	0	3632	1583	0	1863	0	0	0	0
Grp Volume(v), veh/h	707	2473	0	0	1704	288	0	0	0	0	0	0
Grp Sat Flow(s), veh/h/ln	1721	1770	0	0	1770	1583	0	1863	0	0	0	0
Q Serve(g_s), s	25.3	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.3	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap(c), veh/h	484	3382	0	0	2772	1240	0	1	0	0	0	0
V/C Ratio(X)	1.46	0.73	0.00	0.00	0.61	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	484	3382	0	0	2772	1240	0	455	0	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	77.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	218.9	1.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	16.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	296.2	2.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	F	A			A	A						
Approach Vol, veh/h	3180				1992			0				
Approach Delay, s/veh	67.4				0.1			0.0				
Approach LOS	E				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5	6		8				
Phs Duration (G+Y+Rc), s	180.0				31.0	149.0		0.0				
Change Period (Y+Rc), s	8.0				* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	91.9				* 25	60.9		44.0				
Max Q Clear Time (g_c+1), s	20.6				27.3	2.0		0.0				
Green Ext Time (p_c), s	45.1				0.0	26.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay					41.5							
HCM 2010 LOS					D							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
16: Rancho Del Oro Dr & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	75	2105	360	310	1413	120	330	370	315	100	280	55
Future Volume (veh/h)	75	2105	360	310	1413	120	330	370	315	100	280	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	82	2288	391	337	1536	130	359	402	342	109	304	60
Adj No. of Lanes	1	2	1	1	2	1	2	2	0	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	1502	672	210	1592	712	273	450	380	228	696	135
Arrive On Green	0.06	0.28	0.28	0.12	0.45	0.45	0.08	0.25	0.25	0.07	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1807	1524	3442	2948	574
Grp Volume(v), veh/h	82	2288	391	337	1536	130	359	394	350	109	181	183
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1562	1721	1770	1753
Q Serve(g_s), s	8.1	76.4	38.1	21.3	75.9	8.9	14.3	38.7	39.1	5.5	15.6	16.1
Cycle Q Clear(g_c), s	8.1	76.4	38.1	21.3	75.9	8.9	14.3	38.7	39.1	5.5	15.6	16.1
Prop In Lane	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.98	1.00	0.00	0.33	0.00
Lane Grp Cap(c), veh/h	165	1502	672	210	1592	712	273	441	389	228	418	414
V/C Ratio(X)	0.50	1.52	0.58	1.61	0.96	0.18	1.31	0.89	0.90	0.48	0.43	0.44
Avail Cap(c_a), veh/h	168	1502	672	210	1592	712	273	495	436	229	472	467
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.13	0.13	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.3	64.4	50.7	79.3	48.1	29.7	82.8	65.3	65.4	81.0	58.5	58.7
Incr Delay (d2), s/veh	0.3	235.8	0.5	278.7	6.3	0.2	164.5	17.1	20.0	1.5	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	14.0	86.6	16.8	26.7	38.5	3.9	13.0	21.0	19.1	2.7	7.8	7.9
LnGrp Delay(d), s/veh	80.6	300.2	51.2	358.1	54.4	29.8	247.3	82.3	85.4	82.6	59.2	59.4
LnGrp LOS	F	F	D	F	D	C	F	F	F	F	E	E
Approach Vol, veh/h	2761				2003			1103				473
Approach Delay, s/veh	258.4				103.9			137.0				64.7
Approach LOS	F				F			F				E
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	87.0	84.4	20.0	48.6	22.4	89.0	17.6	50.9				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (Gmax), s	70.9	* 14	48.0	* 17	75.2	* 12	50.3					
Max Q Clear Time (g_c+1), s	23.3	78.4	16.3	18.1	10.1	77.9	7.5	41.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.1	0.0	0.1	3.3				
Intersection Summary												
HCM 2010 Ctrl Delay					174.0							
HCM 2010 LOS					F							
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
17: Old Grove Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	1981	300	188	1388	15	245	280	220	10	115	160
Future Volume (veh/h)	240	1981	300	188	1388	15	245	280	220	10	115	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	261	2153	326	204	1509	16	266	304	239	11	125	174
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1914	845	171	1771	19	309	362	277	54	233	208
Arrive On Green	0.14	0.54	0.54	0.10	0.49	0.49	0.09	0.19	0.19	0.03	0.13	0.13
Sat Flow, veh/h	1774	3539	1563	1774	3588	38	3442	1898	1451	1774	1770	1580
Grp Volume(v), veh/h	261	2153	326	204	744	781	266	283	260	11	125	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1563	1774	1770	1856	1721	1770	1579	1774	1770	1580
Q Serve(g_s), s	25.8	97.3	21.8	17.3	66.1	66.2	13.7	27.7	28.7	1.1	11.9	19.3
Cycle Q Clear(g_c), s	25.8	97.3	21.8	17.3	66.1	66.2	13.7	27.7	28.7	1.1	11.9	19.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.92	1.00		1.00
Lane Grp Cap(c), veh/h	254	1914	845	171	873	916	309	338	301	54	233	208
V/C Ratio(X)	1.03	1.12	0.39	1.20	0.85	0.85	0.86	0.84	0.86	0.20	0.54	0.84
Avail Cap(c_a), veh/h	254	1914	845	171	873	916	402	433	386	128	354	316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.62	0.62	0.62	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.1	41.3	24.0	81.3	39.8	39.9	80.8	70.1	70.5	85.1	73.0	76.3
Incr Delay (d2), s/veh	24.1	56.9	0.1	118.2	6.7	6.4	14.0	10.9	14.9	1.8	1.9	11.3
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	62.5	9.4	14.1	33.9	35.5	7.1	14.6	13.8	0.6	6.0	9.1
LnGrp Delay(d),s/veh	101.3	98.3	24.1	199.6	46.5	46.3	94.8	81.1	85.4	86.9	74.9	87.6
LnGrp LOS	F	F	C	F	D	D	F	F	F	F	E	F
Approach Vol, veh/h	2740			1729			809			310		
Approach Delay, s/veh	89.7			64.5			87.0			82.4		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	105.3	21.8	29.8	31.5	96.8	11.2	40.5				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.1	* 5.7	8.0	* 5.7	6.1				
Max Green Setting (G_max), s	11.8	80.2	* 21	36.0	* 26	71.7	* 13	44.0				
Max Q Clear Time (g_c+maxg), s	109.3	99.3	15.7	21.3	27.8	68.2	3.1	30.7				
Green Ext Time (p_c), s	0.0	0.0	0.4	1.5	0.0	2.7	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay	81.1											
HCM 2010 LOS	F											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
18: Frazee Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	2006	155	150	1436	75	85	155	185	45	75	35
Future Volume (veh/h)	50	2006	155	150	1436	75	85	155	185	45	75	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	2180	168	163	1561	82	92	168	201	49	82	38
Adj No. of Lanes	1	2	1	1	2	1	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	1947	983	141	2008	983	246	304	255	210	284	332
Arrive On Green	0.06	0.55	0.55	0.08	0.57	0.57	0.07	0.16	0.16	0.06	0.15	0.15
Sat Flow, veh/h	1774	3539	1582	1774	3539	1563	3442	1863	1562	3442	1863	1535
Grp Volume(v), veh/h	54	2180	168	163	1561	82	92	168	201	49	82	38
Grp Sat Flow(s),veh/h/ln	1774	1770	1582	1774	1770	1563	1721	1863	1562	1721	1863	1535
Q Serve(g_s), s	5.3	99.0	8.1	14.3	61.5	3.7	4.6	14.9	22.2	2.4	7.0	3.6
Cycle Q Clear(g_c), s	5.3	99.0	8.1	14.3	61.5	3.7	4.6	14.9	22.2	2.4	7.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	1947	983	141	2008	983	246	304	255	210	284	332
V/C Ratio(X)	0.49	1.12	0.17	1.16	0.78	0.08	0.37	0.55	0.79	0.23	0.29	0.11
Avail Cap(c_a), veh/h	118	1947	983	141	2008	983	249	455	382	229	445	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.6	40.5	14.4	82.8	30.2	13.1	79.7	69.3	72.4	80.5	67.6	56.9
Incr Delay (d2), s/veh	0.3	54.7	0.0	124.0	3.0	0.2	0.9	1.6	6.4	0.6	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	62.9	3.5	11.9	30.8	1.6	2.2	7.8	10.1	1.2	3.7	1.5
LnGrp Delay(d),s/veh	81.9	95.2	14.5	206.9	33.2	13.3	80.7	70.9	78.8	81.1	68.2	57.1
LnGrp LOS	F	F	B	F	C	B	F	E	E	F	E	E
Approach Vol, veh/h	2402			1806			461			169		
Approach Delay, s/veh	89.3			48.0			76.3			69.4		
Approach LOS	F			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	107.0	18.6	34.4	16.9	110.1	16.7	36.3				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	7.0	* 5.7	8.0	* 5.7	7.0				
Max Green Setting (Gmax), s	11.4	83.3	* 13	43.0	* 12	85.6	* 12	44.0				
Max Q Clear Time (g_c+maxg), s	101.0	6.6	9.0	7.3	63.5	4.4	24.2					
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	13.3	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	71.9											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
19: College Blvd & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	806	1600	80	345	1140	821	70	1156	370	641	1039	486
Future Volume (veh/h)	806	1600	80	345	1140	821	70	1156	370	641	1039	486
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	876	1739	87	375	1239	892	76	1257	402	697	1129	528
Adj No. of Lanes	2	3	1	2	3	1	2	2	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	541	1469	561	312	1130	566	224	901	280	465	1450	884
Arrive On Green	0.16	0.29	0.29	0.09	0.22	0.22	0.07	0.34	0.34	0.14	0.41	0.41
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	2649	823	3442	3539	1550
Grp Volume(v), veh/h	876	1739	87	375	1239	892	76	827	832	697	1129	528
Grp Sat Flow(s), veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1703	1721	1770	1550
Q Serve(g_s), s	28.3	52.0	6.8	16.3	40.0	40.0	3.8	61.2	61.2	24.3	49.8	40.3
Cycle Q Clear(g_c), s	28.3	52.0	6.8	16.3	40.0	40.0	3.8	61.2	61.2	24.3	49.8	40.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	541	1469	561	312	1130	566	224	602	579	465	1450	884
V/C Ratio(X)	1.62	1.18	0.16	1.20	1.10	1.58	0.34	1.38	1.44	1.50	0.78	0.60
Avail Cap(c_a), veh/h	541	1469	561	312	1130	566	229	602	579	465	1450	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.8	64.0	39.7	81.8	70.0	57.8	80.4	59.4	59.4	77.8	46.0	25.6
Incr Delay (d2), s/veh	287.0	89.9	0.6	118.0	57.1	268.1	0.9	179.1	206.1	236.1	2.8	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	36.6	3.0	12.9	24.7	70.2	1.8	59.9	61.9	26.8	24.9	17.4	
LnGrp Delay(d), s/veh	362.8	153.9	40.3	199.8	127.1	326.0	81.3	238.5	265.5	314.0	48.8	26.7
LnGrp LOS	F	F	D	F	F	F	F	F	F	F	D	C
Approach Vol, veh/h	2702			2506			1735			2354		
Approach Delay, s/veh	218.0			208.8			244.6			122.4		
Approach LOS	F			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.0	17.4	80.6	34.0	48.0	30.0	68.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	11.8	52.0	* 12	73.5	* 28	40.0	* 24	61.2				
Max Q Clear Time (g_c+Q), s	10.3	54.0	5.8	51.8	30.3	42.0	26.3	63.2				
Green Ext Time (p_c), s	0.0	0.0	0.1	11.2	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				196.3								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
20: N. Santa Fe Ave & SR-76

