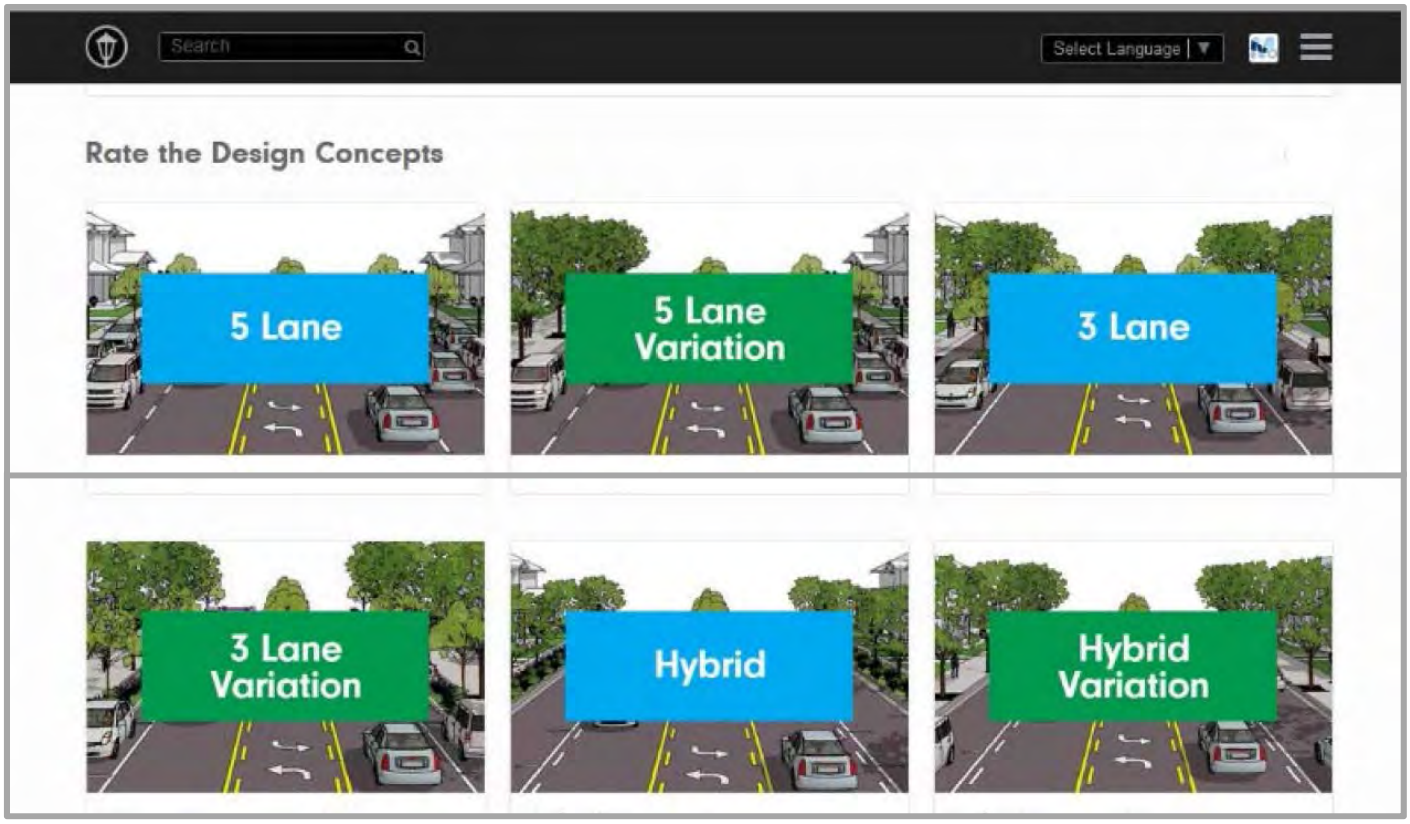
CORRINE DRIVE

COMPLETE STREETS STUDY

Technical Report & Design Concepts

February 2018



metroplan orlando

A REGIONAL TRANSPORTATION PARTNERSHIP

DRAFT

CORRINE DRIVE
COMPLETE STREETS STUDY

Table of Contents

CORRINE DRIVE
COMPLETE STREETS STUDY

Updates as of Feb. 2, 2018

Pages 10, 11, 14, and 16 of this report have been updated since it was first printed in January 2018. These updates reflect revised travel times, caused by a data entry error in the reporting of the 3-Lane Concept travel time statistic.

The first report stated that the rush hour travel time for the **3-Lane Concept and 3-Lane Concept Variation** is 27.3 minutes in the morning. **The morning rush hour travel time has been corrected to 29.8 minutes.** The evening rush hour drive time remains 23.8 minutes, as originally reported.

Travel times for the other design concepts (5-Lane, 5-Lane Variation, Hybrid, and Hybrid Variation) were not affected by this data input error. Travel times for these design concepts have been re-checked. No other errors were found.

In addition to the revised data analysis in this version of the document, we have added **Appendix A: Travel Time Reports**. It includes a memo on how travel times were calculated, the engineering spreadsheet with the calculations, and copies of the output reports from the computer software that was used to run the travel times. This additional information, while highly technical, presents all the data behind the summary calculations that accompany the design concepts.

Possible Paths to Corrine's Future

People who know the Corrine Drive area describe it as energetic and friendly. But the major street through this vibrant neighborhood reflects another place altogether. Those who use the road say it needs maintenance; offers haphazard accommodation for cyclists, pedestrians or those with special needs; and is plagued by speeding vehicles and a lack of safe parking.

The Corrine Drive Complete Streets Study aims to help Corrine -- between Mills Avenue and Bennett Road – live up to its potential, by examining and ultimately recommending ways to improve transportation options along the 2-mile corridor. During the past year, the study completed a period of gathering data and listening to those who use Corrine to learn about its challenges and opportunities. Most recently, the study has focused on developing conceptual designs for Corrine Drive. This report describes the study's second phase and provides details about six ideas or possible design concepts that could be refined into a plan for making Corrine Drive friendlier for everyone -- a Complete Street.

The design concepts presented here include a **5-Lane** (4 travel lanes plus center turn lane), a **3-Lane** (2 travel lanes plus center turn lane) and a **Hybrid** (5-Lane design on weekdays, switching to the 3-Lane on weekends when traffic is lighter). Each of these has a variation that reconfigures parking and sidewalks to create a shared-use path.

The concepts and their variations are only preliminary ideas, and all would still need refining to become viable plans. No concept has been selected for Corrine Drive, and it's possible that elements from more than one concept might be combined in the final phase of the study as the best way to improve Corrine.

Technical data, public feedback, and planning best practices were used in determining which areas of concern to address along the corridor and in developing the concepts that offer solutions to some of the biggest problems. As with most challenges, **no perfect solution** presented itself. The result is, rather, a series of comparisons and trade-offs. In addition to concepts, this report offers possible improvements and safety solutions that could be made, regardless of the final plan for the road.

As the region's transportation planning agency, MetroPlan Orlando – in coordination with Orange County, the City of Orlando, and City of Winter Park – is conducting this independent analysis.

Recap of Existing Conditions

The Corrine Drive Complete Streets Study has three phases. The first phase, which gathered data and opinions on existing conditions, ended in late summer 2017. MetroPlan Orlando collected data about what is currently on Corrine Drive, what is within a mile of the street, and how the area is likely to evolve in the next couple of decades. The team analyzed data related to traffic, air quality, public health, economic conditions, demographics, utilities, and much more.

MetroPlan Orlando employed a robust public outreach strategy, alongside the data gathering, to identify the community's wishes and learn what improvements people want on Corrine Drive. The main tool for getting public opinion was an 11-question survey, which received 1,705 responses.

Documents from Phase 1 of the study – including the Community Survey Report and the Existing Conditions Report -- can be found at CorrineDriveStudy.org under *Phase 1: Corrine Drive's Transportation Story in Data, Images & Video*.

The following table shows how the community's desires for improving the corridor align with the original study objectives and the data from the Existing Conditions Report.

STUDY OBJECTIVES (Survey Rankings)	**RELATED SURVEY RESPONSES**	**EXISTING CONDITIONS RESULTS**
Creating a safe and supportive environment for walking and cycling	85% wanted pedestrian improvements, and 61% asked for bicycle improvements; 80% said Corrine is somewhat unsafe or very unsafe for cyclists; 68% said it is somewhat or very unsafe for pedestrians	Road design encourages speeds higher than posted; 75% of vehicles speed in the area, making walking and cycling less comfortable; Sidewalks are inconsistent, narrow, and often obstructed with utility poles; sidewalks don't comply with Americans with Disabilities Act; no bike lanes or amenities, little bike parking and inadequate signage; poor lighting; no Safe Routes to School strategies in place, despite K-8 school opening in 2018
Improving the appearance of the corridor	47% asked for beautification along the corridor	Battered pavement (most sections scoring in 20s and 30s on 100-point scale), lack of street trees or landscaping, uneven sidewalks, no public art or gateway features
Ensuring accessibility to destinations and neighborhoods surrounding the corridor	22% mentioned access issues among pedestrian and road design desires, saying access good only for vehicles	Although 35% of households are within 10-minute walk of Corrine commercial hub, many say they do not walk or cycle there because they don't feel safe
Maintaining minimal traffic in residential neighborhoods	27% mentioned minimizing neighborhood traffic impact as a desire to protect the area's character	About 50% of the weekday vehicles on Corrine travel through the area without stopping, so they don't travel on residential streets. 35% start or stop a trip within the area; 15% start and stop a trip within the area
Assessing the parking needs in the area	33% desired more and safer parking; lack of space for parking most often cited (18%) as an obstacle to achieving vision for area	342 on-street parking spots on Corrine, many of them narrower than 7 feet – the City of Orlando code width and a nationally recognized standard width
Connecting trails in the surrounding area	4% specifically noted a desire for trail connections; 16% desired bike facilities that could make connections	Cady Way Trail and Orlando Urban Trail have access points nearby, but do not connect because of a lack of bike lanes or markings
Improving transit service	9% listed improved transit as the #1 or #2 desire for the area	Transit options are limited, with 2 LYNX routes serving the area; bus stop amenities are inadequate; boardings average less than 1 person a day on the corridor

Developing Design Concepts

By aligning community perceptions and desires with objective data, the Phase 1 analysis gave focus to the Phase 2 process — developing Complete Street conceptual designs. MetroPlan Orlando

followed the series of steps below to turn identified priorities and ideas into the concepts presented in this report.

Established Ground Rules: At the start of Phase 2, these guidelines were set out before starting the design process:

- Each concept presented to the public would offer **a simplified, consistent look** for the 2-mile corridor. Currently, there are 10 looks on Corrine between Mills Avenue and Bennett Road.
- Corrine Drive would be **repaved**, improving the appearance and safety of the area.
- **On-street parking** would be incorporated in some way into every concept.
- All concepts would **fit within the existing 80 feet of public right-of-way**. MetroPlan Orlando would not present any concepts that required the acquisition of property.

Reviewed Industry Best Practices to Identify Possible Improvements: MetroPlan Orlando combined the community's ideas with best practices for addressing technical concerns. The transportation industry standards used are outlined in the next section of this report. Taken together, MetroPlan Orlando and the local government partners had a long list of design ideas, which were used to form the concepts.

Develop Concepts: MetroPlan Orlando and its local government partners turned the long list of design ideas into several concepts and potential location-specific solutions to address safety concerns. Then details in each concept were examined to determine how they addressed Corrine Drive's issues. Specifically, the concepts were analyzed through a Complete Streets lens – addressing the experience, regardless of how someone travels, their age, or possible mobility issues.

Finalize Concepts: In order to prepare the basic design concepts for public feedback, MetroPlan Orlando analyzed each one against a set of criteria and how each contributed to a person's experience walking, biking, or driving. This included calculating vehicle drive times for all the concepts, along with sidewalk widths and bike facilities. Safety was a particular consideration as well as the ability of each concept to reduce speeding.

Gather Feedback: Public outreach in this second phase of the study uses a digital platform and a series of pop-up meetings to hear from the community. The public is being asked to provide input on the different road designs through Neighborland, an online forum that presents the design concepts and possible safety solutions so people can compare their attributes.

In Neighborland, users can see concept and improvement sketches and provide detailed feedback. We'll also have in-person opportunities to learn more. Versions of the design concepts and safety solutions are also on MetroPlanOrlando.org and available in printed copies. MetroPlan Orlando will use public reactions to the preliminary design concepts to help shape the draft plan that will be presented in the next phase of the study, which will be the third and final phase.

Criteria for the Concepts

In addition to technical data and community priorities, MetroPlan Orlando reviewed best practices resources and research reports related to Complete Streets, health, and Safe Routes to Schools in preparation for developing the Corrine Concepts.

Among the criteria for the concepts is making Corrine comply with the Americans with Disabilities Act (ADA), which mandates that public spaces accommodate people with disabilities. Federal law requires any public right-of-way to be ADA-accessible once it is repaved. The ADA standards can differ, depending on what's around the area and where obstacles might be located. Generally, planners try to identify characteristics that support universal design – the idea that you can create an environment usable for anyone, no matter their ability. The Federal Highway Administration (FHWA) says that a minimum of 4 feet of space must be available in the pedestrian travel zone, but 6-8 feet is preferred in areas with a high amount of pedestrians.[i]

Corrine Drive is an urban minor arterial with 23,000 cars on the average weekday and a 35 mph posted speed limit in most sections. This means that Corrine requires different design elements and safety improvements than local streets in surrounding neighborhoods, which have fewer cars and lower speeds. MetroPlan Orlando wanted to know what elements would create a safe and supportive environment for walking and biking. Design strategies to help children walk or bike to the Audubon Park K-8 School, opening in 2018, were of particular interest.

MetroPlan Orlando relied heavily on the resources from the National Association of City Transportation Officials (NACTO). The ITE Context-Sensitive Guide and the World Resources Institute's Cities Safer by Design report also informed the design elements featured within the Corrine Concepts. These sources pointed toward the design elements needed to create the safest and most supportive environment possible for cycling and walking on Corrine Drive.

Recent studies have linked dedicated bicycle facilities to positive health behaviors, such as increased physical activity. In 2016, the Community Preventive Services Task Force published its review of 90 research studies. Its main finding confirmed the vital connection between health and our built environment. Transportation improvements, like sidewalks and bike lanes, combined with a mix of land uses and parks can help the public lose weight, reduce their risk of chronic disease, and improve mental health.[ii]

KEY TERMS

Here are some terms used in the design concept descriptions:

Shared-Use Path: Paved path that supports multiple forms of non-motorized transportation, such as walking and biking

Cycle Tracks: Bike lanes that provide a horizontal or vertical separation between cars and bikes. They are the recommended bicycle facility for streets with more than 6,000 cars and speeds greater than 25 mph.

Sharrows: Shared lane markings that offer directional and wayfinding support for cyclists and are best suited for streets with less than 3,000 cars per day and a speed limit of 25 mph or less

Bulbouts: Extension of the sidewalk or corner of an intersection, that often include trees, located in spaces with higher numbers of pedestrians, and considered a traffic calming measure

Bicycle Boulevard: Street with low traffic and freight volumes, marked with signs and pavement markings

Quality of Service: Traveler-based perception of how well a service or facility is operating

One of the biggest safety needs for Corrine Drive is to slow down vehicles to the posted speed of 35 mph, since 75% of vehicles in some areas are traveling above the speed limit. Several road design improvements could encourage cars to travel the existing speed limit, such as:

- **Narrowing Lanes**: Width of travel lanes has an effect on vehicle speed, according to NACTO. Wider lanes – 11 to 13 feet – often encourage vehicles to travel at higher speeds. Lanes 10 or 10.5 feet promote slower speeds without impacting traffic operations.
- **Reducing the Number of Lanes:** This narrows the travel path for vehicles and is considered a design feature to reduce speeding. Studies show streets with fewer lanes tend to be slower.
- **Raising Pavement:** This slows cars at certain locations, and is used for speed humps, raised crosswalks, and raised intersections. The raised pavement also increases a driver's awareness of someone crossing the street and can give the appearance of a pedestrian-friendly zone, according to the World Resources Institute's Cities Safer by Design report.
- **Adding Trees**: This can make a street appear narrower, and the visual technique can help reduce vehicle speeds and crashes, according to NACTO. Additionally, street trees improve air quality, reduce storm water runoff, and enhance mental well-being.
- **Creating an Inviting Pedestrian Environment:** The space beyond the travel lane can have an effect on how fast cars drive. Such features as plazas, wide sidewalks, benches, and tables, are evidence of a vibrant street with economic activity. An inviting pedestrian realm can decrease the number of cars traveling above the posted speed and reduce injuries from crashes, according to the Cities Safer by Design report.

After reviewing this information, MetroPlan Orlando established a set of objective criteria for evaluating each concept. Three criteria were selected to make it easier to present the concepts simply and objectively. Once a single concept is advanced to the next phase of the study, more complexity and evaluation will be included related to the community's priorities and key technical issues.

Concepts were evaluated individually, not against each other. The criteria focus on quality of service, which is defined by performance from a specific perspective. More information about this technique is in the Florida Department of Transportation Quality/Level of Service Handbook. For the Corrine Drive study, quality of service was examined from three points of view: the pedestrian, the bicyclist, and the driver. Safety is embedded within each perspective.

For pedestrians, these elements were analyzed:

- **Separation Between Travel Lane and Sidewalk:** The presence of a vertical barrier protects pedestrians on the sidewalk from cars in the travel lane. For a Complete Street, these barriers can be trees, planters, or another type of aesthetically-pleasing feature.
- **Width of Sidewalk:** Minimum sidewalk width to meet ADA standards is 5 feet. The City of Orlando and Orange County have varying required sidewalk widths, based on what surrounds the street. MetroPlan Orlando considered how many people can walk side by side or if someone in a wheelchair can travel unimpeded in determining sidewalk width.
- **Speed of Vehicles:** This can influence someone's decision to walk to a destination, so designs were evaluated on whether they encouraged slower vehicle speeds.
- **Crossing Distance at Intersections:** The distance and time it takes for someone to cross the street can affect their desire to walk. The shorter the crossing distance, the less time a pedestrian is exposed to vehicle traffic.
- **Shade and Lighting:** These are important for creating a safe and supportive environment for walking. Shade can come from street trees or bus shelters. Lighting helps make pedestrians more visible at night.

For bicyclists, these were the considerations:

- **Separation Between Travel Lane and Dedicated Bicycle Facilities**: A barrier enhances the comfort of riding a bicycle on a dedicated facility. The type of barrier depends on the type of

street. For Corrine Drive, the recommended barrier is a vertical buffer, such as a bollard, between a travel lane and dedicated bicycle facility.