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	20	2115	576	500	1630	20	676	20	890	5	5	5
Future Volume (veh/h)	20	2115	576	500	1630	20	676	20	890	5	5	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	22	2299	626	543	1772	22	751	0	967	5	5	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1582	1059	503	1977	25	808	0	587	62	30	30
Arrive On Green	0.04	0.45	0.45	0.15	0.55	0.55	0.23	0.00	0.23	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1562	3442	3579	44	3548	0	1563	1774	846	846
Grp Volume(v), veh/h	22	2299	626	543	875	919	751	0	967	5	0	10
Grp Sat Flow(s), veh/h/ln	1774	1770	1562	1721	1770	1854	1774	0	1563	1774	0	1691
Q Serve(g_s), s	2.2	80.5	39.1	26.3	78.7	79.3	37.3	0.0	41.0	0.5	0.0	1.0
Cycle Q Clear(g_c), s	2.2	80.5	39.1	26.3	78.7	79.3	37.3	0.0	41.0	0.5	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	72	1582	1059	503	978	1024	808	0	587	62	0	59
V/C Ratio(X)	0.30	1.45	0.59	1.08	0.89	0.90	0.93	0.00	1.65	0.08	0.00	0.17
Avail Cap(c_a), veh/h	108	1582	1059	503	978	1024	808	0	587	118	0	113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.9	49.8	15.9	76.8	35.7	35.8	68.1	0.0	56.5	84.0	0.0	84.3
Incr Delay (d2), s/veh	2.3	207.5	2.4	63.4	12.4	12.2	17.0	0.0	298.5	0.5	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	1.1	84.9	29.4	16.9	41.8	43.8	20.3	0.0	77.9	0.3	0.0	0.5
LnGrp Delay(d), s/veh	86.2	257.2	18.3	140.2	48.1	48.0	85.0	0.0	355.0	84.6	0.0	85.6
LnGrp LOS	F	F	B	F	D	D	F		F	F		F
Approach Vol, veh/h	2947			2337			1718			15		
Approach Delay, s/veh	205.2			69.4			237.0			85.2		
Approach LOS	F			E			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	88.5		12.4	13.0	107.4		47.1				
Change Period (Y+Rc), s	5.7	8.0		6.1	* 5.7	8.0		6.1				
Max Green Setting (Gmax), s	11.8	74.8		12.0	* 11	90.1		41.0				
Max Q Clear Time (g_c+Q), s	10.3	82.5		3.0	4.2	81.3		43.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				167.5								
HCM 2010 LOS				F								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
21: Melrose Dr & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	2163	463	45	1465	40	285	10	95	60	10	130
Future Volume (veh/h)	130	2163	463	45	1465	40	285	10	95	60	10	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	2351	503	49	1592	43	310	11	103	65	11	141
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	3101	1105	227	3070	1053	304	404	285	239	337	265
Arrive On Green	0.07	0.61	0.61	0.07	0.60	0.60	0.09	0.11	0.11	0.07	0.10	0.10
Sat Flow, veh/h	3442	5085	1583	3442	5085	1563	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	141	2351	503	49	1592	43	310	11	103	65	11	141
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1563	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	7.1	60.4	25.3	2.4	32.5	1.7	15.9	0.5	10.3	3.2	0.5	14.6
Cycle Q Clear(g_c), s	7.1	60.4	25.3	2.4	32.5	1.7	15.9	0.5	10.3	3.2	0.5	14.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	3101	1105	227	3070	1053	304	404	285	239	337	265
V/C Ratio(X)	0.57	0.76	0.46	0.22	0.52	0.04	1.02	0.03	0.36	0.27	0.03	0.53
Avail Cap(c_a), veh/h	249	3101	1105	249	3070	1053	304	1001	552	249	944	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	25.5	12.0	79.6	20.6	9.9	82.1	70.8	64.7	79.4	73.9	68.5
Incr Delay (d2), s/veh	3.0	1.8	1.4	0.5	0.6	0.1	56.7	0.0	0.8	0.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	28.6	11.4	1.2	15.4	0.7	10.0	0.2	4.6	1.6	0.3	6.5
LnGrp Delay(d),s/veh	83.8	27.3	13.4	80.1	21.2	10.0	138.9	70.9	65.5	80.0	73.9	70.1
LnGrp LOS	F	C	B	F	C	A	F	E	E	F	E	E
Approach Vol, veh/h	2995			1684			424			217		
Approach Delay, s/veh	27.6			22.6			119.3			73.3		
Approach LOS	C			C			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	21.6	23.6	18.7	116.1	18.2	27.0					
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.4	* 5.7	7.5	* 5.7	6.4				
Max Green Setting (Gmax), s	13	77.8	* 16	48.0	* 13	77.8	* 13	50.9				
Max Q Clear Time (g_c+1/4), s	13.4	62.4	17.9	16.6	9.1	34.5	5.2	12.3				
Green Ext Time (p_c), s	0.0	13.9	0.0	0.5	0.1	15.1	0.1	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				35.2								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
22: E. Vista Way/Old River Rd & SR-76

North River Farms
06/27/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1763	335	636	985	10	250	30	421	30	35	75
Future Volume (veh/h)	45	1763	335	636	985	10	250	30	421	30	35	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	1916	364	691	1071	11	296	0	458	33	38	82
Adj No. of Lanes	1	3	1	2	3	0	2	0	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1982	617	697	2725	28	384	0	492	70	81	131
Arrive On Green	0.07	0.39	0.39	0.20	0.53	0.53	0.11	0.00	0.11	0.08	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3442	5190	53	3548	0	1583	846	974	1583
Grp Volume(v), veh/h	49	1916	364	691	699	383	296	0	458	71	0	82
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1853	1774	0	1583	1820	0	1583
Q Serve(g_s), s	3.2	44.3	21.9	24.0	14.8	14.8	9.7	0.0	13.0	4.5	0.0	6.0
Cycle Q Clear(g_c), s	3.2	44.3	21.9	24.0	14.8	14.8	9.7	0.0	13.0	4.5	0.0	6.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.46		1.00
Lane Grp Cap(c), veh/h	119	1982	617	697	1780	973	384	0	492	151	0	131
V/C Ratio(X)	0.41	0.97	0.59	0.99	0.39	0.39	0.77	0.00	0.93	0.47	0.00	0.63
Avail Cap(c_a), veh/h	148	1982	617	697	1780	973	384	0	492	152	0	132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.7	35.9	29.0	47.7	17.0	17.1	52.0	0.0	40.1	52.5	0.0	53.2
Incr Delay (d2), s/veh	2.3	13.8	4.1	31.9	0.7	1.2	9.2	0.0	24.5	2.3	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	23.3	10.2	14.5	7.1	7.9	5.3	0.0	18.1	2.3	0.0	3.0
LnGrp Delay(d),s/veh	56.0	49.6	33.1	79.6	17.7	18.2	61.3	0.0	64.6	54.8	0.0	62.1
LnGrp LOS	E	D	C	E	B	B	E		E	D		E
Approach Vol, veh/h	2329			1773			754			153		
Approach Delay, s/veh	47.2			41.9			63.3			58.7		
Approach LOS	D			D			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.0	54.3		16.3	13.7	70.5		19.4				
Change Period (Y+Rc), s	5.7	7.5		6.4	* 5.7	7.5		6.4				
Max Green Setting (Gmax), s	24	46.7		10.0	* 10	61.0		13.0				
Max Q Clear Time (g_c+1/4), s	24.5	46.3		8.0	5.2	16.8		15.0				
Green Ext Time (p_c), s	0.0	0.4		0.1	0.0	9.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				48.1								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
23: College Blvd & Frazee Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↱	↱	↱
Traffic Volume (veh/h)	175	105	140	25	90	45	220	1076	55	55	1006	225
Future Volume (veh/h)	175	105	140	25	90	45	220	1076	55	55	1006	225
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	167	152	27	98	49	239	1170	60	60	1093	245
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	258	215	147	154	129	282	1729	748	85	1335	597
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.16	0.49	0.49	0.05	0.38	0.38
Sat Flow, veh/h	1774	1863	1553	1774	1863	1560	1774	3539	1532	1774	3539	1582
Grp Volume(v), veh/h	152	167	152	27	98	49	239	1170	60	60	1093	245
Grp Sat Flow(s), veh/h/ln	1774	1863	1553	1774	1863	1560	1774	1770	1532	1774	1770	1582
Q Serve(g_s), s	6.0	6.3	6.9	1.1	3.8	2.2	9.7	18.8	1.5	2.5	20.7	8.5
Cycle Q Clear(g_c), s	6.0	6.3	6.9	1.1	3.8	2.2	9.7	18.8	1.5	2.5	20.7	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	258	215	147	154	129	282	1729	748	85	1335	597
V/C Ratio(X)	0.62	0.65	0.71	0.18	0.64	0.38	0.85	0.68	0.08	0.71	0.82	0.41
Avail Cap(c_a), veh/h	430	452	376	430	452	378	346	1902	823	146	1501	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	30.3	30.5	31.7	33.0	32.3	30.3	14.5	10.1	34.8	20.8	17.0
Incr Delay (d2), s/veh	2.5	2.7	4.2	0.6	4.3	1.8	14.8	0.9	0.0	10.3	3.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	18.1	3.4	3.2	0.5	2.1	1.0	5.9	9.3	0.7	1.5	10.6	3.8
LnGrp Delay(d), s/veh	32.7	33.0	34.8	32.3	37.3	34.1	45.2	15.4	10.1	45.1	24.2	17.5
LnGrp LOS	C	C	C	C	D	C	D	B	B	D	C	B
Approach Vol, veh/h	471			174			1469			1398		
Approach Delay, s/veh	33.5			35.6			20.0			23.9		
Approach LOS	C			D			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s/8.0	40.8			14.8	16.3	32.5		10.6				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 39.9	39.9			18.0	14.5	31.5		18.0				
Max Q Clear Time (g_c+1/3), s 20.8	20.8			8.9	11.7	22.7		5.8				
Green Ext Time (p_c), s 0.0	0.0	8.8		1.3	0.2	5.3		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				24.1								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

Year 2035 + Proj PM (No Melrose)
25: Main Access & N. River Rd

North River Farms
06/27/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↰	↰	↰	↱	↱	↱	↱	↱
Traffic Volume (veh/h)	76	1031	118	42	735	25	61	0	22	13	0	38
Future Volume (veh/h)	76	1031	118	42	735	25	61	0	22	13	0	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	1121	128	46	799	27	66	0	24	14	0	41
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	1692	757	90	1598	715	306	0	166	321	0	166
Arrive On Green	0.08	0.48	0.48	0.05	0.45	0.45	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1360	0	1583	1381	0	1583
Grp Volume(v), veh/h	83	1121	128	46	799	27	66	0	24	14	0	41
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1360	0	1583	1381	0	1583
Q Serve(g_s), s	1.7	8.9	1.7	0.9	5.9	0.4	1.7	0.0	0.5	0.3	0.0	0.9
Cycle Q Clear(g_c), s	1.7	8.9	1.7	0.9	5.9	0.4	2.6	0.0	0.5	0.9	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1692	757	90	1598	715	306	0	166	321	0	166
V/C Ratio(X)	0.60	0.66	0.17	0.51	0.50	0.04	0.22	0.00	0.14	0.04	0.00	0.25
Avail Cap(c_a), veh/h	279	2255	1009	240	2178	974	827	0	773	850	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	7.3	5.5	17.1	7.2	5.6	16.4	0.0	15.0	15.4	0.0	15.2
Incr Delay (d2), s/veh	4.2	0.4	0.1	4.4	0.2	0.0	0.4	0.0	0.4	0.1	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	4.3	0.7	0.6	2.8	0.2	0.7	0.0	0.2	0.1	0.0	0.4
LnGrp Delay(d), s/veh	20.6	7.8	5.6	21.4	7.4	5.7	16.7	0.0	15.4	15.4	0.0	15.9
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h	1332			872			90			55		
Approach Delay, s/veh	8.4			8.1			16.4			15.8		
Approach LOS	A			A			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s/6.4	22.1			8.4	7.4	21.2		8.4				
Change Period (Y+Rc), s 4.5	4.5			4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s 23.5	23.5			18.0	5.8	22.7		18.0				
Max Q Clear Time (g_c+1/3), s 10.9	10.9			2.9	3.7	7.9		4.6				
Green Ext Time (p_c), s 0.0	0.0	6.7		0.1	0.0	5.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				8.8								
HCM 2010 LOS				A								
Notes												

HCM 2010 Signalized Intersection Summary
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Synchro 10 Report

APPENDIX R

INTERSECTION ANALYSIS WORKSHEETS – YEAR 2035 WITHOUT PROJECT (WITHOUT MELROSE DRIVE EXTENSION) – PROJECT ACCESS INTERSECTIONS

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P AM w/o Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	35	2.0	0.064	5.8	LOS A	0.3	6.5	0.58	0.51	32.7
8	T1	1	2.0	0.064	5.8	LOS A	0.3	6.5	0.58	0.51	32.6
18	R2	9	2.0	0.064	5.8	LOS A	0.3	6.5	0.58	0.51	31.8
Approach		45	2.0	0.064	5.8	LOS A	0.3	6.5	0.58	0.51	32.5
East: N. River Rd											
1	L2	3	2.0	0.627	10.8	LOS B	6.2	157.8	0.49	0.26	32.4
6	T1	745	2.0	0.627	10.8	LOS B	6.2	157.8	0.49	0.26	32.3
16	R2	25	2.0	0.627	10.8	LOS B	6.2	157.8	0.49	0.26	31.5
Approach		773	2.0	0.627	10.8	LOS B	6.2	157.8	0.49	0.26	32.3
North: E Access											
7	L2	20	2.0	0.210	9.8	LOS A	0.9	23.2	0.72	0.72	32.3
4	T1	1	2.0	0.210	9.8	LOS A	0.9	23.2	0.72	0.72	32.2
14	R2	89	2.0	0.210	9.8	LOS A	0.9	23.2	0.72	0.72	31.4
Approach		110	2.0	0.210	9.8	LOS A	0.9	23.2	0.72	0.72	31.5
West: N. River Rd											
5	L2	47	2.0	0.450	7.2	LOS A	3.9	99.6	0.21	0.06	33.9
2	T1	530	2.0	0.450	7.2	LOS A	3.9	99.6	0.21	0.06	33.9
12	R2	14	2.0	0.450	7.2	LOS A	3.9	99.6	0.21	0.06	32.9
Approach		591	2.0	0.450	7.2	LOS A	3.9	99.6	0.21	0.06	33.9
All Vehicles		1518	2.0	0.627	9.2	LOS A	6.2	157.8	0.40	0.22	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