- **Type of Bicycle Facility**: The type of facility often affects whether someone chooses to ride a bike. Bicycle facilities include sharrows (see Key Terms box for definition), bike lanes, cycle tracks, shared-use paths, or multi-use trails. The facility that provides a bicyclist a safe and comfortable riding environment depends on the number and speed of cars on the street.
- **Potential for Cyclists to Ride in the "Door Zone":** When bicycle lanes are next to parking spots, there's a chance that someone getting out of a vehicle will create a hazard by opening the door into the path of someone riding a bike.
- **Vehicle Speed:** The speed of vehicles can influence someone's decision to ride a bike on that street. The designs were evaluated based on if they encouraged slower vehicle speeds.
- **Lighting:** Proper lighting should illuminate the bicyclist, providing them light to ride but also to increase driver awareness.

For drivers, quality of service includes:

- **Capacity & Vehicle Drive Times:** The ability of the travel lanes and intersections to handle current and projected vehicle volumes is a key factor in traffic operations.
- **Traffic diversion:** The potential for cars to divert from traveling on Corrine Drive to using a neighborhood street and the number that would do so per hour during rush hour was measured.
- **Parking:** The presence of parking spots wide enough to meet current requirements helps avoid sideswiping and crashes with parked vehicles.
- **Queuing at intersections:** The length of the line of cars stopped at a traffic signal during the red light phase affects how much time it takes to get through the intersection. This is associated with rear-end collisions.

Safe Routes to School Strategies

The opening of the Audubon Park K-8 School in August 2018 put a priority on making it safe for a young student to walk or bike to school. A Safe Routes to School program includes a variety of policies, design interventions, and educational efforts. For the Corrine Drive Complete Streets Study, MetroPlan Orlando focused on design features that would make it easier and safer to walk or bike around the new school. These design features include signage, pavement markings, sidewalks at least 5 feet wide, a buffer between the sidewalk and vehicle travel lane, lighting, elements that reduce the distance to cross the street, and more.[iii]

What If We Do Nothing?

Doing nothing and keeping Corrine Drive as it currently is would be what we call the No-Build option. If selected, this option would require MetroPlan Orlando to stop the study. The key issues identified in the first phase -- speeding, lack of pedestrian facilities, and poor pavement conditions – will worsen. Additionally, the corridor would not comply with the Americans with Disabilities Act.

Some current conditions on Corrine are shown below, including the width of sidewalks, average time it takes a pedestrian to cross, landscaping features, special bike facilities, regional trail connections, the vehicle drive time at morning and evening rush hours, and availability of on-street parking.

Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

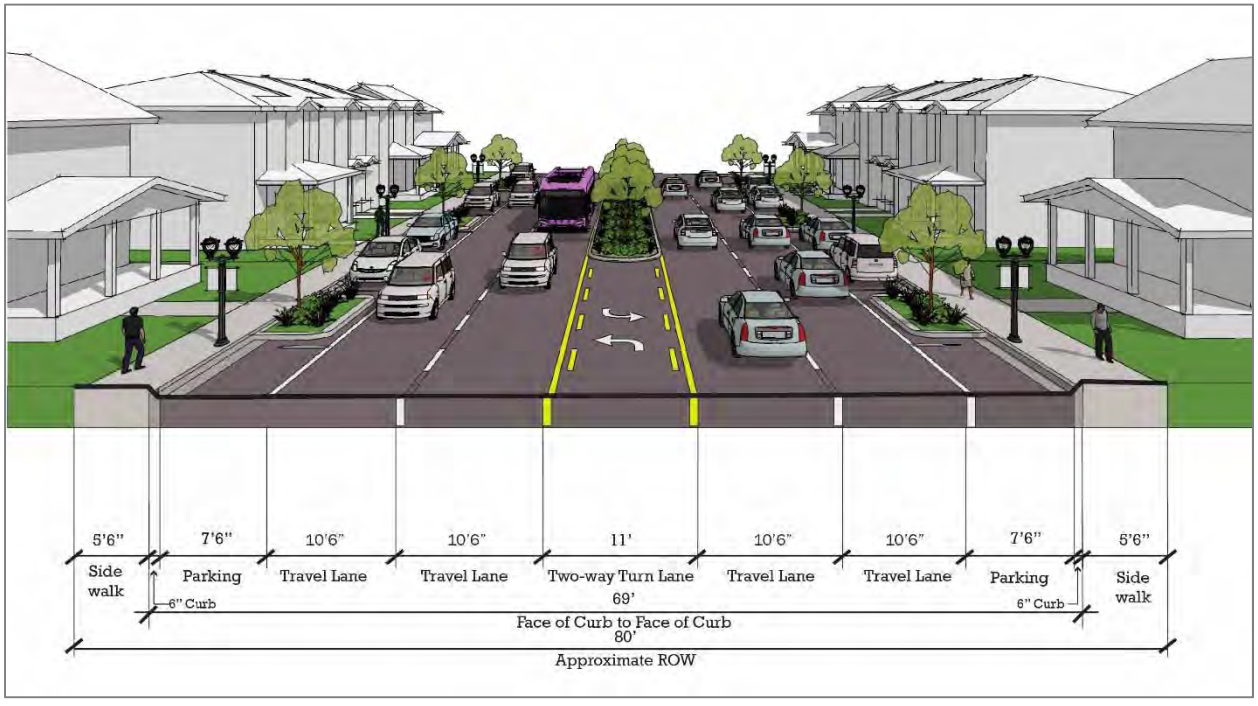
Preliminary Design Concepts

A Complete Street safely and comfortably accommodates people of all ages and abilities. Each of the three concepts presented in this report contains design elements that address speeding, pedestrian safety, and other key issues identified in the first phase of the study.

MetroPlan Orlando is presenting a 5-Lane Concept, 3-Lane Concept, and Hybrid Concept (5 lanes on weekdays, 3 lanes on weekend). Each concept has a variation.

Each of the concepts and variations is accompanied by a table showing: width of sidewalks, average time it takes for a pedestrian to cross at intersections, what landscape features would be added, dedicated bicycle facilities, connections to regional trails, vehicle drive times at rush hour, and availability of on-street parking. This information is compared to the conditions on Corrine today.

5-Lane Concept



This concept provides 4 travel lanes plus a center turn lane, with periodic landscaped medians. It offers parallel parking, a sidewalk, and trees on each side of the road.

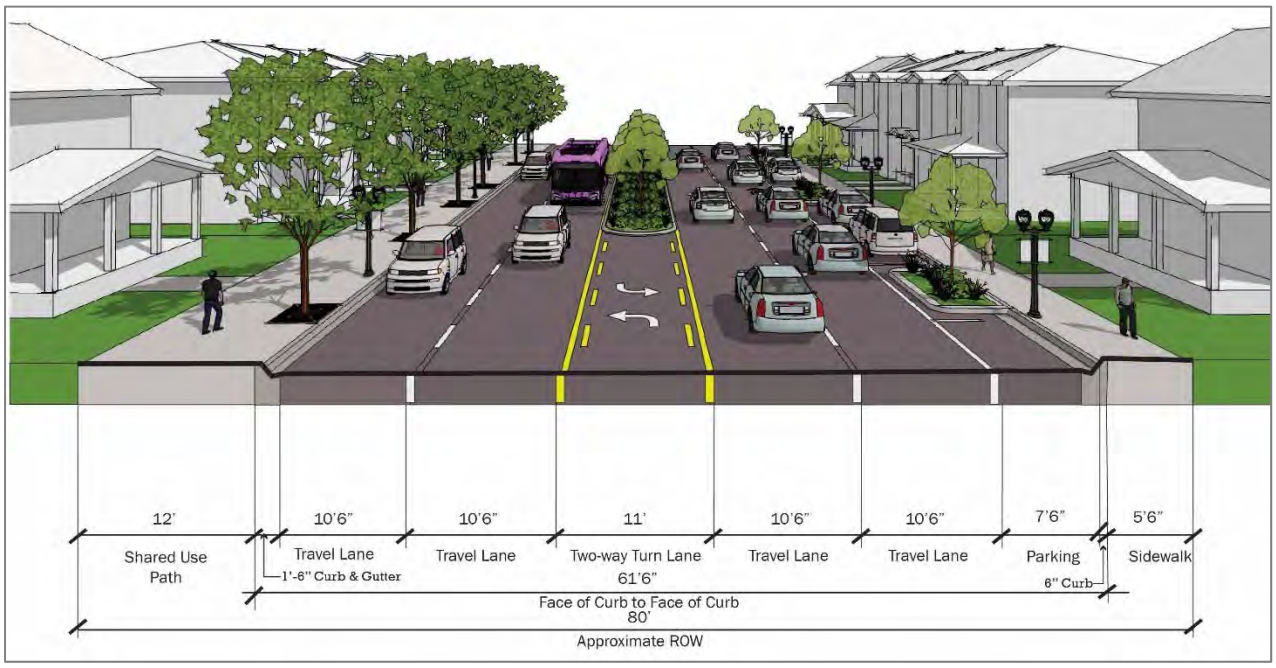
Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
5.5 feet, both sides	19 seconds	Tree grates in parking lanes, both sides	None	No	6.3-7.5 minutes	Both sides
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

The two travel lanes in each direction support the existing and projected traffic volume — roughly 23,000 cars each day Monday through Friday. If implemented, rush-hour drive time stays about the same as it is right now — 6 to 8 minutes to travel the two miles. The narrow lanes, 10.5 feet wide, are designed to enforce the existing speed limit.

The 11-foot center turn lane allows for comfortable left turns into driveways and businesses throughout the two miles. Two people can walk side by side on the 5.5-foot-wide sidewalk. The 7.5-foot-wide parking lane separates the sidewalk from the travel lanes. The width of the parking lane complies with the City code for Corrine, which requires a minimum of 7 feet for on-street parking.

Trees would be in the bulbouts, interspersed throughout the parking lane. With five lanes of pavement (68 feet) to cross, it will take about 19 seconds for an able-bodied adult to cross the street. The 5-Lane Concept has no space for dedicated bike facilities within the public right of way.

5-Lane Concept Variation

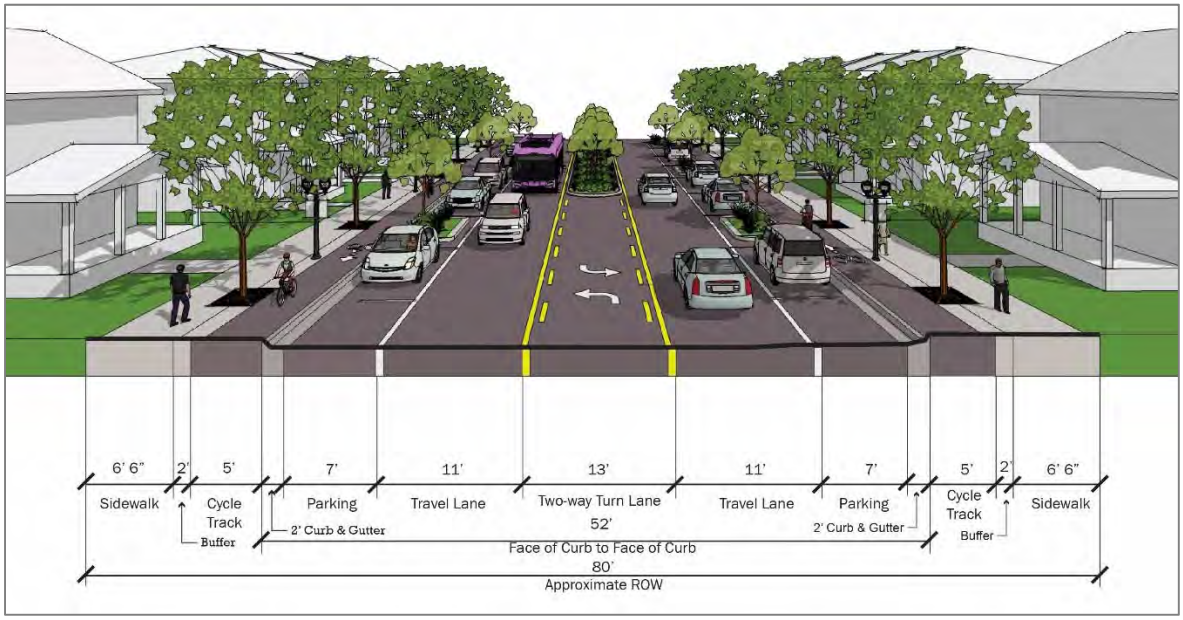


The 5-Lane Concept Variation turns the sidewalk and on-street parking on the north side of the street into a 12-foot shared-use path. The path offers space for people to walk side by side or for families

to ride their bikes — while separated from cars. The changes result in no on-street parking in front of all the businesses and homes on the north side of Corrine Drive. Street parking would be available on the south side of the road. With a shared-use path, the crossing distance at intersections is 17 seconds for the average person. Rush-hour drive times would remain roughly the same as today.

Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
5.5 feet, south side; 12-foot shared-use path, north side	17 seconds	Tree grates in parking lanes, both sides	12-foot shared-use path, north side	Via shared-use path	6.3-7.5 minutes	South side only
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

3-Lane Concept



This concept provides 2 travel lanes plus a center turn lane, with periodic landscaped medians. It offers a sidewalk with trees and a cycle track on each side of the road that is separated from moving vehicles by a barrier and parked cars. The cycle track is separated from pedestrians by tree grates along the sidewalk.

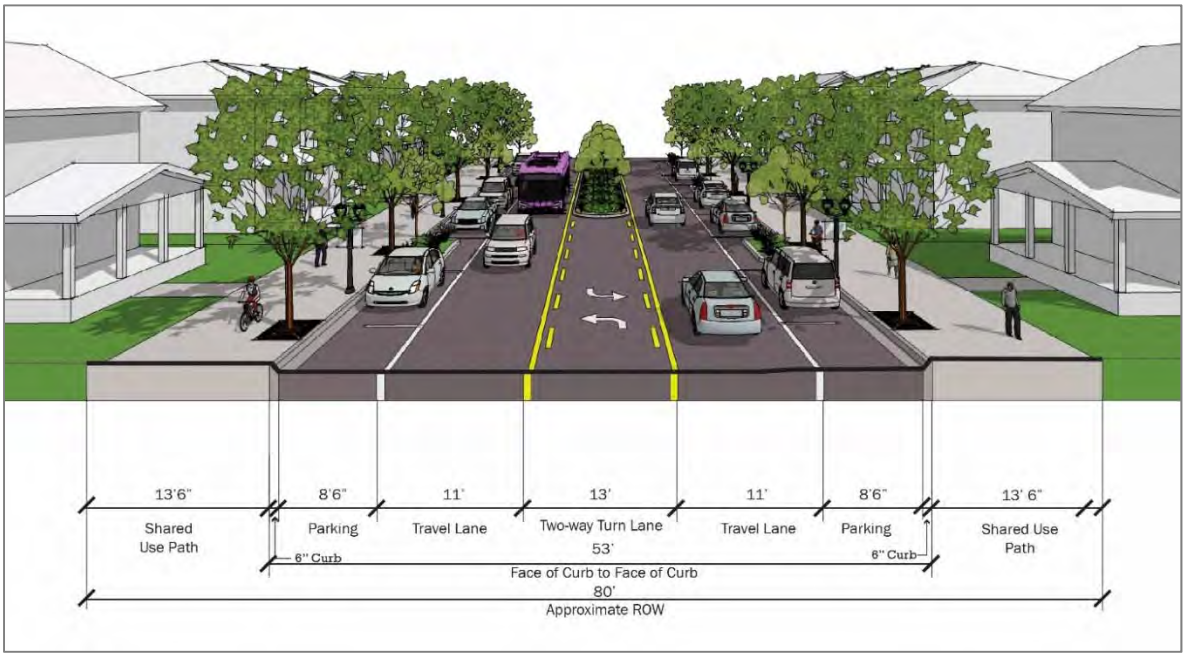
Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
6.5 feet, both sides	14 seconds	Tree grates between sidewalk and cycle track	5-foot separated cycle track, both sides	Via separated cycle track	23.8-29.8 minutes	Both sides
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

The 3-Lane Concept offers the biggest change from the Corrine Drive of today. Removing 2 travel lanes affects current rush hour drive times significantly, adding about 20 minutes to the travel time for the corridor. The projected time it would take for someone to drive the entire two miles goes up to 30 minutes westbound in the morning and 24 minutes eastbound in the evening. It is possible drivers would use local neighborhood streets to avoid driving on Corrine Drive. To travel the corridor at today's rush hour drive time, 300-400 cars per hour would need to divert to local streets during the peak driving times in the morning and evening.

The drive times have the potential to affect an emergency vehicle's ability to get where it needs to go. Additionally, the potential is high for a lengthy line of cars waiting to move through the intersections, which could increase the likelihood of rear-end crashes.

This concept offers the most accommodations for pedestrians and cyclists. Six and a half feet of sidewalk on each side allow for three or more people to walk side by side. For an able-bodied adult to walk from one side of the street to the other, the time is approximately 14 seconds —a crossing distance of 49 feet. A cycle track – 5 feet wide – is located on both sides, offering cyclists space to ride separated from the travel lane. Trees would be planted in grates between the sidewalk and the cycle track. Seven feet on each side is dedicated to street parking.

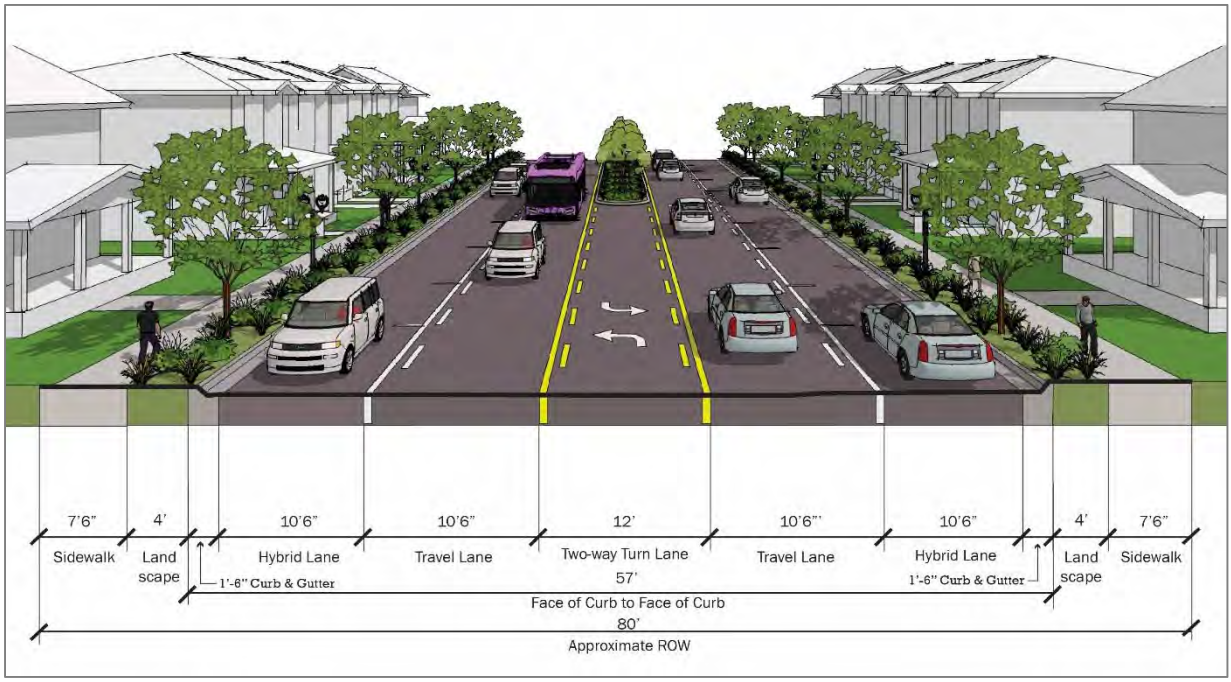
3-Lane Concept Variation



With the 3-Lane Concept Variation, the separated cycle track and sidewalk on each side of the road are replaced with a 13.5-foot shared-use path. This change decreases the crossing distance to 43.5 feet, meaning an able-bodied adult should be able to cross the intersection in 12 seconds. Everything else stays the same as with the 3-Lane Concept.

Sidewalk Width	Intersection Crossing Time	Landscaping &Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
13.5-foot shared use path, both sides	12 seconds	Tree grates as part of shared-use path	13.5-foot shared-use path, both sides	Via shared-use path	23.8-29.8 minutes	Both sides
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

Hybrid Concept



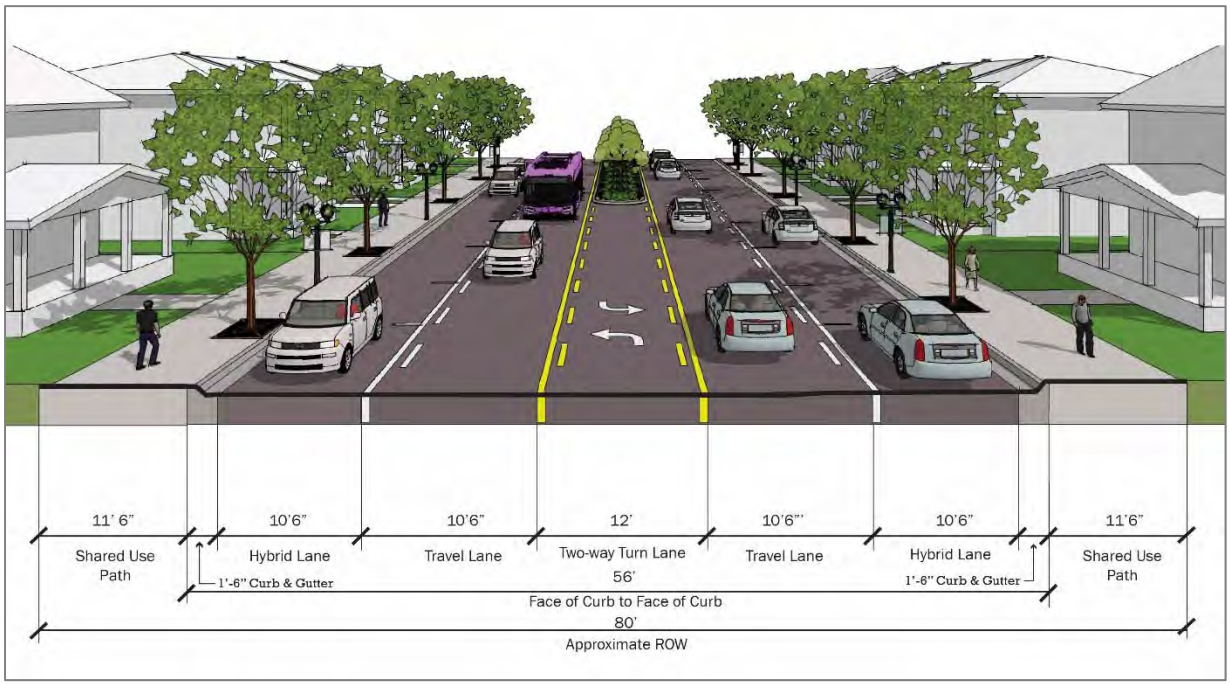
On weekdays, this concept provides 5 lanes (4 travel lanes plus a center turn lane). On weekends, when traffic is lighter, the 2 outside travel lanes are converted to parallel parking. This is currently done in other places in Orlando – including downtown on Orange Avenue and in the Milk District on Robinson Street. The concept offers a sidewalk on each side of the road, with landscaping.

Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bicycle Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
7.5 feet, both sides	15 seconds	4-foot planting strip, both sides	None	No	6.3-7.5 minutes	Both sides, weekends only
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

Called the Hybrid Concept because it combines features of the 5-Lane and 3-Lane concepts, it changes the function of the outside lanes on weekends. This configuration supports current and future traffic volume – 23,000 cars Monday to Friday and fewer than 18,000 on the weekend. The reduction in the number of lanes on the weekend would support existing traffic volume, while making it harder to travel above the posted speed limit. Rush hour drive times stay about the same as today – 6-8 minutes to travel the 2 miles.

The Hybrid Concept is possible through a policy tool informally known as Cinderella Parking. This is a parking regulation that enforces a no-parking rule during certain hours of the day or week, while allowing parking at other times. No on-street parking is available during the week, however there is a wide parking strip (10.5 feet) on the weekends. The 7.5-foot sidewalk allows for three people to walk side by side. An able-bodied person could walk across the street in 15 seconds. A 4-foot buffer with trees and other landscaping separates the sidewalk from the outside travel lane/parking strip. There is no change in existing travel times – 6-8 minutes for the 2 miles every day of the week. There is no room within the public right-of-way for dedicated bicycle facilities with the Hybrid Concept.

Hybrid Concept Variation



The Hybrid Concept Variation provides for a separated bicycle and pedestrian facility via an 11.5-foot shared-use path on both sides of the road. This is accomplished by replacing the sidewalk and landscape buffer from the Hybrid Concept. Landscaping is still a vital element, though. It is incorporated into the Hybrid Concept Variation through tree grates within the shared-use path. Rush hour drive times would remain roughly the same as today. Like the Hybrid Concept, this variation has 5 lanes on the weekdays and 3 lanes on weekends.

Sidewalk Width	Intersection Crossing Time	Landscaping & Shade	Bike Facilities	Connect to Trails	Rush Hour Drive Time	On-Street Parking
11.5-foot shared-use path, both sides	15 seconds	Tree grates as part of shared-use path	11.5-foot shared-use path, both sides	Via shared-use path	6.3-7.5 minutes	Both sides, weekends only
Compared to Corrine Today						
0-4 feet, intermittent	19 seconds	None	None	No	6.3-7.5 minutes	Only on some sections

Matrix

Corrine Drive today has a variety of issues -- from speeding vehicles to lack of facilities for cyclists and pedestrians. The concepts presented here address the issues and the community's ideas to varying degrees. None perfectly addresses everything, and each would require trade-offs if advanced to the next phase of the study. This matrix offers a side-by-side comparison of all the concepts and their variations. This makes it easier to see the trade-offs associated with implementing each concept.

What the concepts offer:	**No-Build**	**5-Lane**	**5-Lane Variation**	**3-Lane**	**3-Lane Variation**	**Hybrid**	**Hybrid Variation**
FOR THE WALKING EXPERIENCE							
Sidewalk Width	From 0-4 ft. (a 6-ft. section, Forest Ave.)	5.5 ft. on both sides	5.5 ft. on south side; 12-ft. shared-use path on north side	6.5 ft. on both sides	13.5-ft. shared-use path on both sides	7.5 ft. on both sides	11.5-ft. shared-use paths on both sides
Intersection Crossing Time	19 seconds (68 ft.)	19 seconds (68 ft.)	17 seconds (60 ft.)	14 seconds (49 ft.)	12 seconds (43.5 ft.)	15 seconds (54 ft.)	15 seconds (54 ft.)
Landscaping & Shade	None	Tree grates on both sides	Tree grates on both sides	Tree grates between sidewalk, cycle track	Tree grates on both sides	4-foot planting strip on each side	Tree grates on both sides

FOR THE CYCLING EXPERIENCE							
Designated Bike Facilities	None	None	12-ft. shared-use path on north side	5-ft. separated cycle track on both sides	13.5-ft. shared-use paths on both sides	None	11.5-ft. shared-use paths on both sides
Connection to Regional Trails	No	No	Yes, via shared-use path	Yes, via separated cycle tracks	Yes, via shared-use paths	No	Yes, via shared-use paths
FOR THE MOTOR VEHICLE DRIVER							
Rush Hour Drive Times (Time to drive 2 miles using current traffic numbers in direction of most traffic)	6.3 min. AM 7.5 min. PM	6.3 min. AM 7.5 min. PM	6.3 min. AM 7.5 min. PM	29.8 min. AM 23.8 min. PM	29.8 min. AM 23.8 min. PM	6.3 min. AM 7.5 min. PM	6.3 min. AM 7.5 min. PM
On-Street parking	Some portions of the road	Yes, on both sides	Yes, only on south side	Yes, on both sides	Yes, on both sides	**Weekdays**, No; **Weekends**, Yes, on both sides	**Weekdays**, No; **Weekends,** Yes, on both sides
Parking Space Width	6-7 ft.	7.5 ft.	7.5 ft.	7 ft.	7 ft.	10.5 ft., on weekends only	10.5 ft. on weekends only
Travel Lanes (number and width)	4 travel lanes, 10-15 ft.; Center lane, 11-18 ft.	4 travel lanes, 10.5 ft.; Center lane, 11 ft. with medians	4 travel lanes, 10.5 ft.; Center lane, 11 ft. with medians	2 travel lanes, 11 ft.; plus center lane, 13 ft. with medians	2 travel lanes, 11 ft.; plus center lane, 13 ft. with medians	4 travel lanes on **weekdays**, 10.5 ft.; 2 travel lanes on **weekends**, 10.5 ft.; plus center turn lane, 12 ft. with medians	4 travel lanes on **weekdays**, 10.5 ft.; 2 travel lanes on **weekends**, 10.5 ft.; plus center turn lane, 12 ft. with medians

Ideas That Were Eliminated

The Phase 2 process yielded more ideas than the ones presented to the public. As the concepts and possible safety solutions were refined, several designs were discarded because they did not conform to the ground rules established at the beginning of Phase 2. A popular idea – roundabouts – is discussed below.

4-Lane Concept

This concept had four travel lanes with no center lane to accommodate turns. Sidewalks and dedicated bicycle facilities would be included. A 4-to-6-foot concrete barrier would separate vehicles traveling in opposite directions. The barrier would limit left turns and U-turns between Bumby and General Rees avenues. Trucks making deliveries to local businesses would not be able to turn left.

MetroPlan Orlando made the decision to not advance this option as a public concept. The concept would create an inconsistent look between sections of the corridor, because it couldn't be implemented on the entire two-mile road. It would be impossible to implement the 4-Lane Concept in the business district, since left turns are a necessity to access each parking lot or alley. The 4-Lane Concept could not be objectively analyzed in the Synchro traffic analysis software, and it did not demonstrate an ability to slow speeding vehicles.

5-Lane Concept without Parking

A 5-Lane Concept with slightly wider travel lanes – at 11 feet -- was considered. The concept offered a 6-foot wide sidewalk on both sides and a 4-foot landscape buffer between the travel lane and sidewalk, but it did not include on-street parking at any time. This was eliminated because it did not meet the ground rules established at the beginning of Phase 2.

Roundabouts

Roundabouts were suggested at several intersections as part of the public feedback. Intersections along Corrine Drive were examined to see if roundabouts could be installed without purchasing additional right-of-way. MetroPlan Orlando concluded that additional land would have to be purchased at every intersection. This is true for every concept proposed (5-Lane, 3-Lane, and Hybrid). The best candidate for a roundabout is the intersection at the Leu Gardens curve from Forest to Corrine. According to NCHRP Report 672 – Roundabouts: An Informational Guide, Second Edition, the minimum amount of land needed for a roundabout at the Leu Gardens curve is 120 feet. Obtaining the extra space would require using the City of Orlando-owned greenspace parcel currently designated for recreational use across the street from the Leu Gardens entrance.

Reversible Lanes

Reversible lanes are used in some areas of the country where vehicle traffic is heavier in one direction than the other. One or two lanes of the road switch directions at different times of day to accommodate the traffic flow. Some prime locations for reversible lanes are streets near large event venues, such as football stadiums, or bridges, such as the Golden Gate Bridge. Corrine Drive is not a viable candidate for reversible lanes, because they would hamper left turns and cut off access to homes and businesses on Corrine Drive during peak hours. This idea was eliminated because reversible lanes are typically intended to keep vehicles moving fast, which is the opposite of the study objectives for Corrine.

Traffic Operations

The Synchro studio suite is a type of computer software that enabled MetroPlan Orlando to analyze traffic operations currently on Corrine Drive and for each proposed concept.

Synchro is the base program that determines intersection level of service, or how well an intersection functions. It rates performance on a scale of A-F, with E being the lowest letter deemed acceptable per both Orange County and the City of Orlando's comprehensive plans. SimTraffic is a traffic simulation program that is part of the Synchro studio suite. It acts as an extension on the Synchro program to determine drive times. MetroPlan Orlando used the software to determine drive times in the morning rush hour (7:30-8:30 a.m.), at mid-day (11:45 a.m.-12:45 p.m.), and in the evening rush hour (5-6 p.m.) The specific steps used in the Synchro and SimTraffic analyses are below.

Synchro/SimTraffic Steps

Steps 1-8 were conducted during the first phase of the study.

1) Obtained Orange County's existing Synchro files, which are the approved base for analyzing traffic operations.
2) Performed quality assurance to ensure signal timings and speed limits were correct.
3) Analyzed data from the Orange County historical traffic count program, counts collected by MetroPlan Orlando in May 2017, and the turning movement count numbers from May 2017. The traffic counts and turning movement counts enable Synchro to determine how many cars can pass through each of the traffic signals.
4) Input traffic count data into the existing Synchro files.
5) Ran Synchro and its SimTraffic extension to determine the intersection level of service and travel times for Corrine Drive today. This analysis can be found at CorrineDriveStudy.org under Phase 1: Corrine Drive's Transportation Story in Data, Images & Video.
6) Input growth rate for each segment of Corrine Drive between Mills Avenue and Bennett Road. The approved growth rate between Mills and Winter Park Road is 1.5%. It is 1% between Winter Park Road and Bennett. See section below for how MetroPlan Orlando determined the growth rate.
7) Ran Synchro and its SimTraffic extension to determine the intersection level of service and travel times in the year 2040 if no changes are made. This analysis can be found at CorrineDriveStudy.org.
8) Sent analysis to Orange County and the City of Orlando for review and validation of results. Each government independently reviewed and supported the analysis.

Steps 9-11 were conducted during the second phase of the study:

9) Once the potential concepts were identified, MetroPlan Orlando determined the variables within each concept that affect traffic operations.
10) Changed the identified variables, and ran Synchro and its SimTraffic extension for each concept.
11) Sent analysis to Orange County and the City of Orlando for review and validation of results. Each government independently reviewed and supported the analysis.

The 5-Lane Concept and its variation did not have any changes that affect traffic operations. This means that no variables were changed within the Synchro/SimTraffic analysis. The Hybrid Concept and the 3-Lane Concept required changes. For the hybrid, the variable was the removal of the outside travel lane on the weekend. In the 3-Lane concept, permanently having 3 lanes was the change. Nothing else was changed. (Please see **Appendix A: Travel Time Reports**, at the end of this report, for more details on how travel times were calculated.)

Corrine Drive's Growth Rate

The growth rate determines how many cars could be using Corrine Drive in the year 2040. Here is how it was determined:

1) Reviewed Orange County historical traffic counts, the May 2017 counts, the region's travel demand model, and traffic studies from recent developments including Baldwin Park, the Yards, and the Audubon Park K-8 School. This is the same step as Step 3 in the Synchro/SimTraffic Analysis.
2) Identified the growth rates in the recent traffic studies.
3) Developed a trend line from all the traffic counts and the region's travel demand model.
4) Averaged the growth rates from recent traffic studies and the trend line.
5) Reviewed the averaged growth rate with Orange County, the City of Orlando, and the City of Winter Park. Each local government approved the growth rate: 1.5% between Mills Avenue and Winter Park Road; 1% between Winter Park Road and Bennett Road.

Potential Safety Solutions for the Area

The Corrine Drive Complete Streets Study is about more than the two miles between the lights at Mills Avenue and Bennett Road. It also considers the streets in surrounding neighborhoods and how they interact with the main corridor. We are considering a person's entire trip and the transportation options that could support a healthy and safe journey. That's why, as part of the Phase 2 process, several additional safety solutions are proposed. MetroPlan Orlando has identified a potential bicycle network and lighting suggestions. Additionally, changes to specific locations in the study area are proposed. These changes could be implemented, regardless of which concept is advanced to the next phase.

Raised Intersection at Winter Park Road

A raised intersection at Winter Park Road and Corrine Drive would be a significant pedestrian safety design element. In a raised intersection, the pavement increases in height to be level with the sidewalks and curbs at each corner. The slight increase in pavement elevation at the intersection is designed to slow a car's speed, and it draws attention to someone crossing the street.

The raised intersection addresses these community concerns:

- Slowing speeding vehicles
- Pedestrian safety
- Safety of children walking or biking to new Audubon Park K-8 School

The design of the intersection would help by:

- Adding a physical design feature that reduces a car's ability to drive fast
- Drawing attention to someone crossing the street and helping make them more visible to drivers who are farther away
- Making crosswalks level with the sidewalks and curbs, so it's easier to cross the street -- particularly for children, older adults, families with strollers, or people who use wheelchairs
- Placing bollards at corners to protect pedestrians from vehicles that may take the turn too sharply
- Incorporating an approved Safe Routes to School infrastructure improvement, which is particularly relevant as the new K-8 school opens nearby

Signalized Crosswalk at East End Market

Through both the community survey and the feedback at the July 2017 workshop, more than 100 people suggested a crosswalk near East End Market. MetroPlan Orlando proposes adding a signalized crosswalk on Corrine between East End Avenue and Northwood Terrace Drive.