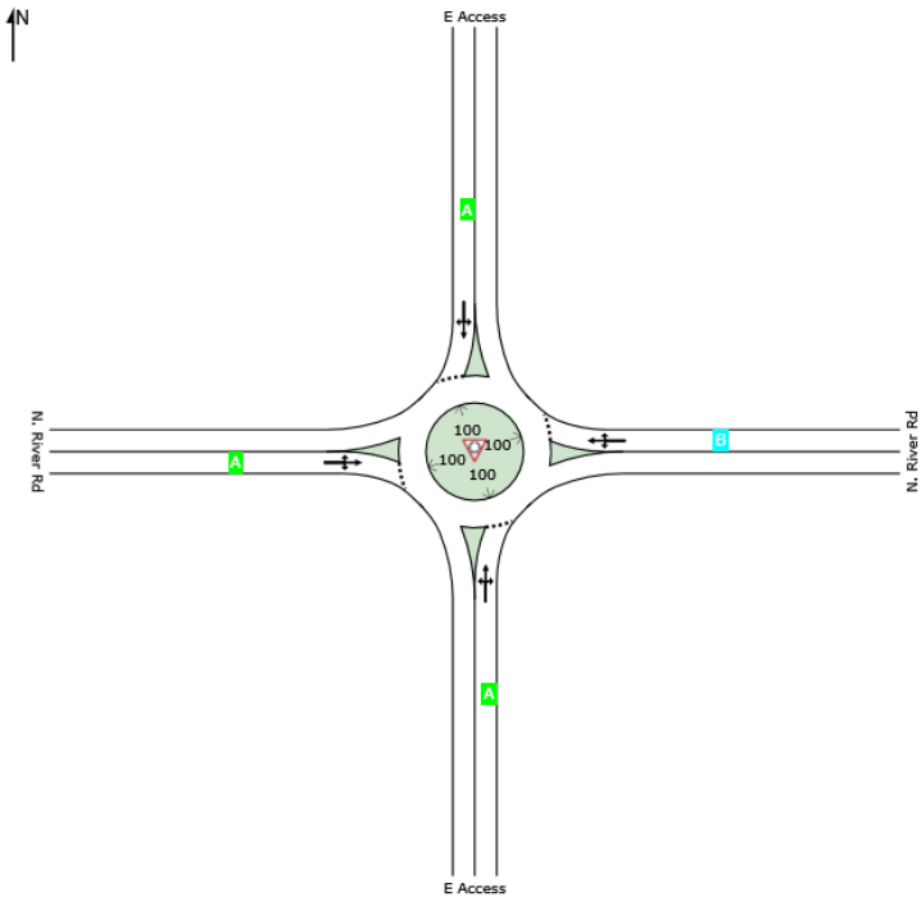
Lane Level of Service

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P AM w/o Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P AM w/o Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	47	2.0	0.113	7.6	LOS A	0.5	11.7	0.66	0.65	32.0
8	T1	1	2.0	0.113	7.6	LOS A	0.5	11.7	0.66	0.65	32.0
18	R2	17	2.0	0.113	7.6	LOS A	0.5	11.7	0.66	0.65	31.1
Approach		65	2.0	0.113	7.6	LOS A	0.5	11.7	0.66	0.65	31.8
East: N. River Rd											
1	L2	8	2.0	0.905	26.4	LOS D	23.1	587.9	1.00	0.51	26.5
6	T1	1114	2.0	0.905	26.4	LOS D	23.1	587.9	1.00	0.51	26.5
16	R2	8	2.0	0.905	26.4	LOS D	23.1	587.9	1.00	0.51	25.9
Approach		1129	2.0	0.905	26.4	LOS D	23.1	587.9	1.00	0.51	26.5
North: W Access											
7	L2	17	2.0	0.293	23.9	LOS C	1.3	32.1	0.88	0.89	26.7
4	T1	1	2.0	0.293	23.9	LOS C	1.3	32.1	0.88	0.89	26.7
14	R2	48	2.0	0.293	23.9	LOS C	1.3	32.1	0.88	0.89	26.1
Approach		66	2.0	0.293	23.9	LOS C	1.3	32.1	0.88	0.89	26.3
West: N. River Rd											
5	L2	20	2.0	0.577	9.3	LOS A	6.3	160.9	0.27	0.09	33.1
2	T1	715	2.0	0.577	9.3	LOS A	6.3	160.9	0.27	0.09	33.0
12	R2	21	2.0	0.577	9.3	LOS A	6.3	160.9	0.27	0.09	32.1
Approach		755	2.0	0.577	9.3	LOS A	6.3	160.9	0.27	0.09	33.0
All Vehicles		2016	2.0	0.905	19.3	LOS C	23.1	587.9	0.71	0.37	28.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

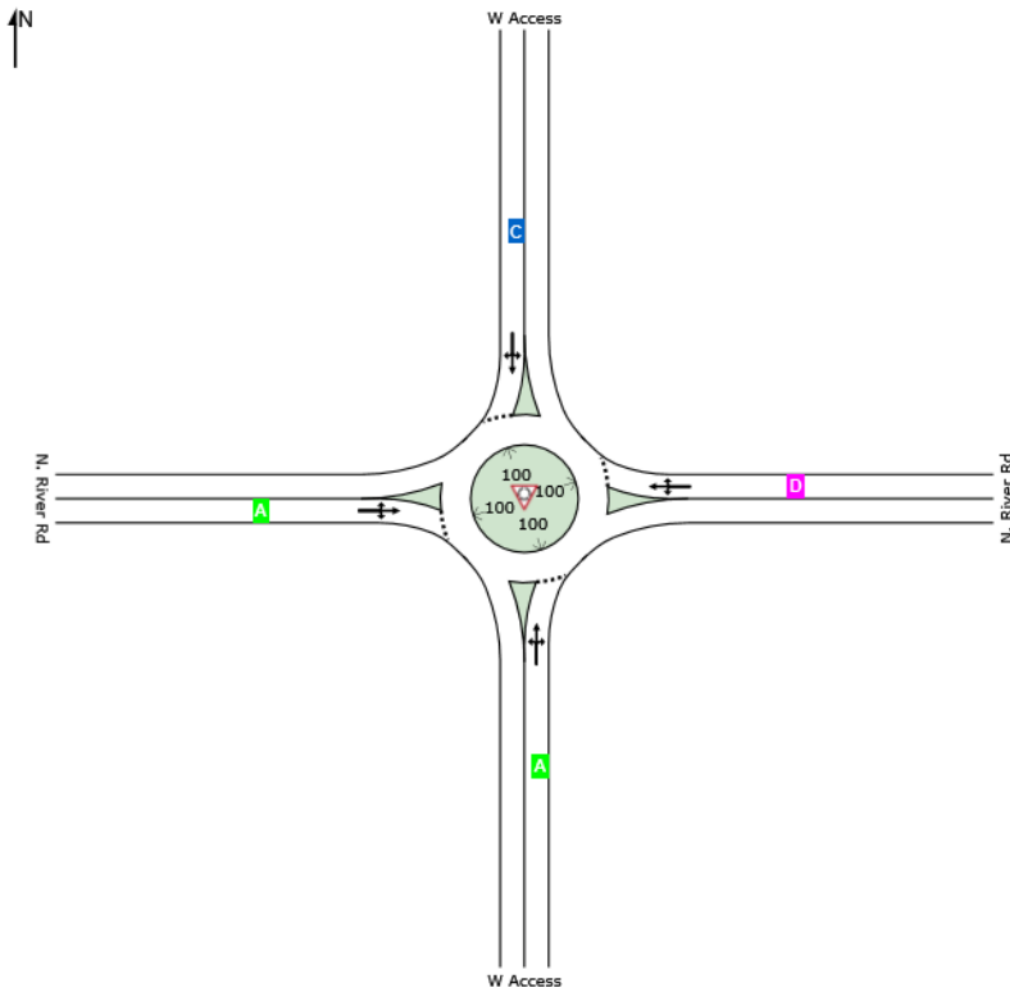
Lane Level of Service

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P AM w/o Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	D	C	A	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	628	37	13	893	8	87	0	31	20	0	59
Future Volume (veh/h)	25	628	37	13	893	8	87	0	31	20	0	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	683	40	14	971	9	95	0	34	22	0	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1597	714	32	1545	691	354	0	236	382	0	236
Arrive On Green	0.03	0.45	0.45	0.02	0.44	0.44	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1332	0	1583	1369	0	1583
Grp Volume(v), veh/h	27	683	40	14	971	9	95	0	34	22	0	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1332	0	1583	1369	0	1583
Q Serve(g_s), s	0.5	4.6	0.5	0.3	7.5	0.1	2.4	0.0	0.7	0.5	0.0	1.3
Cycle Q Clear(g_c), s	0.5	4.6	0.5	0.3	7.5	0.1	3.7	0.0	0.7	1.2	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	1597	714	32	1545	691	354	0	236	382	0	236
V/C Ratio(X)	0.46	0.43	0.06	0.43	0.63	0.01	0.27	0.00	0.14	0.06	0.00	0.27
Avail Cap(c_a), veh/h	251	2353	1052	251	2353	1052	834	0	806	875	0	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	6.6	5.5	17.2	7.7	5.6	15.0	0.0	13.1	13.6	0.0	13.3
Incr Delay (d2), s/veh	5.6	0.2	0.0	9.0	0.4	0.0	0.4	0.0	0.3	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.2	0.2	0.2	3.7	0.1	0.9	0.0	0.3	0.2	0.0	0.6
LnGrp Delay(d),s/veh	22.4	6.8	5.5	26.1	8.2	5.7	15.4	0.0	13.4	13.7	0.0	14.0
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		750			994			129			86	
Approach Delay, s/veh		7.3			8.4			14.9			13.9	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	20.5		9.8	5.7	19.9		9.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	2.3	6.6		3.3	2.5	9.5		5.7				
Green Ext Time (p_c), s	0.0	4.5		0.3	0.0	5.9		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			8.6									
HCM 2010 LOS			A									

MOVEMENT SUMMARY

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P PM w/o Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: E Access											
3	L2	23	2.0	0.067	9.1	LOS A	0.3	6.8	0.71	0.71	31.2
8	T1	1	2.0	0.067	9.1	LOS A	0.3	6.8	0.71	0.71	31.2
18	R2	5	2.0	0.067	9.1	LOS A	0.3	6.8	0.71	0.71	30.4
Approach		29	2.0	0.067	9.1	LOS A	0.3	6.8	0.71	0.71	31.1
East: N. River Rd											
1	L2	11	2.0	0.533	9.0	LOS A	4.4	112.8	0.46	0.26	33.2
6	T1	604	2.0	0.533	9.0	LOS A	4.4	112.8	0.46	0.26	33.2
16	R2	27	2.0	0.533	9.0	LOS A	4.4	112.8	0.46	0.26	32.2
Approach		642	2.0	0.533	9.0	LOS A	4.4	112.8	0.46	0.26	33.1
North: E Access											
7	L2	27	2.0	0.216	8.3	LOS A	1.0	24.8	0.68	0.68	33.0
4	T1	1	2.0	0.216	8.3	LOS A	1.0	24.8	0.68	0.68	32.9
14	R2	109	2.0	0.216	8.3	LOS A	1.0	24.8	0.68	0.68	32.0
Approach		137	2.0	0.216	8.3	LOS A	1.0	24.8	0.68	0.68	32.2
West: N. River Rd											
5	L2	77	2.0	0.725	13.4	LOS B	10.7	271.7	0.47	0.19	31.1
2	T1	814	2.0	0.725	13.4	LOS B	10.7	271.7	0.47	0.19	31.0
12	R2	45	2.0	0.725	13.4	LOS B	10.7	271.7	0.47	0.19	30.2
Approach		936	2.0	0.725	13.4	LOS B	10.7	271.7	0.47	0.19	31.0
All Vehicles		1745	2.0	0.725	11.3	LOS B	10.7	271.7	0.48	0.26	31.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

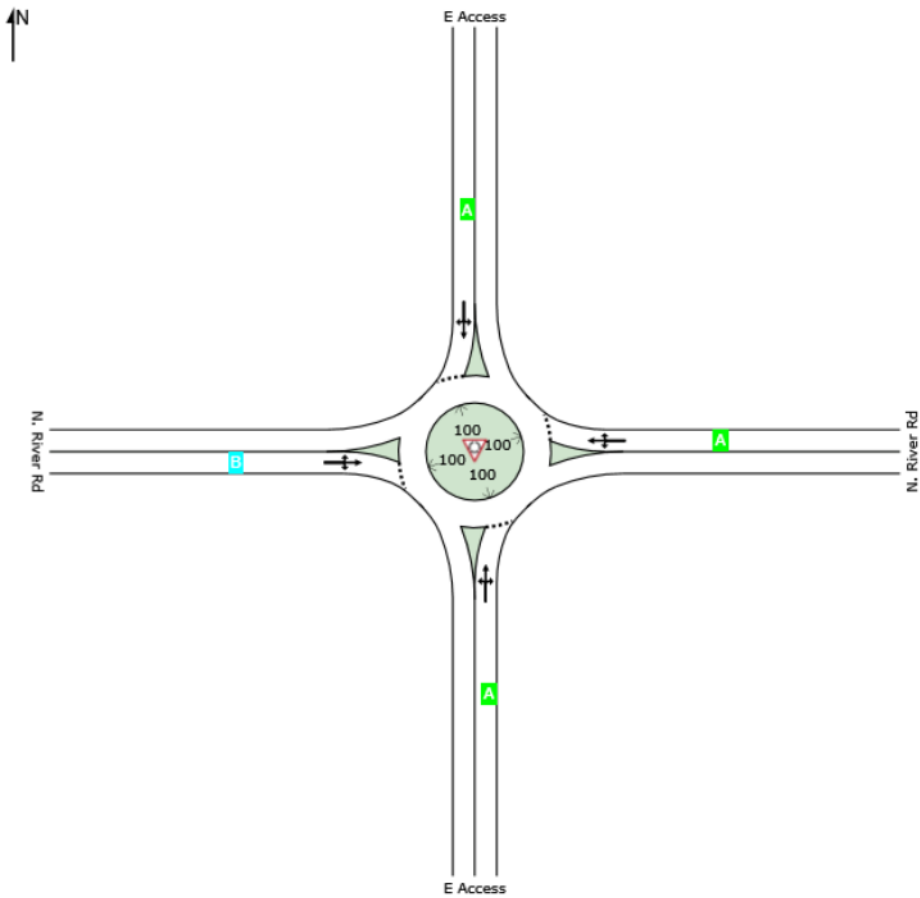
Lane Level of Service

 **Site: 6 [6. N. River Rd / Wilshire Rd]**

2035+P PM w/o Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

MOVEMENT SUMMARY

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P PM w/o Melrose Dr
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: W Access											
3	L2	30	2.0	0.226	25.2	LOS D	0.9	23.5	0.89	0.89	25.8
8	T1	1	2.0	0.226	25.2	LOS D	0.9	23.5	0.89	0.89	25.7
18	R2	12	2.0	0.226	25.2	LOS D	0.9	23.5	0.89	0.89	25.2
Approach		43	2.0	0.226	25.2	LOS D	0.9	23.5	0.89	0.89	25.6
East: N. River Rd											
1	L2	22	2.0	0.744	14.7	LOS B	10.3	262.7	0.70	0.39	30.7
6	T1	860	2.0	0.744	14.7	LOS B	10.3	262.7	0.70	0.39	30.6
16	R2	22	2.0	0.744	14.7	LOS B	10.3	262.7	0.70	0.39	29.8
Approach		903	2.0	0.744	14.7	LOS B	10.3	262.7	0.70	0.39	30.6
North: W Access											
7	L2	11	2.0	0.106	10.6	LOS B	0.4	11.3	0.74	0.74	31.8
4	T1	1	2.0	0.106	10.6	LOS B	0.4	11.3	0.74	0.74	31.7
14	R2	30	2.0	0.106	10.6	LOS B	0.4	11.3	0.74	0.74	30.9
Approach		42	2.0	0.106	10.6	LOS B	0.4	11.3	0.74	0.74	31.1
West: N. River Rd											
5	L2	61	2.0	1.101	73.9	LOS F	180.5	4585.2	1.00	0.67	17.0
2	T1	1309	2.0	1.101	73.9	LOS F	180.5	4585.2	1.00	0.67	17.0
12	R2	61	2.0	1.101	73.9	LOS F	180.5	4585.2	1.00	0.67	16.8
Approach		1430	2.0	1.101	73.9	LOS F	180.5	4585.2	1.00	0.67	17.0
All Vehicles		2420	2.0	1.101	49.8	LOS E	180.5	4585.2	0.88	0.57	20.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LANE LEVEL OF SERVICE

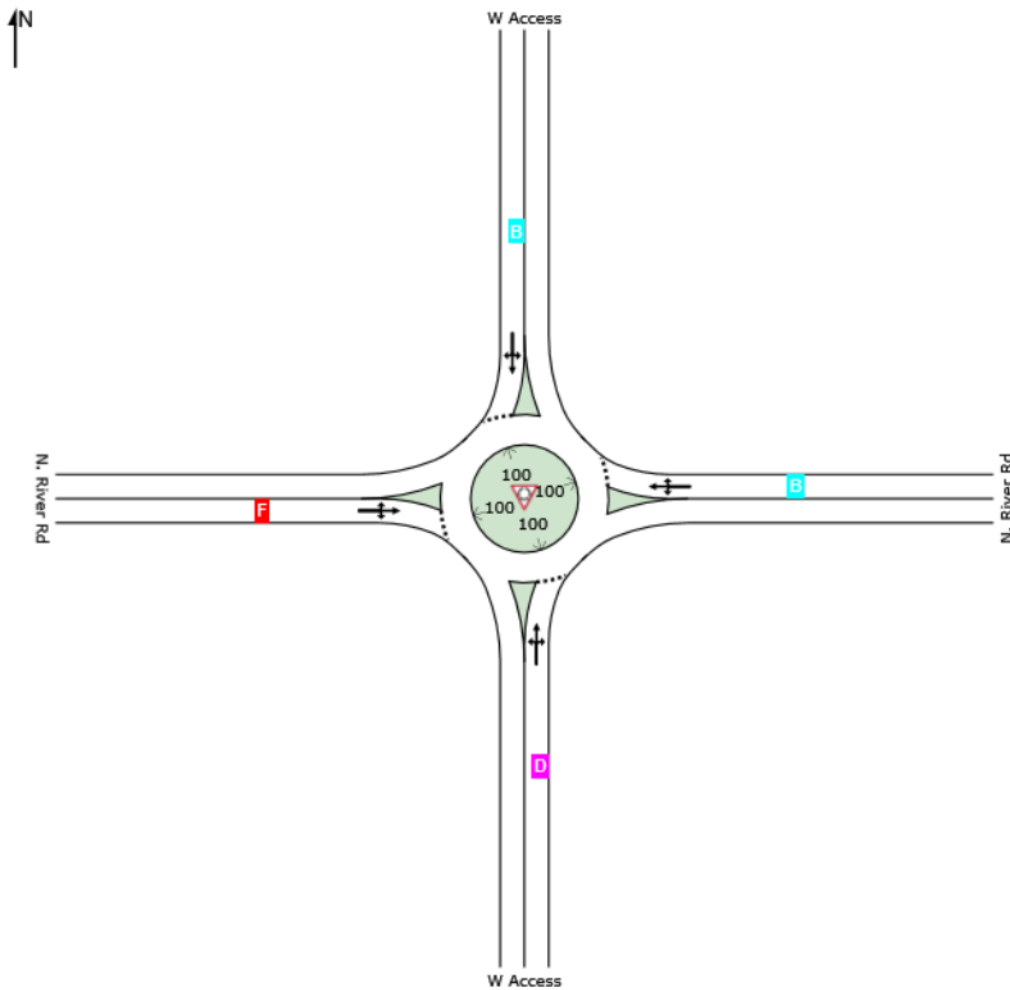
Lane Level of Service

 **Site: 24 [24. N. River Rd / W. Access]**

2035+P PM w/o Melrose Dr
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	D	B	B	F	E



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	76	1031	118	42	735	25	61	0	22	13	0	38						
Future Volume (veh/h)	76	1031	118	42	735	25	61	0	22	13	0	38						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	83	1121	128	46	799	27	66	0	24	14	0	41						
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	138	1692	757	90	1598	715	306	0	166	321	0	166						
Arrive On Green	0.08	0.48	0.48	0.05	0.45	0.45	0.10	0.00	0.10	0.10	0.00	0.10						
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1360	0	1583	1381	0	1583						
Grp Volume(v), veh/h	83	1121	128	46	799	27	66	0	24	14	0	41						
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1360	0	1583	1381	0	1583						
Q Serve(g_s), s	1.7	8.9	1.7	0.9	5.9	0.4	1.7	0.0	0.5	0.3	0.0	0.9						
Cycle Q Clear(g_c), s	1.7	8.9	1.7	0.9	5.9	0.4	2.6	0.0	0.5	0.9	0.0	0.9						
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Lane Grp Cap(c), veh/h	138	1692	757	90	1598	715	306	0	166	321	0	166						
V/C Ratio(X)	0.60	0.66	0.17	0.51	0.50	0.04	0.22	0.00	0.14	0.04	0.00	0.25						
Avail Cap(c_a), veh/h	279	2255	1009	240	2178	974	827	0	773	850	0	773						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	16.5	7.3	5.5	17.1	7.2	5.6	16.4	0.0	15.0	15.4	0.0	15.2						
Incr Delay (d2), s/veh	4.2	0.4	0.1	4.4	0.2	0.0	0.4	0.0	0.4	0.1	0.0	0.8						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.0	4.3	0.7	0.6	2.8	0.2	0.7	0.0	0.2	0.1	0.0	0.4						
LnGrp Delay(d),s/veh	20.6	7.8	5.6	21.4	7.4	5.7	16.7	0.0	15.4	15.4	0.0	15.9						
LnGrp LOS	C	A	A	C	A	A	B		B	B		B						
Approach Vol, veh/h	1332				872				90		55							
Approach Delay, s/veh	8.4				8.1				16.4		15.8							
Approach LOS	A				A				B		B							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	6.4	22.1			8.4	7.4	21.2	8.4										
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5	4.5	4.5										
Max Green Setting (Gmax), s	5.0	23.5			18.0	5.8	22.7	18.0										
Max Q Clear Time (g_c+I1), s	2.9	10.9			2.9	3.7	7.9	4.6										
Green Ext Time (p_c), s	0.0	6.7			0.1	0.0	5.0	0.2										
Intersection Summary																		
HCM 2010 Ctrl Delay																		
HCM 2010 LOS																		

APPENDIX S

INTERSECTION ANALYSIS WORKSHEETS – NORTH RIVER ROAD/ LEON ROAD SIGNALIZED INTERSECTION

4: N. River Rd & Leon St HCM 2010 Signalized Intersection Summary

Leon Signal
06/27/2018

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	75	355	680	70	110	165		
Future Volume (veh/h)	75	355	680	70	110	165		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	80	378	723	74	117	176		
Adj No. of Lanes	1	1	1	0	0	0		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	106	1196	846	87	140	211		
Arrive On Green	0.06	0.64	0.51	0.51	0.21	0.21		
Sat Flow, veh/h	1774	1863	1658	170	657	988		
Grp Volume(v), veh/h	80	378	0	797	294	0		
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1828	1650	0		
Q Serve(g_s), s	2.8	5.7	0.0	23.7	10.7	0.0		
Cycle Q Clear(g_c), s	2.8	5.7	0.0	23.7	10.7	0.0		
Prop In Lane	1.00			0.09	0.40	0.60		
Lane Grp Cap(c), veh/h	106	1196	0	933	353	0		
V/C Ratio(X)	0.75	0.32	0.00	0.85	0.83	0.00		
Avail Cap(c_a), veh/h	213	1771	0	1387	567	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	29.0	5.0	0.0	13.3	23.5	0.0		
Incr Delay (d2), s/veh	10.1	0.2	0.0	3.6	5.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	2.9	0.0	12.7	5.4	0.0		
LnGrp Delay(d),s/veh	39.1	5.2	0.0	16.9	29.3	0.0		
LnGrp LOS	D	A		B	C			
Approach Vol, veh/h		458	797		294			
Approach Delay, s/veh		11.1	16.9		29.3			
Approach LOS		B	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.7		17.9	8.3	36.4
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				59.5		21.5	7.5	47.5
Max Q Clear Time (g_c+I1), s				7.7		12.7	4.8	25.7
Green Ext Time (p_c), s				2.6		0.6	0.0	6.2
Intersection Summary								
HCM 2010 Ctrl Delay			17.5					
HCM 2010 LOS			B					
Notes								