The signalized crossing addresses these community concerns:

- Safe street crossing for pedestrians
- A design feature to slow vehicles between General Rees Avenue and Winter Park Road, the part of Corrine with the most speeding
- Opportunity to enhance surrounding aesthetics

The design of the crossing would help by:

- Providing either a push-activated traffic light (HAWK) or pedestrian signal, which would give vehicles a red light – similar to the one on Robinson Street in front of Howard Middle School
- Creating pavement markings to clearly show the pedestrian crossing area
- Including possible opportunities for public art
- Shortening the distance to cross Corrine Drive through sidewalk extensions
- Placing bollards at the extensions to protect people waiting to cross

Adjust Traffic Signal Timings

The traffic signals along Corrine have inconsistent timing and lack sufficient pedestrian considerations. MetroPlan Orlando is proposing to re-time traffic signals in the two-mile Corrine Drive corridor. With the Audubon Park K-8 School opening in 2018, traffic signals that support kids walking or biking as well as school traffic are a key need.

The retiming of the traffic signals addresses these community concerns:

- Poor traffic light timing along Corrine Drive
- Safe street crossing for pedestrians
- Choppy traffic flow

The retiming of the traffic signals would help by:

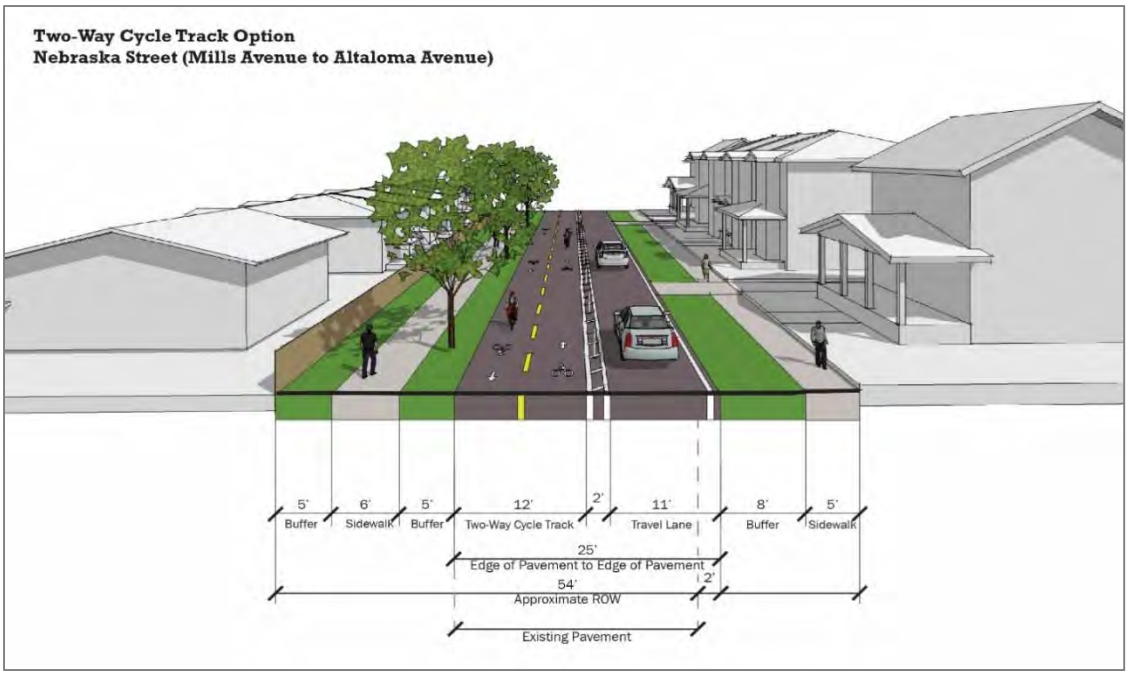
- Updating signal timings to provide smoother vehicle flow and ensure pedestrians have sufficient crossing time
- Adjusting the signal timings to include giving pedestrians a ‘head start’ at intersections, allowing them to start crossing before lights turn green for cars

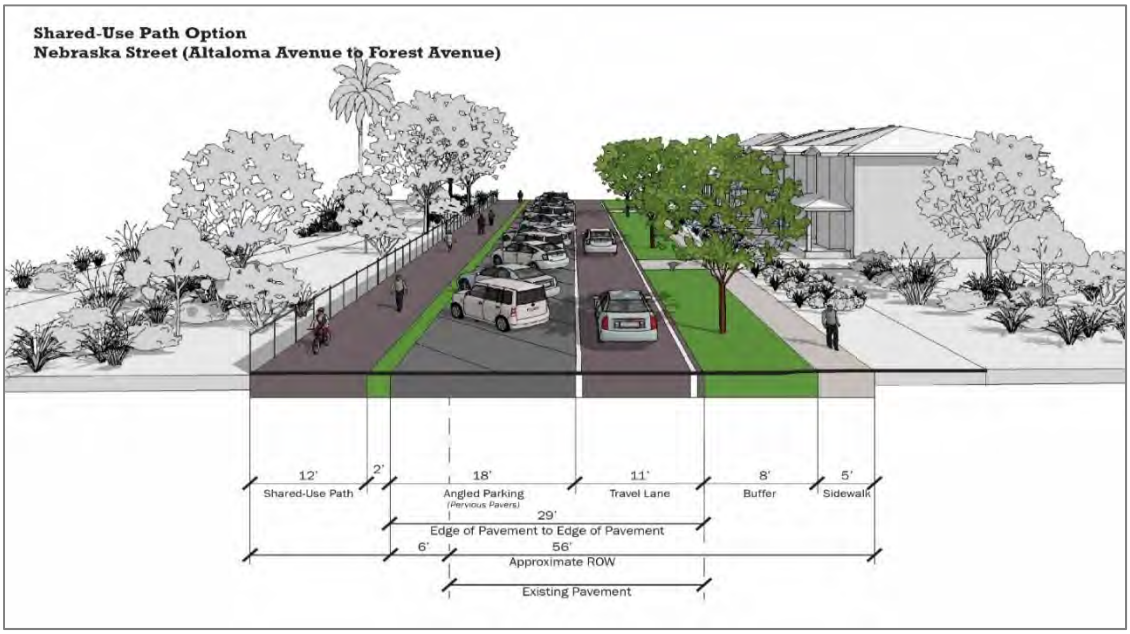
Nebraska Street Redesign

The Nebraska Street proposal would make a more significant change. The map identifies a shared-use path proposed for Nebraska between Mills Avenue and Forest Avenue. This is approximately a half-mile of a combined separated cycle track and shared-use path. A separated two-way cycle track is proposed from Mills Avenue to Altaloma Avenue, on the north side of the road. At Altaloma – the start of the Leu Gardens property – the cycle track turns into a shared-use path along the Leu Gardens property line. Angled parking spaces would be located between the shared-use path and the vehicle travel lane.

Adding a cycle track requires Nebraska Street to be one-lane for east-bound vehicle traffic only. The cycle track would replace the existing westbound travel lane. All westbound traffic would be able to use Virginia Drive. This has the potential to add a minute or two to travel times from Mills to the Leu Gardens curve.

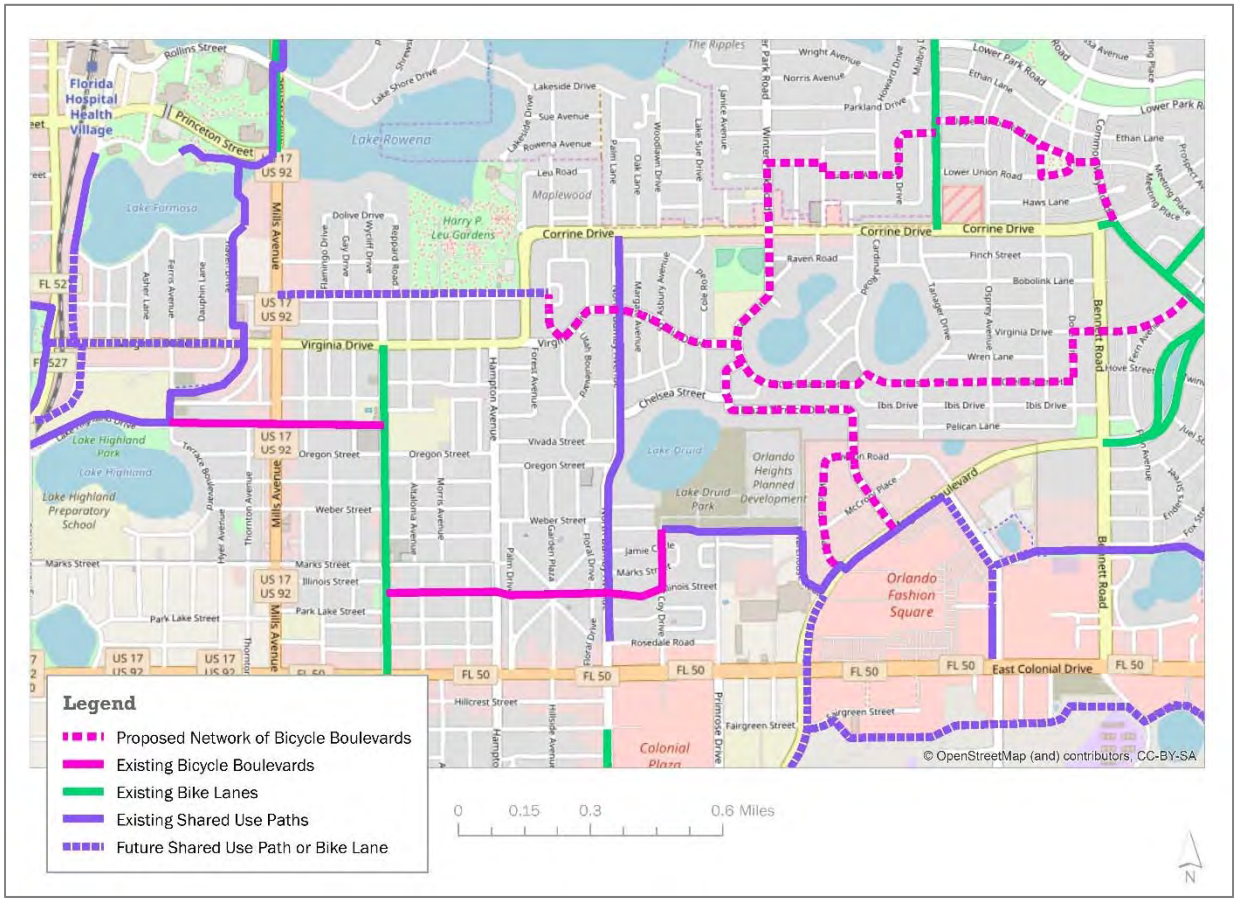
The change would provide 50-80 permanent parking spots. The spots will formally be used for Leu Gardens events, but they will be available to the public as well. Additionally, a bicycle-specific traffic light could be added to the traffic signal at the Forest and Nebraska intersection. If this idea were to go forward, it would require more public input and coordination with the neighborhood.





Network of Neighborhood Bicycle Boulevards

As mentioned earlier, bicycle infrastructure that fosters a safe and supportive environment differs by the type of street. The local streets that intersect or parallel Corrine Drive are prime candidates for sharrows. MetroPlan Orlando is proposing a network of neighborhood bicycle boulevards to help cyclists ride from points west to points east and vice versa without using Corrine Drive. The bicycle boulevards would feature a robust wayfinding system and sharrows. (See Key Terms box, page 4.)



The proposed sharrows and wayfinding system would connect Leu Gardens and Colonialtown North to points east, such as the Cady Way Trail or downtown Baldwin Park. One sharrow route would be north of Corrine Drive connecting to the bike lane on General Rees. Another would use Chelsea Lane to connect Audubon Park to downtown Baldwin Park. The southern sharrow route would connect the study area to the Orlando Bike Beltway and the Cady Way Trail.

Leu Gardens Connection

This design proposes building a 125-foot-long road connection between the Leu Gardens driveway and North Forest Avenue, creating a signalized exit for Merritt Park residents. If implemented, this design would relocate the Leu Gardens gate to a spot further back toward the Garden House and restripe the driveway leading to the light. To implement, this road connection requires significant coordination between all the departments in the city of Orlando and residents of N. Forest Avenue.

The new road addresses these community concerns:

- Difficulty accessing Corrine Drive from Merritt Park

The design of the crossing would help by:

- Allowing residents in Merritt Park to access Corrine Drive via the Leu Gardens traffic signal
- Improving residents' ability to turn left onto Corrine, particularly during rush hour

Better Lighting

Lighting is necessary to create the safe, walkable areas the community desires. Further details regarding lighting for the future Corrine Drive will be determined in Phase 3. The lighting recommendations will stay the same no matter which concept is advanced. A good lighting plan will illuminate both the road and the sidewalks, improving safety for walkers, bicyclists, and drivers. Pedestrian-scale lighting is closer to the ground and evenly lights spaces where people walk, improving visibility and safety for pedestrians. LED lights will minimize light pollution while brightening sidewalks and travel lanes.

Future Consideration: Transit Stops

The neighborhoods surrounding Corrine Drive are ill-served by public transit. The LYNX routes pass through the area to connect downtown Orlando with north and east Orange County. However, the transit agency is in the process of changing all its routes and service options. MetroPlan Orlando is working with the LYNX team to identify a potential route that better serves residents in the Corrine area. If feasible, the new routes will be incorporated into Phase 3 of the Corrine Drive Complete Streets Study.

The new routes could help make transit a more important part of life along Corrine Drive. Bulbouts would make good locations for bus stops. Amenities, such as a shelter, also could be added.

Next Steps

MetroPlan Orlando is presenting three concepts—and three variations—in this phase of the Corrine Drive study. Next, gathering public feedback is the focus. MetroPlan Orlando will engage members of the community through a digital platform — learning what they like, do not like, and suggest as options. We will also host informal pop-up meetings in the area and meet with local government officials.

The feedback from the public on the possible design concepts will help narrow the selection of elements to include in the final design. That design, which will bring together technical data, industry best practices and public desires, will be presented to the public in summer 2018. No design concept is selected at this time. The final design plan may draw from two or more of the concepts presented here.

The plan will include details on how a design can be implemented in the short-term (2 years), medium horizon (5 years) and long-term (10-15 years). The design plan will then be presented to local governments, so that possible funding sources can be identified. The first step toward constructing any project is approval of a final plan.

To this end, the Corrine Drive Complete Streets Study is the foundation upon which comprehensive changes to Corrine Drive can begin.

Endnotes

[i] Accessible Sidewalks and Street Crossings – an informational guide. Federal Highway Administration. Available at: http://www.bikewalk.org/pdfs/sopada_fhwa.pdf

[ii] Physical Activity: Built Environment Approaches Combining Transportation System Interventions with Land Use and Environmental Design. The Community Preventive Services Task Force. Available at: https://www.thecommunityguide.org/sites/default/files/assets/PA-Built-Environments.pdf

[iii] Safe Routes to School Guide. National Center for Safe Routes to School. Available at: http://guide.saferoutesinfo.org/pdf/SRTS-Guide_full.pdf

Appendix A: Travel Time Reports

This appendix includes the technical back-up information for how travel times for the design concepts were calculated. Travel time reports focus on peak time (rush hour).

To get an apples-to-apples comparison of travel times for the design concepts, it was assumed that:

- The number of cars traveling on the road would be the same as it is today.
- The vehicle trips would be made at the same times as they are today. This means the most congested times of day would be from 7 a.m.- 9 a.m. and from 4 p.m. to 6 p.m.
- No vehicle trips would be diverted to other roads.

The rush hour travel times that accompany the design concepts on pages 7-14 of this report use only **current traffic volumes on Corrine Drive**. They *do not* account for a future growth rate. This helps the public visualize what traffic conditions would be like if a concept were implemented tomorrow.

Traffic Diversion

The question of traffic diversion arises when considering the increased travel times for the 3-Lane Concept and Variation. When vehicle capacity is removed by taking away lanes, one wonders where the traffic might go. Some trips might be converted to other modes of transportation, such as pedestrian, bicycle, or transit. In areas with a grid system, car traffic will often divert to surrounding streets.

In the case of Corrine Drive, it's not possible to say with certainty where traffic might be diverted. No traffic diversion was included in the 3-Lane Concept travel time report, for several reasons.

There is limited potential for converting trips to other modes during peak times. On a typical week, about 15% of trips on Corrine Drive begin and end inside the 4-mile study area. When taking a closer look at peak time, however, only about 3% of trips begin and end on Corrine. These trips are short in length and have the potential to be converted to pedestrian or bicycle trips. While it's unlikely that all these trips would be converted, this mode shift could be encouraged by providing better walking and bicycling facilities.

Since transit service is minimal in the study area, it doesn't currently serve trips on Corrine Drive well. So it's unlikely these trips would be converted to bus trips without significant changes in the transit services offered in the area.

The area lacks a grid network. In trying to identify routes that vehicles could use as an alternative to Corrine Drive, there is no reasonable alternative to the north. Colonial Drive is the best option to the south, but it is beyond capacity. Mills Avenue, which is a major north-south street at the western end of Corrine, is also over capacity. So MetroPlan Orlando did not consider diverting traffic onto these roads. The following table shows traffic volumes on Colonial and Mills and highlights the areas that are at or over capacity.

State Road 50 (Colonial Drive)	Travel Lanes	FDOT Capacity	2013	2014	2015	2016	2017	4 Year Average	% of Capacity
Summerlin to Mills Ave	4	39,800	48,600	47,700	48,200	45,500		47,500	119%
Mills Ave to Bumby Ave	4	39,800	48,600	46,600	49,900	48,200		48,325	121%
Bumby Ave to Fashion Square Mall	6	62,900	57,500	60,600	59,300	57,700		58,775	93%
Fashion Square Mall to SR 436	6	62,900	59,900	57,800	63,300	68,200		62,300	99%

State Road 15 / 600 (Mills Ave)	Number of Lanes	FDOT Capacity	2013	2014	2015	2016	2017	4 Year Average	% of Capacity
SR 50 (Colonial Drive) to Lake Highland	4	32,400	30,500	30,000	35,400	32,700		32,150	99%
Lake Highland to Princeton St.	4	32,400	38,100	37,500	42,000	44,000		40,400	125%

** 2017 numbers will be available in April 2018*

Need to minimize traffic through neighborhoods. Regional traffic going through neighborhoods on local, low-stress streets has the potential to create safety hazards through speeding and increased congestion.

As the regional transportation planning organization for the three-county Central Florida area, MetroPlan Orlando views the transportation system as a network. When changes are made in one area, it's important to consider the potential effects on surrounding areas.