4: N. River Rd & Leon St
HCM 2010 Signalized Intersection Summary

Leon Signal
06/27/2018

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	155	680	470	80	80	110		
Future Volume (veh/h)	155	680	470	80	80	110		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	165	723	500	85	85	117		
Adj No. of Lanes	1	1	1	0	0	0		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	218	1185	643	109	117	162		
Arrive On Green	0.12	0.64	0.42	0.42	0.17	0.17		
Sat Flow, veh/h	1774	1863	1546	263	695	956		
Grp Volume(v), veh/h	165	723	0	585	203	0		
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1809	1659	0		
Q Serve(g_s), s	4.2	10.7	0.0	12.9	5.3	0.0		
Cycle Q Clear(g_c), s	4.2	10.7	0.0	12.9	5.3	0.0		
Prop In Lane	1.00			0.15	0.42	0.58		
Lane Grp Cap(c), veh/h	218	1185	0	752	280	0		
V/C Ratio(X)	0.76	0.61	0.00	0.78	0.72	0.00		
Avail Cap(c_a), veh/h	619	2506	0	1627	679	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	19.6	5.0	0.0	11.6	18.2	0.0		
Incr Delay (d2), s/veh	5.3	0.5	0.0	1.8	3.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	5.4	0.0	6.7	2.7	0.0		
LnGrp Delay(d),s/veh	24.9	5.5	0.0	13.4	21.7	0.0		
LnGrp LOS	C	A		B	C			
Approach Vol, veh/h		888	585		203			
Approach Delay, s/veh		9.1	13.4		21.7			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				33.9		12.3	10.2	23.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				62.1		18.9	16.1	41.5
Max Q Clear Time (g_c+I1), s				12.7		7.3	6.2	14.9
Green Ext Time (p_c), s				6.3		0.5	0.3	4.3
Intersection Summary								
HCM 2010 Ctrl Delay			12.1					
HCM 2010 LOS			B					
Notes								

4: N. River Rd & Leon St HCM 2010 Signalized Intersection Summary

Leon Signal
06/27/2018

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	75	455	918	74	112	165		
Future Volume (veh/h)	75	455	918	74	112	165		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	80	484	977	79	119	176		
Adj No. of Lanes	1	2	2	0	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	104	1838	1305	106	616	550		
Arrive On Green	0.06	0.52	0.39	0.39	0.35	0.35		
Sat Flow, veh/h	1774	3632	3402	268	1774	1583		
Grp Volume(v), veh/h	80	484	522	534	119	176		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1807	1774	1583		
Q Serve(g_s), s	3.0	5.1	17.2	17.2	3.2	5.5		
Cycle Q Clear(g_c), s	3.0	5.1	17.2	17.2	3.2	5.5		
Prop In Lane	1.00			0.15	1.00	1.00		
Lane Grp Cap(c), veh/h	104	1838	698	713	616	550		
V/C Ratio(X)	0.77	0.26	0.75	0.75	0.19	0.32		
Avail Cap(c_a), veh/h	302	3009	1086	1109	616	550		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	31.4	9.0	17.6	17.6	15.4	16.2		
Incr Delay (d2), s/veh	11.4	0.1	1.6	1.6	0.7	1.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	2.5	8.6	8.8	1.7	5.7		
LnGrp Delay(d),s/veh	42.8	9.1	19.2	19.2	16.1	17.7		
LnGrp LOS	D	A	B	B	B	B		
Approach Vol, veh/h		564	1056		295			
Approach Delay, s/veh		13.9	19.2		17.1			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.6		28.0	8.5	31.2
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				57.5		23.5	11.5	41.5
Max Q Clear Time (g_c+I1), s				7.1		7.5	5.0	19.2
Green Ext Time (p_c), s				3.7		0.8	0.1	7.5
Intersection Summary								
HCM 2010 Ctrl Delay			17.3					
HCM 2010 LOS			B					

4: N. River Rd & Leon St
HCM 2010 Signalized Intersection Summary

Leon Signal
06/27/2018

									
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	155	984	624	83	85	110			
Future Volume (veh/h)	155	984	624	83	85	110			
Number	7	4	8	18	1	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863			
Adj Flow Rate, veh/h	165	1047	664	88	90	117			
Adj No. of Lanes	1	2	2	0	1	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	2	2	2	2			
Cap, veh/h	222	2176	1148	152	246	220			
Arrive On Green	0.13	0.61	0.37	0.37	0.14	0.14			
Sat Flow, veh/h	1774	3632	3226	415	1774	1583			
Grp Volume(v), veh/h	165	1047	375	377	90	117			
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1778	1774	1583			
Q Serve(g_s), s	3.3	5.9	6.2	6.2	1.7	2.5			
Cycle Q Clear(g_c), s	3.3	5.9	6.2	6.2	1.7	2.5			
Prop In Lane	1.00			0.23	1.00	1.00			
Lane Grp Cap(c), veh/h	222	2176	648	652	246	220			
V/C Ratio(X)	0.74	0.48	0.58	0.58	0.37	0.53			
Avail Cap(c_a), veh/h	947	5568	1622	1630	1141	1018			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.4	3.8	9.3	9.3	14.3	14.6			
Incr Delay (d2), s/veh	4.8	0.2	0.8	0.8	0.9	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.9	2.8	3.2	3.2	0.9	2.3			
LnGrp Delay(d),s/veh	20.3	4.0	10.1	10.1	15.2	16.6			
LnGrp LOS	C	A	B	B	B	B			
Approach Vol, veh/h	1212		752		207				
Approach Delay, s/veh	6.2		10.1		16.0				
Approach LOS	A		B		B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs				4			6	7	8
Phs Duration (G+Y+Rc), s				27.0			9.6	9.1	17.9
Change Period (Y+Rc), s				4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s				57.5			23.5	19.5	33.5
Max Q Clear Time (g_c+I1), s				7.9			4.5	5.3	8.2
Green Ext Time (p_c), s				10.0			0.6	0.4	5.1
Intersection Summary									
HCM 2010 Ctrl Delay				8.5					
HCM 2010 LOS				A					

APPENDIX T

SIGNAL WARRANT ANALYSIS

N. RIVER ROAD / LEON STREET SIGNAL WARRANT

Based on analysis of the N. River Road / Leon Street intersection, LOS E operations are forecasted in near-term conditions if the intersection is unsignalized, with operations degrading to LOS F in the long-term, with the extension of Melrose Drive. The improvement needed to improve LOS operations to acceptable levels would be to install a traffic signal.

A traffic signal warrant analysis has been completed to determine if a signal would meet warrants under future conditions. As outlined in Chapter 4C, “Traffic Control Signal Needs Studies,” of the *2012 California Manual on Uniform Traffic Control Devices* (California MUTCD), the peak hour warrant (Warrant 3) was analyzed for the subject intersection to determine if a traffic signal would be warranted under Year 2035 Without Project (With Melrose Drive extension) conditions.

The lane configurations at the “tee” intersection are the following:

- Leon Street (southbound): 1 shared left-turn/right-turn lane
- N. River Road (westbound): 1 thru lane, 1 shared thru/right-turn lane
- N. River Road (eastbound): 2 thru lanes; 1 left-turn lane (two-way left-turn lane)

Table A below provides an overview of the existing geometric conditions at the intersection.

TABLE A
PROPOSED LANE CONDITIONS

Intersection	Major Street	Number of Lanes per Approach	
		Major Street	Minor Street
4. N. River Road / Leon Street	N. River Road	2	1

Note:

1. Per the MUTCD Section 4C.01(09), “site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach.” Thus, a one lane approach was applied to the minor street approach.

Table B provides the hourly traffic volumes used in the analysis.

TABLE B
PEAK HOUR APPROACH TRAFFIC VOLUMES

Time of Day	Vehicles per hour on major street (Total of both approaches)	Vehicles per hour on higher- volume minor-street approach (One direction only)
Year 2035 Without Project (with Melrose Drive Extension)		
7:00-9:00 AM	1,180	275
4:00-6:00 PM	1,385	190

Note:

- Volumes shown represent peak one-hour timeframe in the AM and PM peak periods.

1.0 WARRANT 3 – PEAK HOUR

1.1 Methodolgy

Warrant 3: Peak-Hour Vehicular Volume—The Peak-Hour Vehicular Volume signal Warrant is intended for use at a location where traffic conditions are such that for a minimum one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either Category A or Category B are met. Category A examines the peak hour volume and delay conditions for the same one hour of an average day. Category B compares the traffic volumes on the major and minor street approaches for one hour of an average day against a set threshold to consider installing a traffic signal. If either Category A or B is met, a signal is warranted.

Category A. If all of the three conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 Vehicles-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
2. The volume on the same-minor street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for the intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

Category B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume on the minor street approach (one direction only) for 1 hour (or any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to satisfy the criteria in the second category. While the posted speed limit on N. River Road to the east of Leon Street is 45 mph, the immediate vicinity of Leon Street is a school zone with a 25 mph posted speed limit. Therefore, Figure 4C-3 was used in evaluating Category B.

1.2 Calculations

Table C, **Table D**, and **Table E** summarize Warrant 3 calculation results. The following sections describe the calculations done to evaluate Category A and Category B of Warrant 3.

1.2.1 Category A

For Category A-1, the total vehicle hours of delay must exceed four hours for a one-lane approach. The unsignalized peak hour intersection analysis indicates that the stop-controlled southbound approach operates at LOS F during the AM/PM peak hours under Year 2035 with the Melrose Drive Extension (without the Project). To calculate the total vehicle hours to assess Category A-1, the following formulas were used:

Year 2035 Without Project (with Melrose Drive extension)

AM peak hour = (55.5 seconds x 275 vehicles/hour) ÷ 3600 sec/hour = 4.2 vehicle hours

PM peak hour = (59.9 seconds x 190 vehicles/hour) ÷ 3600 sec/hour = 3.2 vehicle hours

According to the calculations above, the total vehicle hours of delay do not exceed four hours in the PM peak hour. However, total vehicle hours of delay exceed the thresholds allowed by Category A-1 in the AM peak hour.

For Categories A-2 and A-3 both AM and PM peak hour traffic volumes exceed the thresholds of 100 vehicles/hour on the minor street and total entering volume of 650 vehicles/hour under Year 2035 Without Project (With Melrose Drive Extension) conditions.

Thus, Year 2035 Without Project conditions (with Melrose Drive extension) meets all three parts of Category A.

1.2.2 Category B

As shown in the graphic following the table below, both the AM and PM peak hour volumes are above the threshold for a two lane approach major and one lane minor for Year 2035 Without Project (with Melrose Drive extension) conditions. Thus **Category B of Warrant 3 is satisfied.**

TABLE C
WARRANT 3: PEAK HOUR – YEAR 2035 WITHOUT PROJECT (WITH MELROSE DRIVE)

Warrant 3 – Peak Hour Category A or Category B Satisfied * Yes ☒ No ☐

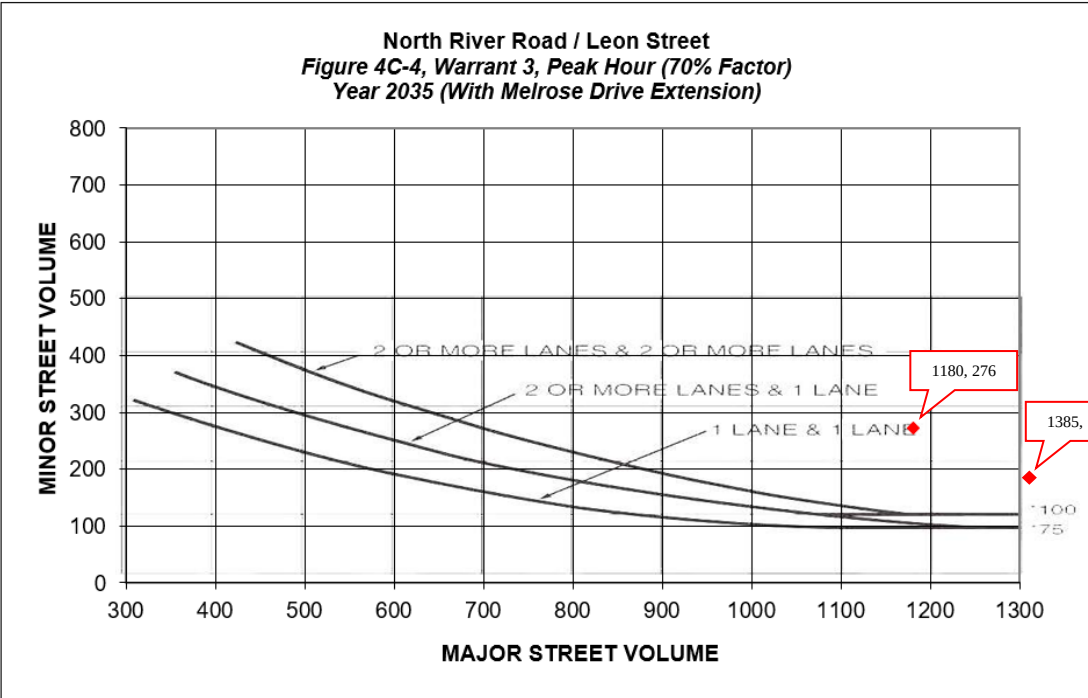
Category A Satisfied * Yes ☐ No ☒

(All Parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor-street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND Yes ☐ No ☒
2. The volume on the same-minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes ☒ No ☐
3. The entering volume serviced during the hour equals or exceeds 800 vph for the intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches. Yes ☒ No ☐

Category B Satisfied * Yes ☒ No ☐

Approach Lanes	One	Two or More	Warrant Volume	AM	PM
Both Approaches -Major Street	X		See Figure 4C-3 below	1,180	1,385
Highest Approach -Minor Street		X	See Figure 4C-3 below	275	190
The plotted points fall above the applicable curve on Figure 4C-3.				Yes ☒	No ☐



1.3 Conclusion

Based on the above in *Table C* and the graphic depicted in Figure 4C-4, **Warrants are Met** under Year 2035 Without Project (with Melrose Drive extension) conditions.