Contents of Appendix A: Travel Time Reports

Terms Used in Appendix A

Synchro Files: The Orange County-maintained files that identify existing land configurations and signal timings for the Corrine Drive corridor from Mills Avenue to Bennett Road

Signal Phasing Optimization: The coordination of multiple traffic signals on the same street for varying traffic conditions throughout the day

2017 Synchro Files: The update MetroPlan Orlando did to the base Synchro files received from Orange County (which maintains the files because it owns Corrine Drive). The update included the traffic counts collected in May 2017 and signal timing adjustments not incorporated in the base files.

2040 Synchro Files: The 2017 Synchro network with future forecasted traffic representing the projected conditions in 2040

SimTraffic Arterial Report (Travel Times Report): The report produced through the SimTraffic simulation. It lists the delay and total travel time through each node, which equates to approximately one block. The total time is listed in seconds.

TECHNICAL MEMORANDUM

Project #17873.20

Date: February 2, 2018

To: Elizabeth Whitton, AICP (MetroPlan Orlando)

From: Brett Boncore, PE (Kittelson & Associates, Inc.)

cc: Nick Lepp, AICP CTP (MetroPlan Orlando); Jane Lim-Yap, AICP and Patty Hurd, PE, AICP (Kittelson & Associates, Inc.)

Subject: Traffic Operations Analysis Certification for Corrine Drive Complete Streets Study

I, Brett Boncore, PE, have led and reviewed the traffic operations analysis for the Corrine Drive Complete Streets Study, covering Virginia Drive, Forest Drive, and Corrine Drive from Mills Avenue to Bennett Road (Study Corridor). I certify that the analyses used for all scenarios were consistent with Highway Capacity Manual (HCM) 2010 methodologies and included the following assumptions, as directed by MetroPlan Orlando:

- The existing conditions analysis assumed existing lane configurations and existing signal timings based on signal timing sheets from the City of Orlando, Synchro files from Orange County (received from MetroPlan Orlando June 26th, 2017), and field observed signal phase times.
- The traffic analyses of the five-lane alternative scenarios assumed a consistent five-lane cross section throughout the entirety of the Study Corridor.
- The traffic analyses of the five-lane alternative scenarios assumed existing turn lanes at signalized intersections and existing right-turn on red (RTOR) parameters.
- The traffic analyses of the three-lane alternative scenarios assumed a consistent three-lane cross section throughout the entirety of the Study Corridor.
- The traffic analyses of the three-lane scenarios assumed right-turn lanes at:
    - Mills Avenue NB right-turn lane
    - Fern Creek Avenue EB right-turn lane
    - Nebraska Street SB right-turn lane and EB through-right-turn lane
    - Leu Gardens SB right-turn lane
    - Bumby Avenue EB right-turn lane
    - Winter Park Road EB/WB right-turn lane, and SB right-turn lane
    - General Rees Avenue WB right-turn lane
    - Bennett Road EB right-turn lane
- Signal phasing changes to intersections in the three-lane alternative scenarios, included:
    - Signal phasing optimization (using Synchro default optimization tool)
    - Modification of cycle lengths to create consistency along the corridor
    - Coordination offset optimization (using Synchro default optimization tool)

- The future traffic analysis assumed a 1.5 percent annual growth rate between Mills Avenue and Leu Garden entrance; and a 1.0 percent annual growth rate between Leu Gardens entrance and Bennett Road. These annual growth rates were applied beginning in 2017 and used through 2040.
- Per MetroPlan Orlando's direction, the analysis assumed that no vehicle trips would be diverted to parallel local or regional facilities in any scenario (existing and future). MetroPlan Orlando considers State Road 50 (Colonial Drive) to be at vehicle capacity and through Winter Park, there is no viable alternative corridor.

Traffic operations in all scenarios were simulated using SimTraffic to estimate the travel times along the corridor. SimTraffic uses the Synchro analysis files as input and is a microscopic model used to simulate a wide variety of traffic conditions. For each SimTraffic run, vehicles are randomly introduced into the traffic system and are individually tracked through the model. Information is collected on every vehicle during each 0.1-second of the simulation. Multiple runs were averaged (five in this case) to simulate the variability in traffic conditions, as suggested by the program creators (Trafficware/Naztec).

The SimTraffic Arterial Report (travel time report) uses origin-destination data to only count vehicles that came from the upstream segment[1]. The existing conditions (five-lane scenario) travel times were verified using Google Analytics. The three-lane scenario travel times are a result of a change in the number of corridor through lanes and the previously stated three-lane scenario assumptions, such as optimized signal timings, to report the best case scenario for the given assumptions.

[1] SimTraffic conducts analysis for each corridor identified in Synchro (in this case Virginia Drive, Forest Avenue, and Corrine Drive). This means that, for this study, it conducted separate travel time analyses for these three corridors. In the SimTraffic reports, node 4 (Leu Gardens entrance) and node 9 (intermediate node between Leu Gardens entrance and Bumby Avenue) show up twice. This is due to SimTraffic seeing nodes 4 and 9 as along both Forest Avenue and Corrine Drive. Due to the randomization of vehicle arrivals, these incremental travel times are different depending on the corridor with which the node is analyzed. To calculate the corridor end-to-end travel times, nodes 4 and 9 associated with Forest Avenue were used for EB travel times and nodes 4 and 9 associated with Corrine Drive were used for WB travel times. If calculated using the inverse, the difference in calculation methods is less than 1 minute.

The following are the travel time results based on SimTraffic for the corridor, according to the assumptions stated above:

Table 1 SimTraffic Travel Time Results Using Existing (2017) Volumes

	Existing Conditions	Three-lane Alternative	Five-lane Alternative	Five-lane Hybrid
Eastbound				
AM	5.8 minutes	6.4 minutes	5.8 minutes	5.8 minutes
PM	7.5 minutes	23.8 minutes	7.5 minutes	7.5 minutes
Westbound				
AM	6.3 minutes	29.8 minutes[2]	6.3 minutes	6.3 minutes
PM	7.5 minutes	7.1 minutes	7.5 minutes	7.5 minutes

Table 2 SimTraffic Travel Time Results Using Future (2040) Volume Estimates

	Three-lane Alternative (Optimized Signal Timings)	Five-lane Alternative (Optimized Signal Timings)	Five-lane Hybrid (Optimized Signal Timings)
Eastbound			
AM	7.2 minutes	6.2 minutes	6.2 minutes
PM	42.5 minutes	7.1 minutes	7.1 minutes
Westbound			
AM	57.2 minutes	6.8 minutes	6.8 minutes
PM	24.7 minutes	6.8 minutes	6.8 minutes

[2] A summary table (in MS Excel) reflecting the SimTraffic AM Peak travel time of 27.3 minutes for the corridor from end to end was submitted to MetroPlan Orlando (dated October 16, 2017). Recent review of that table revealed a data entry error when inputting the Synchro results into MS Excel. That error has been corrected and the new revised table is attached showing end-to-end corridor SimTraffic travel time of 29.8 minutes for the AM peak period.

Attached are the Existing Lane Configuration Traffic Operations Analysis Memorandum (for existing and future volumes, dated July 2017) and alternative scenarios analyses results (pre-memorandum results, dated January 2018).

Traffic Operations Analysis Memorandum

Corrine Drive Complete Streets Study

Orlando, Florida

July 2017

Note: This document contains references to appendices, which will be presented with the final product.

Traffic Operations Analysis Memorandum

Corrine Drive Complete Streets Study

Orlando, Florida

Prepared For:
MetroPlan Orlando
250 S. Orange Avenue, Suite 200
Orlando, Florida 32801
(407) 481-5672

Prepared By:
Kittelson & Associates, Inc.
225 E. Robinson Street, Suite 450
Orlando, FL 32801
(407) 540-0555

July 2017

metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

Section 1 Introduction

INTRODUCTION

Kittelson & Associates, Inc. (KAI) conducted existing and future conditions traffic operations analysis along the Corrine Drive corridor between Mills Avenue and Bennett Road in Orlando, Florida.

PROJECT DESCRIPTION

MetroPlan Orlando is conducting a Complete Streets Study along Corrine Drive from Mills Avenue to Bennett Road, which links the City of Orlando, City of Winter Park, and portions of unincorporated Orange County. This Complete Streets corridor study will address pedestrian safety, first/last mile connectivity to transit, close gaps to create a regional network of trails and paths, and maintaining accessibility for all users of the road. The specific objectives of the study are to:

- Enhance connectivity and accessibility between all modes of transportation, activity centers, and neighborhoods surrounding Corrine Drive
- Create a safe and supportive environment for walking and biking on Corrine Drive
- Identify strategies for improved transit service along Corrine Drive
- Create a multi-modal vision and plan to enhance economic viability without impacting the residential neighborhoods

TRAFFIC OPERATIONS ANALYSIS METHODOLOGY

MetroPlan Orlando contracted Kittelson and Associates to conduct an existing and future conditions traffic operations analysis for the Corrine Drive study corridor.

The methodology found in this technical memorandum is consistent with industry best practices in traffic analyses and forecasting. The general methodology used for the existing conditions traffic operations analysis, growth rate development, and future conditions traffic operations analysis is as follows:

- Collect relevant traffic count information from the Orange County's historical traffic count records and actual volume count data, review previous studies, traffic characteristics, and other travel characteristics data provided by MetroPlan Orlando.

- Use existing turning movement count data to update Orange County Synchro files (both provided by MetroPlan Orlando) to understand existing traffic operations at the Corrine Drive corridor's eight (8) signalized intersections.

- Develop future growth rates for the distinct study corridor segments based on trends analysis of historical traffic counts, adopted travel demand model (OUATS Base Year 2009), relevant traffic

projections from other area studies, projected population growth trends from the University of Florida's Bureau of Economic and Business Research (BEBR), and approved future development.

- Apply future growth rates to existing turning movement volumes to develop and balance future condition turning movement volumes at corridor intersections. Identify deficiencies at key intersections and roadway segments based on existing and future conditions of the multimodal network.

Design Period

Based on the information by MetroPlan Orlando, the following years were used to determine future year forecasts for the segment:

- Existing Year – 2017
- Future Year – 2040

Section 2 Existing Conditions

EXISTING CONDITIONS

AREA CHARACTERISTICS

The Corrine Drive corridor is a local Main Street neighborhood and is officially designated as one of the City of Orlando's Main Street districts. Currently, the corridor experiences speeding problems, has sidewalk gaps, no dedicated bicycle facilities, faded crosswalks, cracked pavement, poor lighting, and limited ADA accessibility throughout the corridor.

ROADWAY DESCRIPTION

The Corrine Drive corridor consists of three segments that make up the approximately 2.1-mile study corridor – Virginia Drive from Mills Avenue to Forest Avenue; Forest Avenue from Virginia Drive to Corrine Drive; and Corrine Drive from Forest Avenue to Bennett Road. The study corridor's eight (8) signalized intersections are:

- Virginia Avenue and N Mills Avenue (US 17-92)
- Virginia Avenue and Fern Creek Avenue
- N Forest Avenue and Nebraska Street
- Corrine Drive and Leu Gardens Entrance
- Corrine Drive and N Bumby Avenue
- Corrine Drive and Winter Park Road
- Corrine Drive and General Rees Avenue
- Corrine Drive and Bennett Road

The corridor is classified as a minor urban arterial from Mills Avenue to General Rees Avenue and as a major urban collector from General Rees Avenue to Bennett Road. The corridor is currently a five-lane arterial with two travel lanes in each direction and a center two-way left-turn lane. The corridor has a 30 mile-per-hour (MPH) posted speed limit from Mills Avenue to Bumby Avenue and a 35 MPH posted speed limit from Bumby Avenue to Bennett Road based on a review of the 2015 Florida Traffic Information (FTI) DVD and Google Earth Street View imagery. The most common cross sections along the corridor – including the dimensions of travel lanes, parking lanes, sidewalks, and other features – were provided to MetroPlan Orlando on July 20, 2017.

TRAFFIC DATA COLLECTION

Traffic data collection included 2-hour turning movement counts at the study corridor intersections during the AM (7:00-9:00 AM), mid-day (11:00 AM-1:00 PM), and PM (4:00-6:00 PM) peak periods. The corridor peak hours were seen to be:

- AM Peak Hour – 7:30-8:30 AM
- Mid-day Peak Hour – 11:45 AM-12:45 PM
- PM Peak Hour – 5:00-6:00 PM

Turning movement counts for all peak hours are shown in **Figure 2** through **Figure 4** on pages 19 through 21.

Mid-week vehicular volume tube counts were also conducted as part of this study to determine 2017 segment volumes. Volume tube counts were conducted from Friday, May 5 to Thursday, May 11, 2017 at Orange County count stations 408, 6074.5, 6074 and 6073 (shown in **Figure 1**).

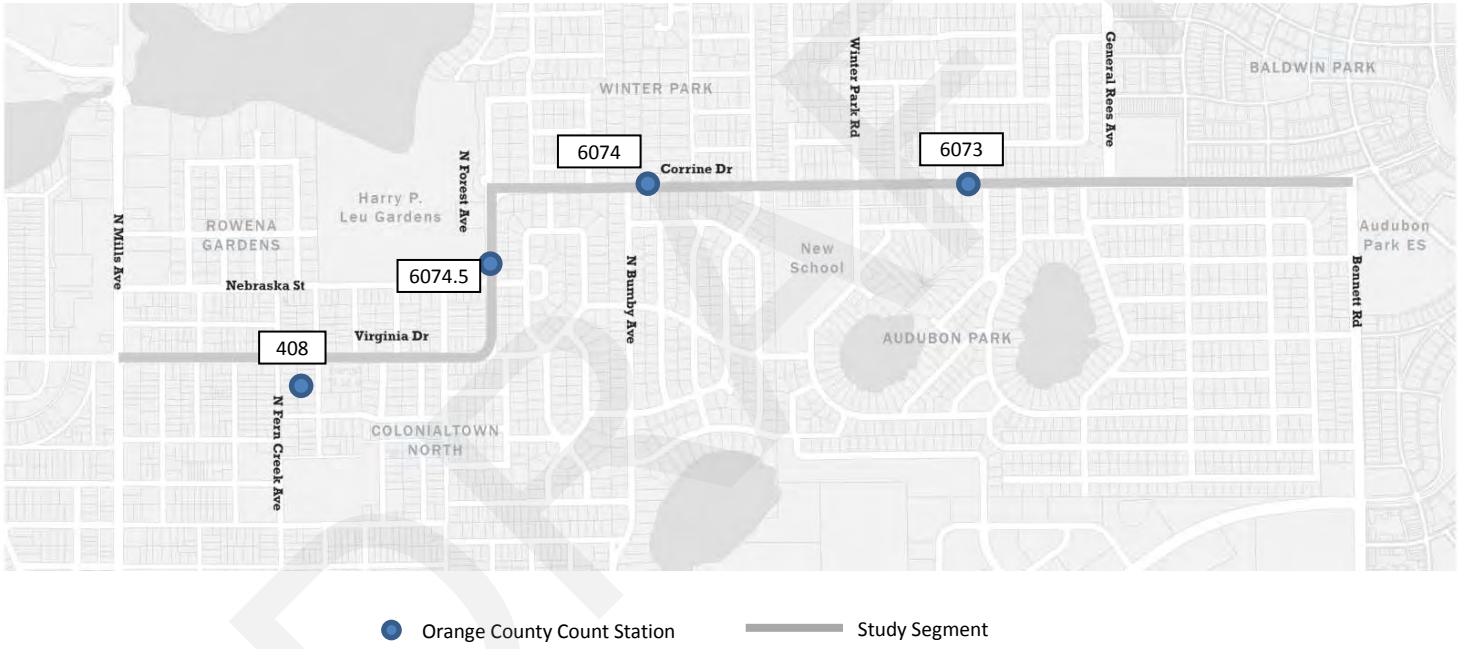


Figure 1 Project Location Map

To estimate Annual Average Daily Traffic (AADT) values for 2017, the Average Daily Traffic (ADT) volume were seasonally adjusted using the Weekly Seasonal Factor from the 2015 Florida Traffic Information (FTI) database. **Table 1** summarizes the AADT at the count stations along the study corridor.

Table 1 AADT Values by Location

Location	Orange County Station #	Count Dates	2017 ADT	Seasonal Factor	Rounded 2017 AADT
ON VIRGINIA DRIVE, 450 FT. E OF FERN CREEK AVENUE	408	5/08/17-5/11/17	15,861	0.98	**16,000**
ON FOREST AVE, 0.18 MI. N OF VIRGINIA DRIVE	6074.5	5/08/17-5/11/17	19,750	0.98	**20,000**
ON CORRINE DRIVE, 0.29 MI. W OF WINTER PARK ROAD	6074	5/08/17-5/11/17	23,144	0.98	**23,000**
ON CORRINE DRIVE, 0.26 MI. E OF WINTER PARK ROAD	6073	5/08/17-5/11/17	22,468	0.98	**22,000**

Section 3 Future Growth Rate Identification

FUTURE GROWTH RATE IDENTIFICATION

TRAFFIC PROJECTIONS

Future growth rates for the study corridor were selected based upon a synthesis of historical traffic counts, adopted travel demand model (OUATS Base Year 2009), relevant traffic projections from other area studies, projected population growth trends from the University of Florida's BEBR, and approved future development.

Historical Growth Rates

Historical traffic count data pulled from the Orange County website and 2017 traffic tube counts were evaluated to determine a trend growth rate for 2017-2040. **Table 2** shows a summary of the historical AADT data between 2008 and 2017. The historical annual growth rates at the count station locations, along with their respective R^2 value are summarized in **Table 2**. Generally, growth rates with an R^2 value greater than or equal to 75 percent represent a strong historical trend. The historical growth rates over the last five years (2013-2017) range from -2.28 percent on Corrine Drive to 3.5 percent on Forest Avenue with poor R^2 values. Over the ten year historical period dating back to the economic downturn (2008-2017), the growth rates range from 0.1 percent on Corrine Drive to 3.5 percent on Forest Avenue with R^2 values ranging from 1.1 percent to 72.9 percent. The linear trends analysis graph for the count station is provided in **Appendix C**.

Through observation of recent segment trends, it was seen that the Virginia Drive and Forest Avenue segments behave much differently than the Corrine Drive segments. Along Virginia Drive and Forest Avenue, AADT reached a 10-year minimum AADT in 2009, then generally increasing through 2016 when AADT reached its 10-year high for these segments. Along Corrine Drive, the AADT reached a 10-year minimum in 2010 and has generally increased through 2014, until it reached its 10-year high. AADT along Corrine Drive has fluctuated somewhat in the last 3 years.

Table 2 Historical AADT (Vehicles per Day) and Linear Trends Growth Rates

Year	Virginia Drive, 450 ft. E of Fern Creek Avenue	Forest Avenue, 0.18 mi. N of Virginia Drive	Corrine Drive, 0.29 mi. W of Winter Park Road	Corrine Drive, 0.26 mi. E of Winter Park Road
	Station 408	Station 6074.5	Station 6074	Station 6073
2017	15,900	19,800	23,100	22,500
2016	17,500	22,200	22,800	21,400
2015	17,300	21,600	23,800	22,000
2014	16,500	18,400	26,300	25,200
2013	17,100	18,500	24,300	21,800
2012	15,900	18,100	24,100	21,200
2011	16,400	17,700	22,400	20,700
2010	15,300	16,600	22,715	17,200
2009	15,300	16,300	23,247	20,400
2008	17,100	17,100	24,000	20,500
Best Fit Annual Linear Growth Rate (2013-2017)	-0.7%	3.5%	-2.3%	-1.1%
R^2	11.5%	33.6%	45.5%	6.3%
Best Fit Annual Linear Growth Rate (2008-2017)	0.6%	3.5%	0.1%	1.9%
R^2	13.3%	72.9%	1.1%	33.5%

OUATS Model Growth Rates

The most current version of the OUATS v4 with base year 2009 and forecast year 2040 was reviewed to estimate volume growth. The OUATS model growth rates along the study segment are summarized in **Table 3**.

Table 3 OUATS Subarea Model Growth Rates

Location	2009 Base Year AADT (veh/day)	2040 Forecast Year AADT (veh/day)	Annual Model Growth/Year (veh/day)	Annual Linear Growth Rate
ON VIRGINIA DRIVE, 450 FT. E OF FERN CREEK AVENUE	13,949	20,133	199	1.4%
ON FOREST AVE, 0.18 MI. N OF VIRGINIA DRIVE	13,899	20,172	202	1.5%
ON CORRINE DRIVE, 0.29 MI. W OF WINTER PARK ROAD	19,318	27,003	248	1.3%
ON CORRINE DRIVE, 0.26 MI. E OF WINTER PARK ROAD	17,722	24,390	215	1.2%

BEBR Population Study Growth Rates

The University of Florida's BEBR projections were obtained for Orange County. The BEBR projections show an estimate for 2015 and projections for 2020 to 2045. The low, medium, and high projections for 2040 are summarized in **Table 4**. Growth rates range from approximately 0.89 percent to 3.22 percent.

Table 4 BEBR Population Growth Rates for Orange County

Estimation	2015 Estimate	2040 Projection	Annual Growth Rate, Persons/Year (%)
Orange County			
Low	1,252,396	1,539,000	11,140 (0.65%)
Medium		1,908,000	26,224 (1.56%)
High		2,262,100	40,388 (2.46%)

It is important to note the BEBR data accounts for countywide data and does not necessarily reflect expected growth on specific roadways or in sub-areas of Orange County. It is useful in reviewing reasonableness of growth rates obtained from other sources such as travel demand models or historical AADT data.

Other Area Traffic Projection Studies

Two area traffic studies were used to supplement the development of a growth rate for the Corrine Drive study corridor.

Orange County Public Schools Audubon Park Traffic Impact Study

The Orange County Public Schools Audubon Park Traffic Impact Study evaluated and documented the possible traffic impacts associated with the planned reconstruction of the Audubon Park Elementary School, located just off the study corridor at Winter Park Drive / Falcon Drive. The study cites that the school is anticipated to be constructed by 2018 as a K-8 school with a total student enrollment of 1,346 students. The school grounds will contain a multipurpose field, two basketball courts, a tot lot, youth lot, softball area, and a track. Parent and bus drop off areas as well as parking are also included in the site. The school hours are anticipated to be from 8:00 AM to 3:30 PM, coinciding with the overall AM peak hour of the corridor.

The assumed background growth rate for the area surrounding the school was 2.0 percent and, in the AM peak hour, an estimated 291 total trips would be added to the network. Twenty percent of these trips are anticipated to use Corrine Drive west of Winter Park Drive, forty-five percent would use Corrine Drive east of Winter Park Drive, and ten percent would use Winter Park Drive north of Corrine Drive.

These trips were included when developing the AM peak hour future volumes for the Corrine Drive Corridor Study future conditions analysis.

Virginia / Lake Highland Transportation and Land Use Study

The Virginia / Lake Highland Transportation and Land Use Study provides a framework for the integrated, comprehensive, and holistic planning approach required to enhance connections between people, place and opportunity in the Virginia Drive (west of Mills Avenue) and Lake Highland area. As part of this project, trip generation was conducted for six development sites in the Virginia Drive and Lake Highland area. The assumed background growth rate was 1.0 percent. These developments are anticipated to add approximately 1500 vehicles, in total, to the surrounding network in the AM peak hour and approximately 1300 vehicles in the PM peak hour. Although these trips were not distributed and assigned to specific roadways in the study, general percentages were taken into account for the Corrine Drive Corridor Study future conditions analysis.

Applied Growth Rate

Based on the review of the historic growth rates, model growth rates, population growth rates, and surrounding area studies, growth rates of 1.5 percent for Virginia Drive and Forest Avenue and 1.0 percent for Corrine Drive were selected. The growth rates selected are consistent with average model growth rates, reflect the growth differences between Virginia Drive, Forest Avenue, and Corrine Drive, and are consistent with other area traffic studies. The applied growth rates, the AADT growth per year, and the forecast AADTs are summarized in **Table 5**.

Table 5 Forecast AADT

Location	Recommended Linear Annual Growth Rate	Vehicle Growth / Year	2017 AADT (veh/day)	Future AADT (veh/day)		
				2020	2030	2040
ON VIRGINIA DRIVE, 450 FT. E OF FERN CREEK AVENUE	1.5%	263	16,000	17,000	19,000	22,000
ON FOREST AVE, 0.18 MI. N OF VIRGINIA DRIVE	1.5%	333	20,000	21,000	24,000	27,000
ON CORRINE DRIVE, 0.29 MI. W OF WINTER PARK ROAD	1.0%	228	23,000	24,000	26,000	28,000
ON CORRINE DRIVE, 0.26 MI. E OF WINTER PARK ROAD	1.0%	214	22,000	23,000	25,000	27,000

Section 4 Traffic Operations Analysis

TRAFFIC OPERATIONS ANALYSIS

The project team conducted a segment and intersection-level analysis of the traffic operations at the eight signalized corridor intersections during the AM, mid-day, and PM peak hours for existing (2017) and future year (2040) conditions. Traffic operations were analyzed using Synchro, based on Highway Capacity Manual (HCM) 2010 procedures. Travel time measures and queuing conditions were also simulated using SimTraffic.

The LOS standard along the study corridor, based on the most recent City of Orlando and Orange County Comprehensive Plans, is LOS E.

Existing Conditions (2017)

The existing conditions analysis assumed existing lane configurations and existing signal timings which were confirmed using City of Orlando signal timing sheets, Orange County Synchro files, and field observed phase times.

Segment Analysis

A generalized Level of Service (LOS) was conducted on the study corridor segments according to 2012 FDOT Quality/Level of Service Manual methodologies.

Based on the 2017 vehicle tube counts obtained from MetroPlan Orlando, corridor segments experience AADT between 16,000 and 23,000 vehicles per day. Utilizing the FDOT Q/LOS Tables and assuming a turn lane adjustment to multi-lane facilities with no median and exclusive left-turn lanes, the segment level of service is LOS D along the entire study corridor. As seen in **Table 6,** the threshold for LOS E (adopted LOS standard in Orlando and Orange County) is 32,400 vehicles per day (30,780 vehicles per day with median and turn lane adjustment).

Table 6 FDOT Q/LOS Handbook Table for Annual Average Daily Volumes (Urbanized Areas)

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	16,800	17,700	**
4	Divided	*	37,900	39,800	**
6	Divided	*	58,400	59,900	**
8	Divided	*	78,800	80,100	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	7,300	14,800	15,600
4	Divided	*	14,500	32,400	33,800
6	Divided	*	23,300	50,000	50,900
8	Divided	*	32,000	67,300	68,100

Non-State Signalized Roadway Adjustments
(Alter corresponding state volumes by the indicated percent.)
Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment
Multiply the corresponding two-directional volumes in this table by 0.6

Intersection Analysis

The detailed results of the intersection existing conditions analysis for the AM, mid-day, and PM peak hours are shown in **Table 7** and results are summarized graphically in **Figure 2** through **Figure 4** . All study intersections are currently operating at overall Levels of Service (LOS) of D or better during the AM, mid-day, and PM peak hours.

- The **Mills Avenue** intersection shows overall LOS D in all time periods. In the AM peak hour, the WB through is over capacity and, in the PM peak hour, is nearing capacity, with average delays of 94 seconds and 83 seconds (LOS F), respectively. The EB approach experiences an average delay of 58 seconds (LOS E) and 74 seconds (LOS F) in the AM and PM peak hours, respectively. In the mid-day peak hour, the NB left is nearing capacity and experiences a delay of 100 seconds (LOS F).
- In the AM peak hour, the WB approach at **Winter Park Road** is nearing capacity and experiences an average delay of 38 seconds (LOS D). However, the intersection shows an overall delay of 27.0 seconds (LOS C).

- In the PM peak hour, the EB left at **General Rees Avenue** is nearing capacity and experiences an average delay of 31 seconds (LOS C). Inversely, in the AM peak hour, the southbound right is nearing capacity and experiences an average delay of 43 seconds (LOS D). However, the intersection shows an overall delay of 19.5 seconds (LOS B) in the AM peak hour and 30.5 seconds (LOS C) in the PM peak hour.
- In the PM peak hour, the EB left at **Nebraska Street** is nearing capacity and experiences an average delay of 42 seconds (LOS D). However, the intersection shows an overall delay of 18 seconds (LOS B)
- In the AM peak hour, the NB right at **Bennett Drive** is nearing capacity and experiences an average delay of 53 seconds (LOS D). However, the intersection shows an overall delay of 22 seconds (LOS C).

The existing operations were also simulated using SimTraffic to obtain the travel times used in the traffic operations analysis. The detailed existing year SimTraffic output reports are provided in **Appendix G**, and the travel times are summarized in **Table 8**.

Table 7 Existing (2017) Operations Analysis Summary

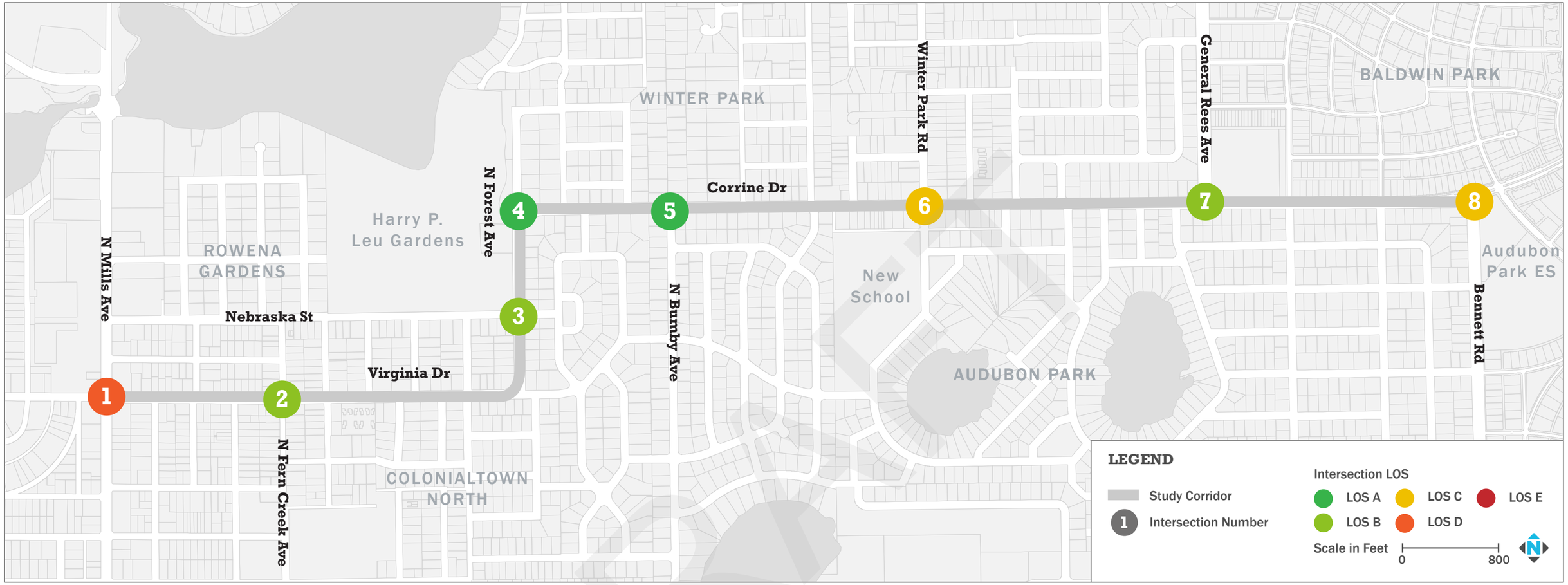
Intersection Metric	AM Peak Hour					Mid-Day Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	INT	EB	WB	NB	SB	INT	EB	WB	NB	SB	INT
Mills Avenue – Virginia Drive															
LOS	E	E	D	D	D	E	E	C	C	D	E	E	D	D	D
Delay (sec)	57.8	73.1	44.2	46.0	54.8	67.1	70.6	33.0	32.6	47.8	74.3	75.6	39.6	43.7	52.3
Queue* (veh)	11.6	54.8	28.9	28.5	-	19.1	21.3	15.9	17.4	-	19.9	22.6	26.6	30.5	-
Fern Creek Avenue – Virginia Drive															
LOS	A	A	C	B	B	A	A	C	C	A	A	A	C	C	B
Delay (sec)	7.3	10.0	25.3	19.2	11.8	4.2	4.3	26.6	29.1	7.3	7.9	7.4	28.0	22.5	11.5
Queue* (veh)	4.2	10.4	9.4	0.7	-	5.1	0.1	2.4	4.1	-	7.5	4.7	9.3	2.8	-
Forest Avenue – Nebraska Street															
LOS	C	C	A	A	B	C	C	A	A	A	D	B	B	B	B
Delay (sec)	27.7	22.2	5.1	9.7	10.9	27.2	23.2	3.8	4.4	7.4	42.2	19.0	11.3	11.1	18.0
Queue* (veh)	7.8	0.5	2.9	13.5	-	5.1	0.1	2.4	4.1	-	18.0	0.3	9.9	9.0	-
Forest Avenue – Corrine Drive															
LOS	D	-	A	A	A	B	-	A	A	A	C	-	A	A	A
Delay (sec)	34.1	-	1.9	5.3	4.2	15.7	-	4.1	7.5	6.4	20.8	-	3.1	9.1	5.4
Queue* (veh)	0.1	-	2.1	9.3	-	1.3	-	2.1	3.9	-	0.3	-	6.0	5.7	-
Bumby Avenue – Corrine Drive															
LOS	B	A	D	D	A	B	A	D	C	B	C	A	D	C	C
Delay (sec)	10.5	1.3	43.5	35.5	7.7	10.8	1.7	38.0	30.3	10.6	26.1	4.6	43.3	28.3	20.8
Queue* (veh)	8.7	2.9	9.9	1.2	-	7.3	2.8	9.9	0.5	-	24.7	4.9	15.7	0.5	-

Winter Park Road – Corrine Drive															
LOS	A	D	C	C	C	C	C	C	C	C	D	C	C	C	C
Delay (sec)	6.7	37.4	29.3	31.6	27.0	33.4	33.9	21.6	20.4	30.9	35.2	23.1	31.1	34.2	31.4
Queue* (veh)	3.6	27.0	2.4	8.5	-	12.1	12.9	2.1	5.4	-	36.6	23.2	32.2	35.1	-
Corrine Drive – General Rees Avenue															
LOS	A	B	-	D	B	B	B	-	C	B	C	D	-	C	C
Delay (sec)	3.8	19.2	-	40.7	19.5	17.7	17.3	-	24.2	19.1	29.2	38.0	-	22.2	30.5
Queue* (veh)	5.3	13.9	-	30.9	-	8.5	7.6	-	16.1	-	18.9	14.6	-	18.3	-
Bennett Road – Corrine Drive															
LOS	A	A	D	-	C	A	A	D	-	B	A	A	D	-	B
Delay (sec)	1.7	8.0	47.5	-	22.0	5.3	5.2	42.2	-	16.9	1.7	7.2	44.9	-	13.6
Queue* (veh)	3.0	5.9	25.1	-	-	9.5	3.1	15.0	-	-	9.5	6.3	20.8	-	-

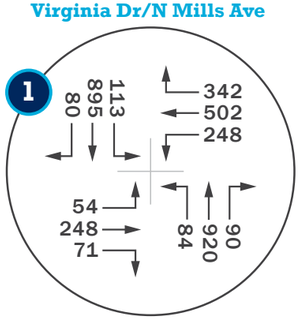
**Queue reported is the average 95th percentile queue (number of vehicles) from the SimTraffic simulation runs*

Table 8 Existing (2017) Corridor Travel Time Analysis (N Mills Avenue to Bennett Drive)

AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour	
EB Travel Time (min)	WB Travel Time (min)	EB Travel Time (min)	WB Travel Time (min)	EB Travel Time (min)	WB Travel Time (min)
5.8	6.3	6.8	6.8	7.5	7.4