TABLE F
WARRANT 3: PEAK HOUR – YEAR 2035 WITHOUT PROJECT (WITHOUT MELROSE DRIVE)

Warrant 3 – Peak Hour Category A or Category B Satisfied * Yes ☒ No ☐

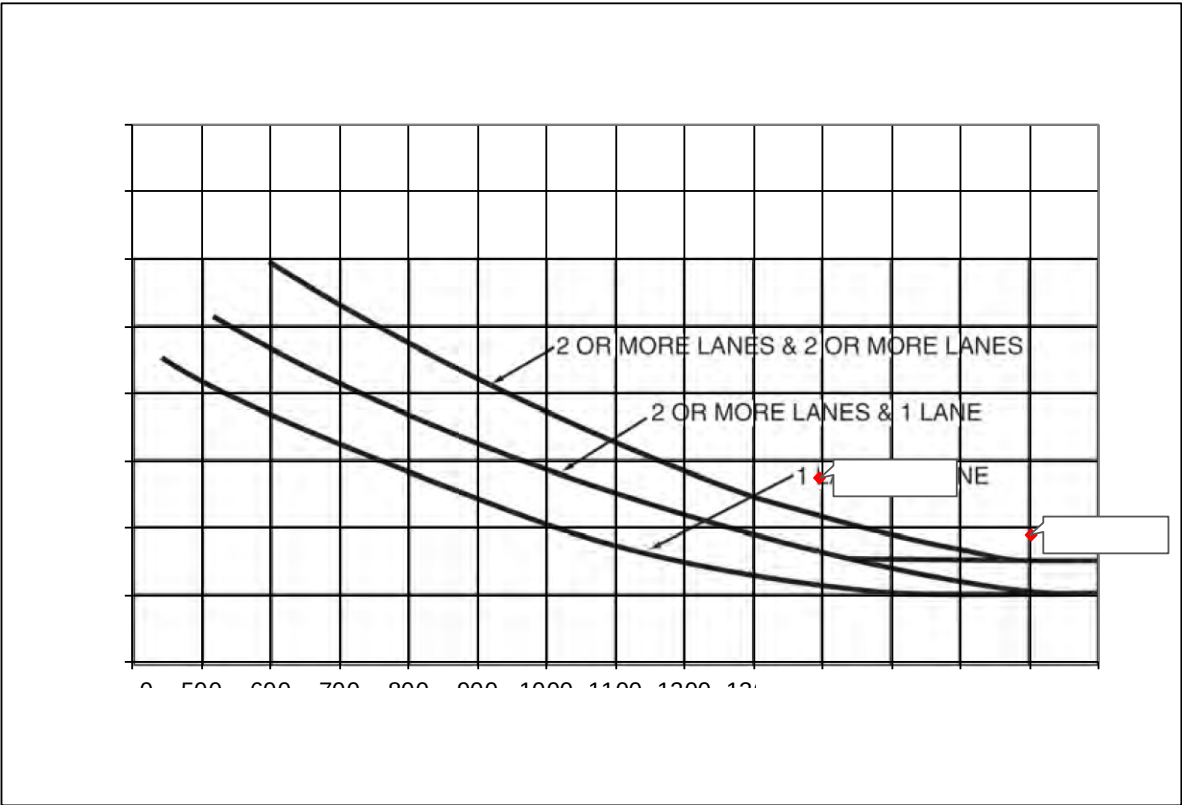
Category A Satisfied * Yes ☒ No ☐

(All Parts 1, 2, and 3 below must be satisfied)

4. The total delay experienced for traffic on one minor-street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; <u>AND</u>	Yes	☒	No	☐
5. The volume on the same-minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes	☒	No	☐
6. The entering volume serviced during the hour equals or exceeds 800 vph for the intersections with four or more approaches or 650 vehicles per hour for intersections with three approaches.	Yes	☒	No	☐

Category B Satisfied * Yes ☒ No ☐

Approach Lanes	One	Two or More	Warrant Volume	AM	PM
Both Approaches -Major Street	X		See Figure 4C-3 below	1,395	1,700
Highest Approach -Minor Street	X		See Figure 4C-3 below	275	190
The plotted points fall above the applicable curve on Figure 4C-3.				Yes ☒	No ☐



APPENDIX U

INTERSECTION ANALYSIS WORKSHEETS – POST-MITIGATION

HCM 2010 Signalized Intersection Summary

19: College Blvd & SR-76

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	695	41	546	1302	558	57	525	197	665	885	369
Future Volume (veh/h)	470	695	41	546	1302	558	57	525	197	665	885	369
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	511	755	45	593	1415	607	62	571	214	723	962	401
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	1426	549	587	1617	793	242	1028	585	630	1115	708
Arrive On Green	0.13	0.28	0.28	0.17	0.32	0.32	0.07	0.20	0.20	0.18	0.32	0.32
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	5085	1559	3442	3539	1579
Grp Volume(v), veh/h	511	755	45	593	1415	607	62	571	214	723	962	401
Grp Sat Flow(s),veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1695	1559	1721	1770	1579
Q Serve(g_s), s	21.3	20.1	3.1	27.3	42.1	49.6	2.7	16.1	16.0	29.3	40.9	30.1
Cycle Q Clear(g_c), s	21.3	20.1	3.1	27.3	42.1	49.6	2.7	16.1	16.0	29.3	40.9	30.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	1426	549	587	1617	793	242	1028	585	630	1115	708
V/C Ratio(X)	1.12	0.53	0.08	1.01	0.88	0.77	0.26	0.56	0.37	1.15	0.86	0.57
Avail Cap(c_a), veh/h	458	1426	549	587	1617	793	258	1303	670	630	1290	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.3	48.7	34.7	66.3	51.6	32.3	70.4	57.4	36.5	65.3	51.5	32.7
Incr Delay (d2), s/veh	77.4	1.4	0.3	39.6	7.0	6.9	0.6	0.5	0.4	83.8	5.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	9.6	1.4	16.2	20.7	23.3	1.3	7.6	6.9	21.3	20.9	13.2
LnGrp Delay(d),s/veh	146.7	50.1	35.0	106.0	58.5	39.2	71.0	57.8	36.9	149.2	57.2	33.4
LnGrp LOS	F	D	D	F	E	D	E	E	D	F	E	C
Approach Vol, veh/h	1311			2615			847			2086		
Approach Delay, s/veh	87.2			64.8			53.5			84.5		
Approach LOS	F			E			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.0	52.9	16.9	57.2	27.0	58.9	35.0	39.1				
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	* 27	36.2	* 12	58.3	* 21	42.2	* 29	41.0				
Max Q Clear Time (g_c+I1), s	29.3	22.1	4.7	42.9	23.3	51.6	31.3	18.1				
Green Ext Time (p_c), s	0.0	4.1	0.1	7.5	0.0	0.0	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay	73.7											
HCM 2010 LOS	E											
Notes												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	84	114	499	125	93	226	741	894	285	1016	66
Future Volume (veh/h)	93	84	114	499	125	93	226	741	894	285	1016	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	91	124	542	136	101	246	805	972	310	1104	72
Adj No. of Lanes	1	1	1	2	1	0	1	2	2	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	342	276	594	282	209	270	1122	1339	334	1250	546
Arrive On Green	0.07	0.18	0.18	0.17	0.29	0.29	0.15	0.32	0.32	0.19	0.35	0.35
Sat Flow, veh/h	1774	1863	1506	3442	985	732	1774	3539	2706	1774	3539	1548
Grp Volume(v), veh/h	101	91	124	542	0	237	246	805	972	310	1104	72
Grp Sat Flow(s),veh/h/ln	1774	1863	1506	1721	0	1717	1774	1770	1353	1774	1770	1548
Q Serve(g_s), s	7.3	5.5	9.5	20.1	0.0	14.9	17.7	26.1	37.2	22.3	38.1	4.1
Cycle Q Clear(g_c), s	7.3	5.5	9.5	20.1	0.0	14.9	17.7	26.1	37.2	22.3	38.1	4.1
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	342	276	594	0	491	270	1122	1339	334	1250	546
V/C Ratio(X)	0.81	0.27	0.45	0.91	0.00	0.48	0.91	0.72	0.73	0.93	0.88	0.13
Avail Cap(c_a), veh/h	214	516	417	622	0	579	280	1135	1349	352	1280	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	45.6	47.2	52.8	0.0	38.5	54.2	39.3	26.4	51.9	39.5	28.5
Incr Delay (d2), s/veh	11.6	0.4	1.1	17.4	0.0	0.7	31.0	2.2	2.0	29.4	7.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.8	4.1	11.0	0.0	7.1	11.0	13.1	14.2	13.7	19.9	1.8
LnGrp Delay(d),s/veh	71.1	46.0	48.4	70.2	0.0	39.2	85.3	41.4	28.4	81.3	47.0	28.6
LnGrp LOS	E	D	D	E		D	F	D	C	F	D	C
Approach Vol, veh/h		316			779			2023			1486	
Approach Delay, s/veh		55.0			60.8			40.5			53.3	
Approach LOS		D			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.0	45.7	26.9	28.3	24.3	50.4	13.7	41.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.8	41.7	23.5	36.0	20.5	47.0	15.7	43.8				
Max Q Clear Time (g_c+I1), s	24.3	39.2	22.1	11.5	19.7	40.1	9.3	16.9				
Green Ext Time (p_c), s	0.2	2.0	0.3	0.9	0.1	4.2	0.1	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			49.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

N:\2596\Analysis\Synchro\Mitigation\8. Existing + Cuml + Proj PM (Mitigated).syn

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	  		 	 	
Traffic Volume (veh/h)	760	1374	74	302	971	745	68	1162	367	577	1017	450
Future Volume (veh/h)	760	1374	74	302	971	745	68	1162	367	577	1017	450
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	826	1493	80	328	1055	810	74	1263	399	627	1105	489
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	763	1667	622	352	1060	639	224	1164	518	673	1272	907
Arrive On Green	0.22	0.33	0.33	0.10	0.21	0.21	0.07	0.23	0.23	0.20	0.36	0.36
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1558	3442	3539	1548
Grp Volume(v), veh/h	826	1493	80	328	1055	810	74	1263	399	627	1105	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1558	1721	1770	1548
Q Serve(g_s), s	39.9	50.3	5.8	17.0	37.3	37.5	3.7	41.2	41.2	32.3	52.3	34.8
Cycle Q Clear(g_c), s	39.9	50.3	5.8	17.0	37.3	37.5	3.7	41.2	41.2	32.3	52.3	34.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	763	1667	622	352	1060	639	224	1164	518	673	1272	907
V/C Ratio(X)	1.08	0.90	0.13	0.93	1.00	1.27	0.33	1.09	0.77	0.93	0.87	0.54
Avail Cap(c_a), veh/h	763	1667	622	352	1060	639	229	1164	518	728	1323	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	57.6	34.9	80.2	71.2	53.7	80.4	69.4	54.1	71.2	53.7	23.1
Incr Delay (d2), s/veh	57.3	7.9	0.4	31.1	26.6	132.1	0.9	52.6	6.9	18.0	6.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.0	24.7	2.6	9.6	20.1	55.3	1.8	25.0	18.9	17.0	26.7	15.0
LnGrp Delay(d),s/veh	127.3	65.5	35.4	111.3	97.7	185.8	81.3	122.0	61.1	89.3	60.0	23.7
LnGrp LOS	F	E	D	F	F	F	F	F	E	F	E	C
Approach Vol, veh/h	2399				2193				1736			
Approach Delay, s/veh	85.8				132.3				106.3		60.3	
Approach LOS	F				F				F		E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.1	67.0	17.4	71.5	45.6	45.5	40.9	48.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	18	56.1	* 12	67.3	* 40	34.6	* 38	41.2				
Max Q Clear Time (g_c+1.9, s)	19.0	52.3	5.7	54.3	41.9	39.5	34.3	43.2				
Green Ext Time (p_c), s	0.0	2.9	0.1	7.1	0.0	0.0	0.9	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			95.2									
HCM 2010 LOS			F									
Notes												