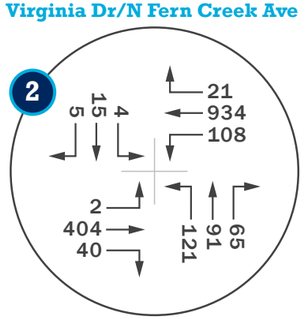


Virginia Dr/N Mills Ave



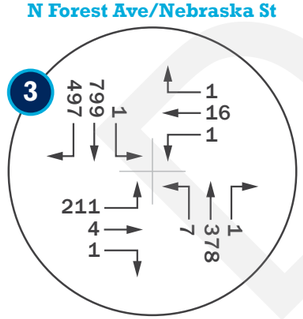
Int Delay 54.8 sec
LOS D

Virginia Dr/N Fern Creek Ave



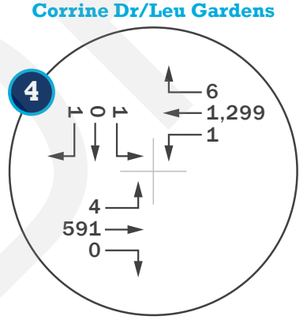
Int Delay 11.8 sec
LOS B

N Forest Ave/Nebraska St



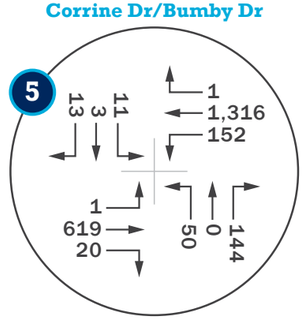
Int Delay 10.9 sec
LOS B

Corrine Dr/Leu Gardens



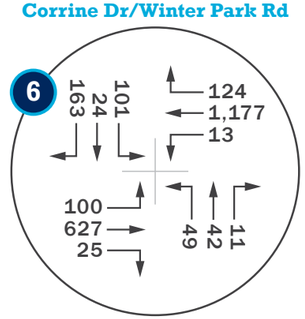
Int Delay 4.2 sec
LOS A

Corrine Dr/Bumby Dr



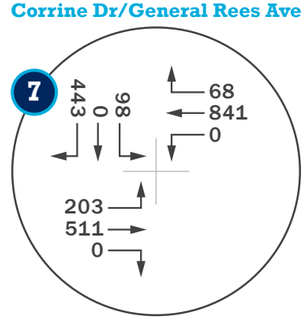
Int Delay 7.7 sec
LOS A

Corrine Dr/Winter Park Rd



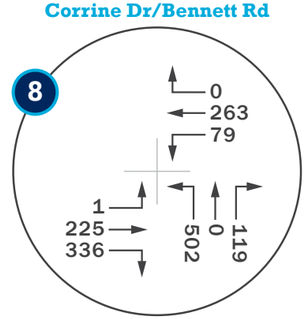
Int Delay 27.0 sec
LOS C

Corrine Dr/General Rees Ave



Int Delay 19.5 sec
LOS B

Corrine Dr/Bennett Rd



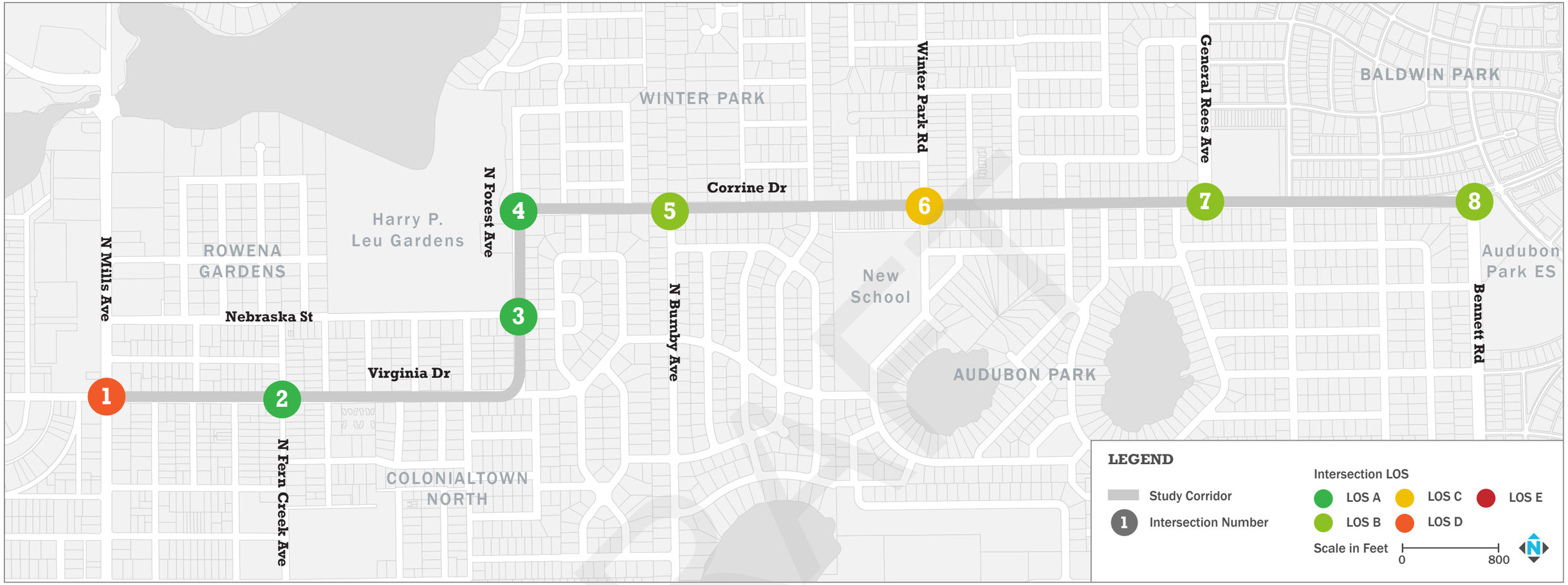
Int Delay 22.0 sec
LOS C

Corrine Drive Complete Streets Study

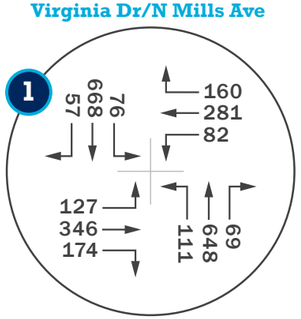
Existing Year (2017) AM Peak-Hour | 7:30AM - 8:30AM

Intersection Turning Movement Volumes & LOS

Figure 2

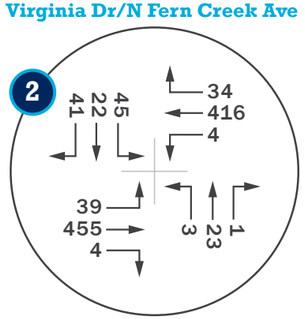


Virginia Dr/N Mills Ave



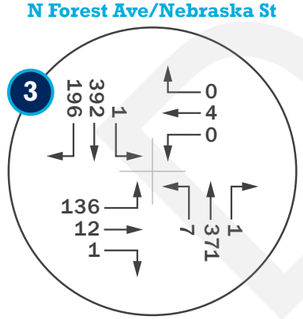
Int Delay 47.8 sec
LOS D

Virginia Dr/N Fern Creek Ave



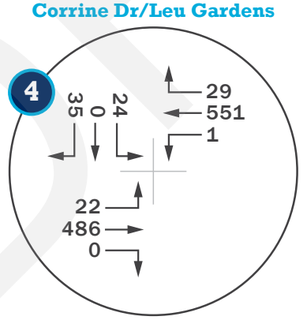
Int Delay 7.3 sec
LOS A

N Forest Ave/Nebraska St



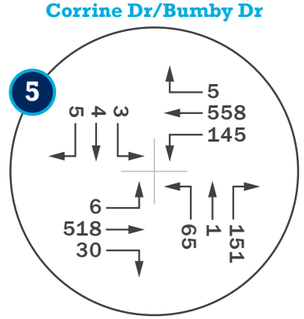
Int Delay 7.4 sec
LOS A

Corrine Dr/Leu Gardens



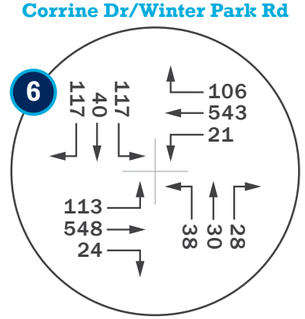
Int Delay 6.4 sec
LOS A

Corrine Dr/Bumby Dr



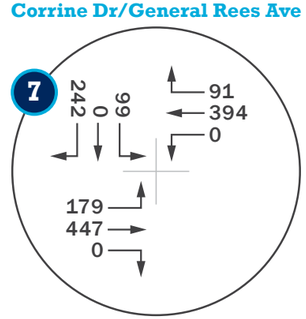
Int Delay 10.6 sec
LOS B

Corrine Dr/Winter Park Rd



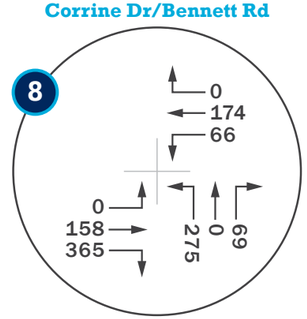
Int Delay 30.9 sec
LOS C

Corrine Dr/General Rees Ave



Int Delay 19.1 sec
LOS B

Corrine Dr/Bennett Rd



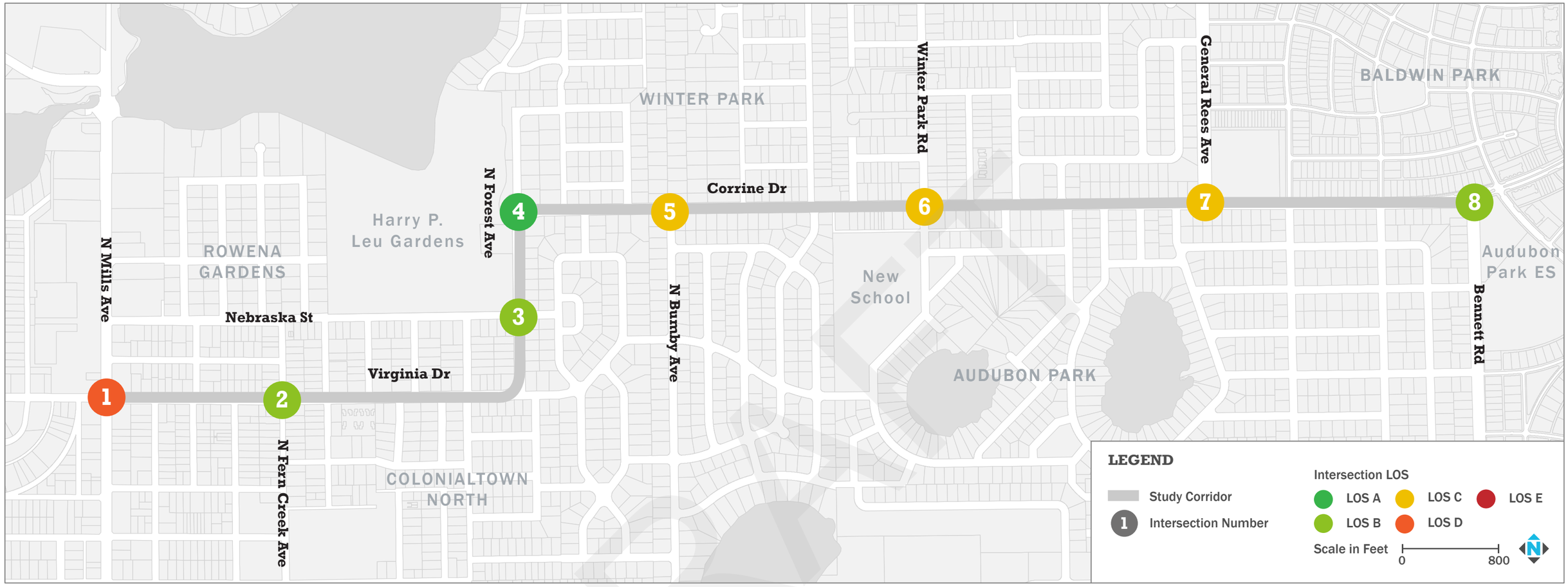
Int Delay 16.9 sec
LOS B

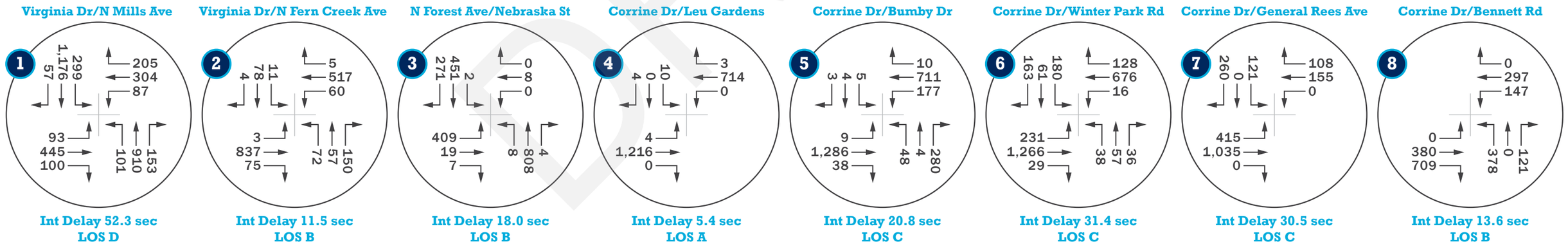
Corrine Drive Complete Streets Study

Existing Year (2017) Mid-Day Peak-Hour | 11:45AM - 12:45PM

Intersection Turning Movement Volumes & LOS

Figure 3





Corrine Drive Complete Streets Study

Existing Year (2017) PM Peak-Hour | 5:00PM - 6:00PM

Intersection Turning Movement Volumes & LOS

Figure 4

Future Year (2040) Operations

The future conditions analysis was conducted to anticipate growth in traffic for the design year 2040. The analysis assumed existing lane configurations and right turn on red (RTOR) parameters. Changes included:

- Signal phasing optimization
- Modification of cycle lengths to create consistency along the corridor
- Coordination offset optimization

Segment Analysis

Using a 1.5 percent growth rate for the volumes along Virginia Drive and Forest Avenue and 1.0 percent growth rate for the volumes along Corrine Drive, 2040 segment AADT's were developed. As shown in **Table 5,** in the future condition (2040), corridor segments experience AADT between 22,000 and 28,000 vehicles per day. Assuming a turn lane adjustment to multi-lane facilities with no median and exclusive left-turn lanes, the segment level of service is projected to be LOS D along the entire study corridor in 2040. As seen in **Table 6,** the threshold for LOS E (adopted LOS standard in Orlando and Orange County) is 32,400 vehicles per day (30,780 vehicles per day with median and turn lane adjustment).

Intersection Analysis

The detailed results of the future year analysis for the AM, mid-day, and PM peak hours are shown in **Table 9** and results are summarized graphically in **Figure 5** through **Figure 7**. Study intersections are projected to operate at overall Levels of Service (LOS) D or better during the AM, mid-day, and PM peak hours, with the exception of Mills Avenue in all time periods, and Bumby Avenue in the PM peak hour.

- The **Mills Avenue** intersection is projected to function at overall LOS E in the mid-day and PM peak hour, and LOS F in the AM peak hour. In the AM peak hour, almost all movements are above capacity.
- In the PM peak hour, the EB movements and WB left at **Bumby Avenue** are projected to be over capacity and experience average delays of 78 seconds (LOS E) and 183 seconds (LOS F), respectively. In the PM peak hour, the NB approach is also projected to be over capacity and experiences an average delay of 79 seconds (LOS E).
- In the PM peak hour, the SB right movement at **Winter Park Road** is projected to be over capacity and experience an average delay of 95 seconds (LOS F).

The future conditions operations were also simulated using SimTraffic to obtain the travel times used in the traffic operations analysis.

Table 9 Future Year (2040) Operations Analysis Summary

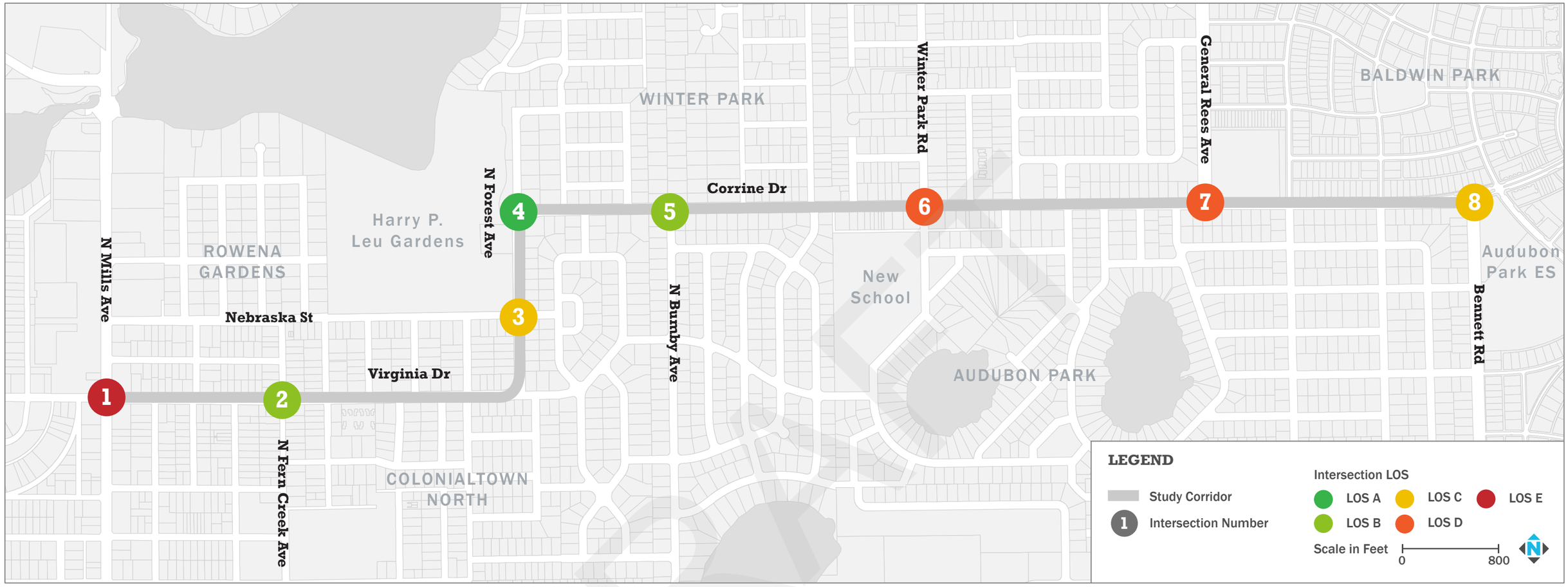
Intersection Metric	AM Peak Hour					Mid-Day Peak Hour					PM Peak Hour				
	EB	WB	NB	SB	INT	EB	WB	NB	SB	INT	EB	WB	NB	SB	INT
Mills Avenue – Virginia Drive															
LOS	E	F	F	F	F	E	E	D	D	E	F	F	E	E	E
Delay (sec)	71.0	86.3	98.8	114.2	96.8	78.1	74.9	45.7	46.4	58.9	87.9	87.0	66.6	70.3	74.6
Queue* (veh)	15.4	76.7	75.7	75.1	-	26.2	29.2	25.1	28.1	-	27.4	31.7	47.0	56.3	-
Fern Creek Avenue – Virginia Drive															
LOS	B	B	D	C	B	A	A	C	D	A	B	B	D	C	B
Delay (sec)	11.0	17.7	40.2	25.5	19.6	4.3	4.4	34.7	40.2	8.7	12.2	11.7	43.4	29.0	17.6
Queue* (veh)	7.5	21.0	17.6	1.3	-	5.1	5.3	1.6	7.3	-	13.6	8.8	16.9	5.0	-
Forest Avenue – Nebraska Street															
LOS	D	C	A	C	C	C	C	A	A	A	C	B	C	C	C
Delay (sec)	37.9	26.6	8.0	22.7	21.5	28.0	22.6	5.1	6.2	8.9	29.5	13.1	29.2	28.2	28.8
Queue* (veh)	13.0	0.9	5.8	32.7	-	7.3	0.1	3.9	7.2	-	22.8	0.3	20.3	18.5	-
Forest Avenue – Corrine Drive															
LOS	D	-	A	A	A	B	-	A	A	A	C	-	A	A	A
Delay (sec)	41.6	-	1.7	5.5	4.3	16.0	-	4.6	8.9	7.3	28.8	-	3.2	7.4	4.9
Queue* (veh)	0.1	-	3.1	14.1	-	1.8	-	3.2	5.9	-	0.8	-	9.9	8.4	-
Bumby Avenue – Corrine Drive															
LOS	B	A	D	C	B	B	B	D	C	B	E	D	E	C	E
Delay (sec)	16.6	3.1	49.5	30.9	11.6	15.6	11.6	37.1	26.9	17.1	78.0	54.6	78.7	25.5	70.0
Queue* (veh)	13.2	3.9	14.7	1.6	-	10.6	8.8	12.5	0.9	-	68.5	22.8	34.9	0.5	-