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	455	918	74	112	165
Future Vol, veh/h	75	455	918	74	112	165
Conflicting Peds, #/hr	5	0	0	5	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	150
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	484	977	79	119	176
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1061	0	-	0	1424	535
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	652	-	-	-	127	490
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	649	-	-	- ~	110	487
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	641	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.6	0		27.3		
HCM LOS	D					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	649	-	-	-	208	487
HCM Lane V/C Ratio	0.123	-	-	-	0.573	0.36
HCM Control Delay (s)	11.3	-	-	-	43.2	16.5
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.4	-	-	-	3.1	1.6
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

9: Douglas Dr & N. River Rd
HCM 2010 Signalized Intersection Summary

Year 2035 + Proj AM (w. Melrose) MITIGATED

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Future Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1455	33	38	82	560	679	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	425	271	1425	393	452	96	1154	2042	35	1048	11
Arrive On Green	0.04	0.12	0.12	0.41	0.50	0.50	0.05	0.33	0.33	0.02	0.29	0.29
Sat Flow, veh/h	1774	3539	1543	3442	791	911	1774	3539	2724	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1455	0	71	82	560	679	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1543	1721	0	1702	1774	1770	1362	1774	1770	1856
Q Serve(g_s), s	3.6	3.1	18.0	62.1	0.0	3.3	6.9	19.0	13.0	1.8	43.8	43.8
Cycle Q Clear(g_c), s	3.6	3.1	18.0	62.1	0.0	3.3	6.9	19.0	13.0	1.8	43.8	43.8
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	67	425	271	1425	0	845	96	1154	2042	35	517	542
V/C Ratio(X)	0.65	0.19	0.76	1.02	0.00	0.08	0.86	0.49	0.33	0.62	1.00	1.00
Avail Cap(c_a), veh/h	213	425	271	1425	0	845	96	1154	2042	72	517	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	59.5	59.1	44.0	0.0	19.8	70.4	40.5	6.8	72.9	53.1	53.1
Incr Delay (d2), s/veh	10.0	0.2	12.2	29.3	0.0	0.0	49.2	0.3	0.1	16.3	39.9	39.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.6	9.1	35.3	0.0	1.5	4.7	9.4	4.8	1.1	27.1	28.3
LnGrp Delay(d),s/veh	81.2	59.7	71.3	73.3	0.0	19.9	119.5	40.8	6.8	89.2	93.0	92.1
LnGrp LOS	F	E	E	F		B	F	D	A	F	F	F
Approach Vol, veh/h		332			1526			1321			1082	
Approach Delay, s/veh		69.7			70.8			28.2			92.5	
Approach LOS		E			E			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	53.4	66.6	22.5	12.6	48.3	10.1	79.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.1	45.8	62.1	18.0	8.1	43.8	18.0	62.1				
Max Q Clear Time (g_c+I1), s	3.8	21.0	64.1	20.0	8.9	45.8	5.6	5.3				
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				63.0								
HCM 2010 LOS				E								

19: College Blvd & SR-76
 HCM 2010 Signalized Intersection Summary

Year 2035 + Proj AM (w. Melrose) MITIGATED

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	  		 	 	
Traffic Volume (veh/h)	475	845	45	595	1470	553	60	522	215	618	850	378
Future Volume (veh/h)	475	845	45	595	1470	553	60	522	215	618	850	378
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	516	918	49	647	1598	601	65	567	234	672	924	411
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1366	531	671	1712	793	244	1059	633	566	1068	677
Arrive On Green	0.13	0.27	0.27	0.20	0.34	0.34	0.07	0.21	0.21	0.16	0.30	0.30
Sat Flow, veh/h	3442	5085	1561	3442	5085	1583	3442	5085	1559	3442	3539	1579
Grp Volume(v), veh/h	516	918	49	647	1598	601	65	567	234	672	924	411
Grp Sat Flow(s),veh/h/ln	1721	1695	1561	1721	1695	1583	1721	1695	1559	1721	1770	1579
Q Serve(g_s), s	20.3	25.8	3.4	29.8	48.6	48.8	2.9	15.9	16.9	26.3	39.5	32.2
Cycle Q Clear(g_c), s	20.3	25.8	3.4	29.8	48.6	48.8	2.9	15.9	16.9	26.3	39.5	32.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	437	1366	531	671	1712	793	244	1059	633	566	1068	677
V/C Ratio(X)	1.18	0.67	0.09	0.96	0.93	0.76	0.27	0.54	0.37	1.19	0.86	0.61
Avail Cap(c_a), veh/h	437	1366	531	671	1712	793	258	1303	708	566	1223	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	52.2	36.0	63.8	51.3	32.1	70.4	56.4	33.5	66.8	52.8	35.3
Incr Delay (d2), s/veh	103.0	2.7	0.3	26.0	10.8	6.7	0.6	0.4	0.4	101.3	6.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	12.4	1.5	16.6	24.5	22.8	1.4	7.5	7.3	20.5	20.1	14.2
LnGrp Delay(d),s/veh	172.9	54.9	36.4	89.9	62.2	38.8	71.0	56.9	33.9	168.2	58.8	36.5
LnGrp LOS	F	D	D	F	E	D	E	E	C	F	E	D
Approach Vol, veh/h	1483		2846				866			2007		
Approach Delay, s/veh	95.3		63.5				51.7			90.9		
Approach LOS	F		E				D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	36.9	51.0	17.0	55.1	26.0	61.9	32.0	40.1				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	31.5	35.3	* 12	55.3	* 20	46.2	* 26	41.0				
Max Q Clear Time (g_c+Q), s	31.5	27.8	4.9	41.5	22.3	50.8	28.3	18.9				
Green Ext Time (p_c), s	0.0	3.4	0.1	6.8	0.0	0.0	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay	76.3											
HCM 2010 LOS	E											
Notes												

HCM 2010 Signalized Intersection Summary

2: N. River Rd & Vandegrift Blvd

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	100	115	581	150	110	230	740	949	321	1005	65
Future Volume (veh/h)	95	100	115	581	150	110	230	740	949	321	1005	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	109	125	632	163	120	250	804	1032	349	1092	71
Adj No. of Lanes	1	1	1	2	1	0	1	2	2	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	347	281	666	305	224	263	946	1261	374	1168	511
Arrive On Green	0.07	0.19	0.19	0.19	0.31	0.31	0.15	0.27	0.27	0.21	0.33	0.33
Sat Flow, veh/h	1774	1863	1507	3442	990	729	1774	3539	2701	1774	3539	1548
Grp Volume(v), veh/h	103	109	125	632	0	283	250	804	1032	349	1092	71
Grp Sat Flow(s),veh/h/ln	1774	1863	1507	1721	0	1718	1774	1770	1351	1774	1770	1548
Q Serve(g_s), s	7.2	6.4	9.3	23.0	0.0	17.3	17.7	27.3	33.9	24.5	37.9	4.1
Cycle Q Clear(g_c), s	7.2	6.4	9.3	23.0	0.0	17.3	17.7	27.3	33.9	24.5	37.9	4.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	347	281	666	0	529	263	946	1261	374	1168	511
V/C Ratio(X)	0.81	0.31	0.45	0.95	0.00	0.54	0.95	0.85	0.82	0.93	0.94	0.14
Avail Cap(c_a), veh/h	218	529	428	666	0	609	263	946	1261	399	1193	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	44.6	45.7	50.5	0.0	36.3	53.5	44.0	29.8	49.1	41.1	29.8
Incr Delay (d2), s/veh	11.3	0.5	1.1	23.2	0.0	0.8	41.8	7.4	4.4	27.8	13.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.3	4.0	13.0	0.0	8.3	11.7	14.3	16.4	14.9	20.7	1.8
LnGrp Delay(d),s/veh	69.3	45.1	46.8	73.7	0.0	37.2	95.2	51.4	34.2	76.9	54.4	29.9
LnGrp LOS	E	D	D	E		D	F	D	C	E	D	C
Approach Vol, veh/h		337			915			2086			1512	
Approach Delay, s/veh		53.1			62.4			48.1			58.5	
Approach LOS		D			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.2	38.4	29.0	28.1	23.3	46.3	13.6	43.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	28.5	33.0	24.5	36.0	18.8	42.7	15.6	44.9				
Max Q Clear Time (g_c+I1), s	26.5	35.9	25.0	11.3	19.7	39.9	9.2	19.3				
Green Ext Time (p_c), s	0.2	0.0	0.0	1.0	0.0	1.9	0.1	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			54.4									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	155	984	624	83	85	110
Future Vol, veh/h	155	984	624	83	85	110
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	150	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	1047	664	88	90	117
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	753	0	-	0	1563	377
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	854	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	853	-	-	-	102	621
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	377	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	852	-	-	-	~ 82	620
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	377	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		31.2		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	852	-	-	-	156	620
HCM Lane V/C Ratio	0.194	-	-	-	0.58	0.189
HCM Control Delay (s)	10.2	-	-	-	55.8	12.2
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.7	-	-	-	3	0.7
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 2010 Signalized Intersection Summary

19: College Blvd & SR-76

07/23/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	776	1565	80	330	1125	685	70	1126	400	555	1009	466
Future Volume (veh/h)	776	1565	80	330	1125	685	70	1126	400	555	1009	466
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	843	1701	87	359	1223	745	76	1224	435	603	1097	507
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	778	1769	654	377	1175	632	224	1164	530	579	1689	872
Arrive On Green	0.23	0.35	0.35	0.11	0.23	0.23	0.07	0.23	0.23	0.17	0.33	0.33
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1558	3442	5085	1547
Grp Volume(v), veh/h	843	1701	87	359	1223	745	76	1224	435	603	1097	507
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1558	1721	1695	1547
Q Serve(g_s), s	40.7	59.0	6.1	18.7	41.6	41.6	3.8	41.2	41.2	30.3	33.1	38.8
Cycle Q Clear(g_c), s	40.7	59.0	6.1	18.7	41.6	41.6	3.8	41.2	41.2	30.3	33.1	38.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	778	1769	654	377	1175	632	224	1164	530	579	1689	872
V/C Ratio(X)	1.08	0.96	0.13	0.95	1.04	1.18	0.34	1.05	0.82	1.04	0.65	0.58
Avail Cap(c_a), veh/h	778	1769	654	377	1175	632	229	1164	530	579	1689	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.7	57.5	32.8	79.7	69.2	54.0	80.4	69.4	54.7	74.8	51.2	26.1
Incr Delay (d2), s/veh	57.2	14.1	0.4	34.3	37.4	95.8	0.9	41.0	10.0	48.4	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.5	29.9	2.8	10.7	23.6	48.3	1.8	23.7	21.3	18.3	15.7	16.8
LnGrp Delay(d),s/veh	126.8	71.6	33.2	114.0	106.6	149.9	81.3	110.4	64.6	123.3	52.1	27.1
LnGrp LOS	F	E	C	F	F	F	F	F	E	F	D	C
Approach Vol, veh/h	2631				2327				1735			
Approach Delay, s/veh	88.0				121.6				97.7			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	70.6	17.4	66.6	46.4	49.6	36.0	48.0				
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	* 20	62.6	* 12	59.5	* 41	41.6	* 30	41.2				
Max Q Clear Time (g_c+I1), s	20.7	61.0	5.8	40.8	42.7	43.6	32.3	43.2				
Green Ext Time (p_c), s	0.0	1.3	0.1	9.8	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	93.2											
HCM 2010 LOS	F											
Notes												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	60	115	947	65	342	95	850	533	173	750	35
Future Volume (veh/h)	45	60	115	947	65	342	95	850	533	173	750	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	65	125	1029	71	372	103	924	579	188	815	38
Adj No. of Lanes	1	1	1	2	1	0	1	2	2	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	300	245	1070	113	591	126	970	1618	204	1125	503
Arrive On Green	0.04	0.16	0.16	0.31	0.44	0.44	0.07	0.27	0.27	0.11	0.32	0.32
Sat Flow, veh/h	1774	1863	1522	3442	258	1354	1774	3539	2741	1774	3539	1583
Grp Volume(v), veh/h	49	65	125	1029	0	443	103	924	579	188	815	38
Grp Sat Flow(s),veh/h/ln	1774	1863	1522	1721	0	1613	1774	1770	1370	1774	1770	1583
Q Serve(g_s), s	3.5	3.9	9.7	38.1	0.0	27.7	7.4	33.2	14.4	13.6	26.4	2.2
Cycle Q Clear(g_c), s	3.5	3.9	9.7	38.1	0.0	27.7	7.4	33.2	14.4	13.6	26.4	2.2
Prop In Lane	1.00		1.00	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	300	245	1070	0	704	126	970	1618	204	1125	503
V/C Ratio(X)	0.78	0.22	0.51	0.96	0.00	0.63	0.81	0.95	0.36	0.92	0.72	0.08
Avail Cap(c_a), veh/h	131	518	423	1076	0	833	163	972	1620	204	1125	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	47.3	49.7	43.9	0.0	28.4	59.3	46.2	14.1	56.8	39.2	30.9
Incr Delay (d2), s/veh	18.0	0.4	1.6	18.8	0.0	1.1	21.2	18.4	0.1	41.7	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.1	4.2	20.8	0.0	12.5	4.4	18.6	5.5	9.0	13.3	1.0
LnGrp Delay(d),s/veh	80.0	47.6	51.3	62.6	0.0	29.5	80.5	64.6	14.3	98.5	41.5	30.9
LnGrp LOS	E	D	D	E		C	F	E	B	F	D	C
Approach Vol, veh/h		239			1472			1606			1041	
Approach Delay, s/veh		56.2			52.7			47.5			51.4	
Approach LOS		E			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	40.0	44.8	25.4	13.7	45.7	9.1	61.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.9	35.6	40.5	36.0	11.9	38.6	9.6	66.9				
Max Q Clear Time (g_c+I1), s	15.6	35.2	40.1	11.7	9.4	28.4	5.5	29.7				
Green Ext Time (p_c), s	0.0	0.3	0.2	0.7	0.0	4.1	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			50.6									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	85	613	1053	64	82	195
Future Vol, veh/h	85	613	1053	64	82	195
Conflicting Peds, #/hr	5	0	0	5	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	150
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	666	1145	70	89	212
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1220	0	-	0	1702	615
Stage 1	-	-	-	-	1185	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	567	-	-	-	~ 83	434
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	564	-	-	-	~ 69	431
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	560	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.5	0		30.7		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	564	-	-	-	159	431
HCM Lane V/C Ratio	0.164	-	-	-	0.561	0.492
HCM Control Delay (s)	12.6	-	-	-	53.2	21.2
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	2.9	2.6
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Future Volume (veh/h)	40	75	190	1339	30	35	75	515	625	20	965	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	43	82	207	1455	33	38	82	560	679	22	1049	11
Adj No. of Lanes	1	2	1	2	1	0	1	2	2	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	425	271	1434	395	455	96	1144	2042	35	1038	11
Arrive On Green	0.04	0.12	0.12	0.42	0.50	0.50	0.05	0.32	0.32	0.02	0.29	0.29
Sat Flow, veh/h	1774	3539	1543	3442	791	911	1774	3539	2724	1774	3588	38
Grp Volume(v), veh/h	43	82	207	1455	0	71	82	560	679	22	517	543
Grp Sat Flow(s),veh/h/ln	1774	1770	1543	1721	0	1702	1774	1770	1362	1774	1770	1856
Q Serve(g_s), s	3.6	3.1	18.0	62.5	0.0	3.3	6.9	19.1	13.0	1.8	43.4	43.4
Cycle Q Clear(g_c), s	3.6	3.1	18.0	62.5	0.0	3.3	6.9	19.1	13.0	1.8	43.4	43.4
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	67	425	271	1434	0	849	96	1144	2042	35	512	537
V/C Ratio(X)	0.65	0.19	0.76	1.01	0.00	0.08	0.86	0.49	0.33	0.62	1.01	1.01
Avail Cap(c_a), veh/h	213	425	271	1434	0	849	96	1144	2042	72	512	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	59.5	59.1	43.8	0.0	19.6	70.4	40.8	6.8	72.9	53.3	53.3
Incr Delay (d2), s/veh	10.0	0.2	12.2	27.5	0.0	0.0	49.2	0.3	0.1	16.3	42.4	41.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.6	9.1	35.1	0.0	1.5	4.7	9.4	4.8	1.1	27.2	28.4
LnGrp Delay(d),s/veh	81.2	59.7	71.3	71.2	0.0	19.7	119.5	41.1	6.8	89.2	95.7	94.8
LnGrp LOS	F	E	E	F		B	F	D	A	F	F	F
Approach Vol, veh/h		332			1526			1321			1082	
Approach Delay, s/veh		69.7			68.8			28.4			95.1	
Approach LOS		E			E			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	53.0	67.0	22.5	12.6	47.9	10.1	79.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.1	45.4	62.5	18.0	8.1	43.4	18.0	62.5				
Max Q Clear Time (g_c+I1), s	3.8	21.1	64.5	20.0	8.9	45.4	5.6	5.3				
Green Ext Time (p_c), s	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				63.0								
HCM 2010 LOS				E								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↑↑	↱	↰↱	↑↑↑	↱	↰↱	↑↑↑	↱	↰↱	↑↑↑	↱
Traffic Volume (veh/h)	495	900	45	625	1565	627	60	537	225	733	875	393
Future Volume (veh/h)	495	900	45	625	1565	627	60	537	225	733	875	393
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	538	978	49	679	1701	682	65	584	245	797	951	427
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	465	1488	558	700	1835	882	221	826	575	675	1497	679
Arrive On Green	0.14	0.29	0.29	0.20	0.36	0.36	0.06	0.16	0.16	0.20	0.29	0.29
Sat Flow, veh/h	3442	5085	1562	3442	5085	1583	3442	5085	1557	3442	5085	1578
Grp Volume(v), veh/h	538	978	49	679	1701	682	65	584	245	797	951	427
Grp Sat Flow(s),veh/h/ln	1721	1695	1562	1721	1695	1583	1721	1695	1557	1721	1695	1578
Q Serve(g_s), s	24.3	30.3	3.8	35.2	57.8	60.3	3.2	19.6	21.3	35.3	29.2	38.1
Cycle Q Clear(g_c), s	24.3	30.3	3.8	35.2	57.8	60.3	3.2	19.6	21.3	35.3	29.2	38.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	465	1488	558	700	1835	882	221	826	575	675	1497	679
V/C Ratio(X)	1.16	0.66	0.09	0.97	0.93	0.77	0.29	0.71	0.43	1.18	0.64	0.63
Avail Cap(c_a), veh/h	465	1488	558	700	1835	882	229	1158	677	675	1817	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.8	55.8	38.5	71.2	55.2	31.0	80.4	71.3	43.0	72.3	55.1	40.2
Incr Delay (d2), s/veh	92.8	2.3	0.3	26.7	9.6	6.5	0.7	1.2	0.5	96.1	0.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	14.5	1.7	19.4	28.7	27.9	1.6	9.3	9.3	25.8	13.8	16.8
LnGrp Delay(d),s/veh	170.7	58.0	38.8	97.9	64.8	37.6	81.1	72.5	43.5	168.5	55.6	41.5
LnGrp LOS	F	E	D	F	E	D	F	E	D	F	E	D
Approach Vol, veh/h		1565			3062			894			2175	
Approach Delay, s/veh		96.2			66.1			65.2			94.2	
Approach LOS		F			E			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.3	60.7	17.2	59.8	30.0	73.0	41.0	36.0				
Change Period (Y+Rc), s	5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8				
Max Green Setting (Gmax), s	37.5	40.9	* 12	64.3	* 24	53.2	* 35	41.0				
Max Q Clear Time (g_c+Q), s	47.2	32.3	5.2	40.1	26.3	62.3	37.3	23.3				
Green Ext Time (p_c), s	0.0	3.9	0.1	9.3	0.0	0.0	0.0	4.7				
Intersection Summary												
HCM 2010 Ctrl Delay			80.0									
HCM 2010 LOS			F									
Notes												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	110	115	681	165	125	235	770	1110	371	1045	65
Future Volume (veh/h)	95	110	115	681	165	125	235	770	1110	371	1045	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	103	120	125	740	179	136	255	837	1207	403	1136	71
Adj No. of Lanes	1	1	1	2	1	0	1	2	2	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	340	275	736	317	241	259	876	1264	393	1142	499
Arrive On Green	0.07	0.18	0.18	0.21	0.32	0.32	0.15	0.25	0.25	0.22	0.32	0.32
Sat Flow, veh/h	1774	1863	1505	3442	975	741	1774	3539	2699	1774	3539	1547
Grp Volume(v), veh/h	103	120	125	740	0	315	255	837	1207	403	1136	71
Grp Sat Flow(s),veh/h/ln	1774	1863	1505	1721	0	1716	1774	1770	1350	1774	1770	1547
Q Serve(g_s), s	7.6	7.5	9.9	28.5	0.0	20.2	19.1	31.1	33.0	29.5	42.7	4.3
Cycle Q Clear(g_c), s	7.6	7.5	9.9	28.5	0.0	20.2	19.1	31.1	33.0	29.5	42.7	4.3
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	340	275	736	0	557	259	876	1264	393	1142	499
V/C Ratio(X)	0.81	0.35	0.46	1.01	0.00	0.57	0.98	0.96	0.96	1.03	1.00	0.14
Avail Cap(c_a), veh/h	212	503	406	736	0	626	259	876	1264	393	1142	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	47.6	48.6	52.4	0.0	37.2	56.7	49.4	34.8	51.9	45.1	32.1
Incr Delay (d2), s/veh	11.7	0.6	1.2	34.6	0.0	0.9	50.9	20.3	15.8	52.4	25.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.9	4.2	17.0	0.0	9.8	13.0	17.7	24.0	20.1	24.9	1.9
LnGrp Delay(d),s/veh	72.7	48.3	49.8	87.0	0.0	38.2	107.6	69.8	50.6	104.3	70.5	32.2
LnGrp LOS	E	D	D	F		D	F	E	D	F	E	C
Approach Vol, veh/h		348			1055			2299			1610	
Approach Delay, s/veh		56.0			72.4			63.9			77.2	
Approach LOS		E			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.0	37.5	33.0	28.8	24.0	47.5	14.0	47.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	29.5	33.0	28.5	36.0	19.5	43.0	15.9	48.6				
Max Q Clear Time (g_c+I1), s	31.5	35.0	30.5	11.9	21.1	44.7	9.6	22.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.1	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			69.1									
HCM 2010 LOS			E									

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	1250	779	73	75	120
Future Vol, veh/h	165	1250	779	73	75	120
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	150
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	1359	847	79	82	130
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	927	0	-	0	1926	464
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	1038	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	733	-	-	-	~ 58	545
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	732	-	-	-	~ 44	544
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	302	-
Approach	EB	WB	SB			
HCM Control Delay, s	1.3	0			62	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	732	-	-	-	94	544
HCM Lane V/C Ratio	0.245	-	-	-	0.867	0.24
HCM Control Delay (s)	11.5	-	-	-	139.3	13.7
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1	-	-	-	4.8	0.9
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	806	1600	80	345	1140	821	70	1156	370	641	1039	486				
Future Volume (veh/h)	806	1600	80	345	1140	821	70	1156	370	641	1039	486				
Number	5	2	12	1	6	16	3	8	18	7	4	14				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	876	1739	87	375	1239	892	76	1257	402	697	1129	528				
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	732	1718	638	358	1164	655	224	1158	519	637	1768	875				
Arrive On Green	0.21	0.34	0.34	0.10	0.23	0.23	0.07	0.23	0.23	0.19	0.35	0.35				
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1558	3442	5085	1548				
Grp Volume(v), veh/h	876	1739	87	375	1239	892	76	1257	402	697	1129	528				
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1558	1721	1695	1548				
Q Serve(g_s), s	38.3	60.8	6.2	18.7	41.2	41.2	3.8	41.0	41.0	33.3	33.5	41.0				
Cycle Q Clear(g_c), s	38.3	60.8	6.2	18.7	41.2	41.2	3.8	41.0	41.0	33.3	33.5	41.0				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	732	1718	638	358	1164	655	224	1158	519	637	1768	875				
V/C Ratio(X)	1.20	1.01	0.14	1.05	1.06	1.36	0.34	1.09	0.77	1.09	0.64	0.60				
Avail Cap(c_a), veh/h	732	1718	638	358	1164	655	229	1158	519	637	1768	875				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	70.8	59.6	33.9	80.6	69.4	52.7	80.4	69.5	54.2	73.3	49.2	26.4				
Incr Delay (d2), s/veh	101.4	24.8	0.4	60.9	45.3	172.3	0.9	52.7	7.2	64.3	0.8	1.2				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	28.5	32.4	2.8	11.9	24.2	63.9	1.8	24.9	19.0	21.5	15.8	17.8				
LnGrp Delay(d),s/veh	172.2	84.4	34.4	141.6	114.7	225.0	81.3	122.2	61.4	137.6	50.0	27.6				
LnGrp LOS	F	F	C	F	F	F	F	F	E	F	D	C				
Approach Vol, veh/h	2702				2506				1735							
Approach Delay, s/veh	111.3				158.0				106.3							
Approach LOS	F				F				F							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	24.4	68.8	17.4	69.4	44.0	49.2	39.0	47.8								
Change Period (Y+Rc), s	* 5.7	8.0	* 5.7	6.8	* 5.7	8.0	* 5.7	6.8								
Max Green Setting (Gmax), s	* 19	60.8	* 12	62.3	* 38	41.2	* 33	41.0								
Max Q Clear Time (g_c+I1), s	20.7	62.8	5.8	43.0	40.3	43.2	35.3	43.0								
Green Ext Time (p_c), s	0.0	0.0	0.1	10.3	0.0	0.0	0.0	0.0								
Intersection Summary																
HCM 2010 Ctrl Delay	112.7															
HCM 2010 LOS	F															
Notes																

End of Appendices