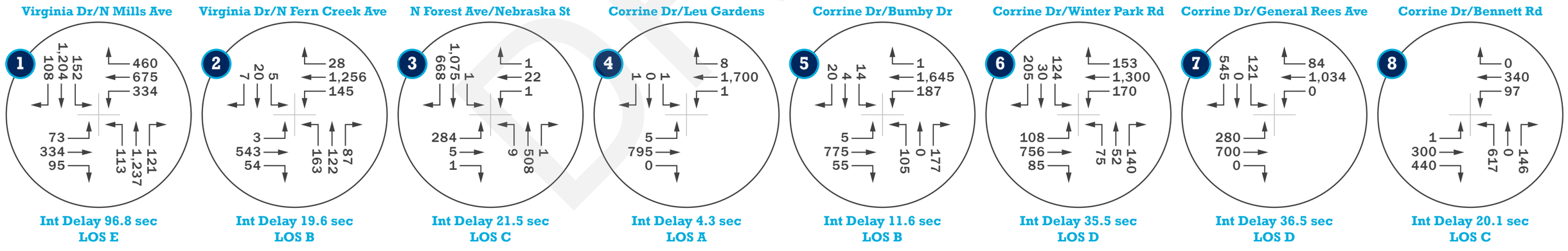
Winter Park Road – Corrine Drive															
LOS	D	C	D	D	D	C	C	C	C	C	A	C	D	E	C
Delay (sec)	35.3	31.1	46.4	48.3	35.5	24.1	25.7	30.0	28.4	25.7	5.8	32.1	38.7	76.5	24.7
Queue* (veh)	17.5	27.6	10.5	12.6	-	25.3	13.8	3.1	7.9	-	6.8	19.3	6.1	24.5	-
Corrine Drive – General Rees Avenue															
LOS	C	D	-	D	D	A	A	-	C	A	A	D	-	C	B
Delay (sec)	24.4	40.6	-	47.6	36.5	2.7	2.2	-	29.3	8.8	5.3	37.2	-	31.1	17.8
Queue* (veh)	13.0	22.1	-	37.9	-	5.2	1.4	-	19.7	-	13.2	17.5	-	22.6	-
Bennett Road – Corrine Drive															
LOS	A	B	D	-	C	B	A	D	-	B	A	B	D	-	B
Delay (sec)	3.5	11.1	40.7	-	20.1	12.4	6.0	38.5	-	19.3	5.9	10.3	40.4	-	15.4
Queue* (veh)	8.5	8.9	28.5	-	-	16.1	3.8	16.3	-	-	33.8	8.9	24.1	-	-

**Queue reported is the average 95th percentile queue (number of vehicles) from the SimTraffic simulation runs*

Table 10 Future Year (2040) Corridor Travel Time Analysis (N Mills Avenue to Bennett Drive)

AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour	
EB Travel Time (min)	WB Travel Time (min)	EB Travel Time (min)	WB Travel Time (min)	EB Travel Time (min)	WB Travel Time (min)
6.2	6.8	6.6	6.1	7.0	6.8



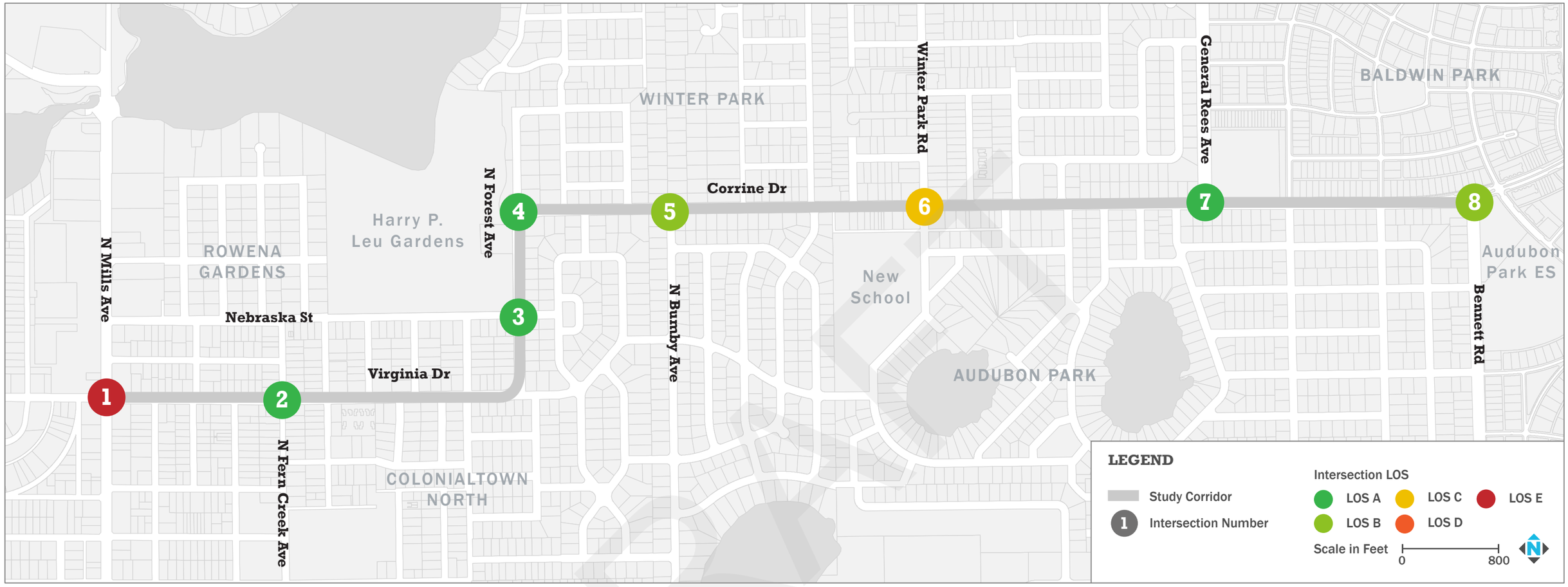


Corrine Drive Complete Streets Study

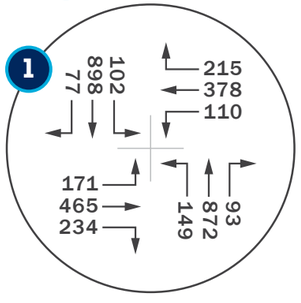
Future (2040) Optimized AM Peak-Hour | 7:30AM - 8:30AM

Intersection Turning Movement Volumes & LOS

Figure 5

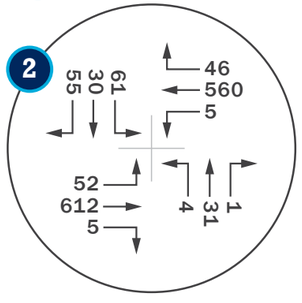


Virginia Dr/N Mills Ave



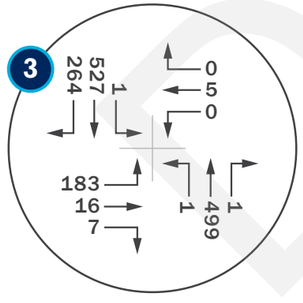
Int Delay 58.9 sec
LOS E

Virginia Dr/N Fern Creek Ave



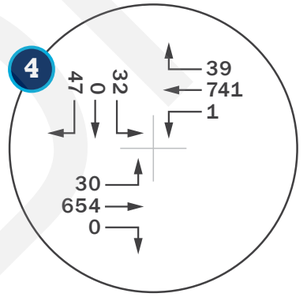
Int Delay 8.7 sec
LOS A

N Forest Ave/Nebraska St



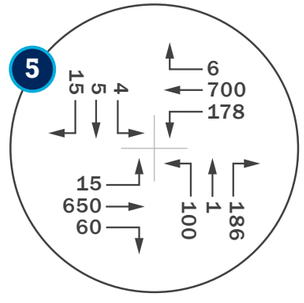
Int Delay 8.9 sec
LOS A

Corrine Dr/Leu Gardens



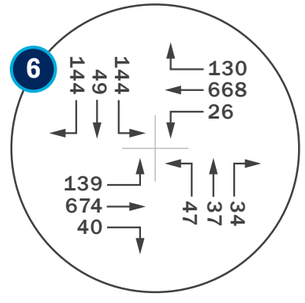
Int Delay 7.3 sec
LOS A

Corrine Dr/Bumby Dr



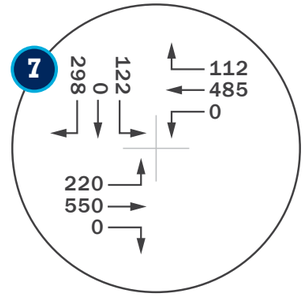
Int Delay 17.1 sec
LOS B

Corrine Dr/Winter Park Rd



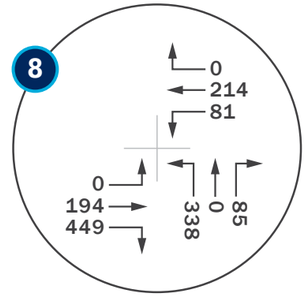
Int Delay 25.7 sec
LOS C

Corrine Dr/General Rees Ave



Int Delay 8.8 sec
LOS A

Corrine Dr/Bennett Rd



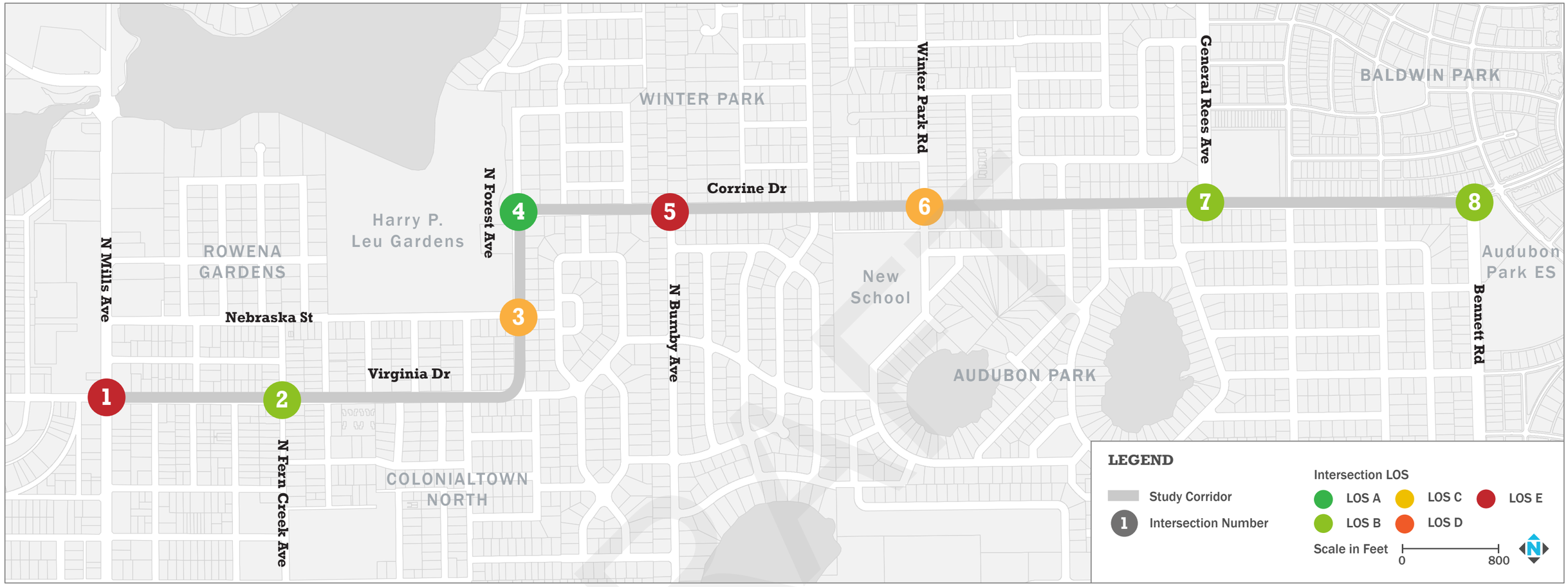
Int Delay 19.3 sec
LOS B

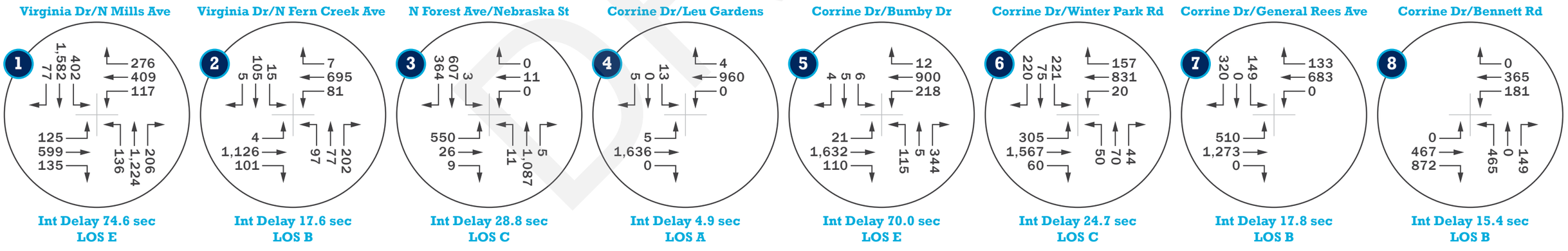
Corrine Drive Complete Streets Study

Future Year (2040) Optimized Mid-Day Peak-Hour | 11:45AM - 12:45PM

Intersection Turning Movement Volumes & LOS

Figure 6





Corrine Drive Complete Streets Study

Future Year (2040) Optimized PM Peak-Hour | 5:00PM - 6:00PM

Intersection Turning Movement Volumes & LOS

Figure 7

Section 5 Summary

SUMMARY

Existing and future conditions traffic operations analysis was conducted for the Corrine Drive study corridor, according to the methodology described in this memorandum. The following are the high-level summary of the analysis results:

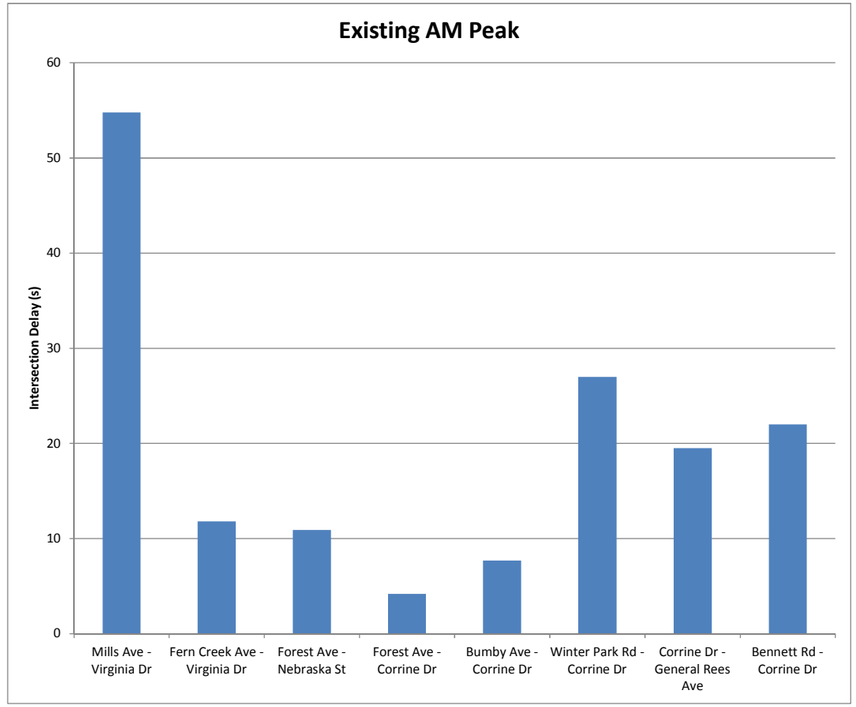
- **Mills Avenue** shows LOS D and E (at the adopted LOS standard) in both the existing and future conditions, with many of the intersection's movements being over capacity in the future condition. This intersection is coordinated in the north-south (Mills Avenue) direction and the Virginia Drive movements receive less green time.
- **Nebraska Street** is functioning well above the adopted LOS standard in the existing condition at LOS C. The SB right turn (in AM peak hour) and EB left turn (in PM peak hour) movements are nearing capacity in the existing condition. However, with optimized timings, these approaches do not reach above capacity conditions in the future year condition.
- **Bumby Avenue** is functioning well above the adopted LOS standard in the existing condition at LOS C. In the future condition, the WB left (in the AM peak hour) and NB right (in the PM peak hour) are over capacity. Because of the NB right/WB left high volume movement, the EB through movement receives less green time and shows above capacity conditions as well.
- **Winter Park Road** is functioning well above the adopted LOS standard in the existing condition at LOS C, but in the AM peak hour in the future condition, this overall intersection degrades to LOS D, closer to the adopted LOS standard. The WB approach (in the AM peak hour) is nearing capacity in the existing condition. However, with optimized timings, this approach does not reach above capacity conditions in the future condition. However, due to signal optimization, the SB right is projected to be over capacity in the future.
- **General Rees Avenue** is functioning well above the adopted LOS standard in the existing condition at LOS B and LOS C, but in the AM peak hour in the future condition, this overall intersection degrades to LOS D, closer to the adopted LOS standard. SB right turn (in the AM peak hour) and EB left turn (in the PM peak hour) is nearing capacity in the existing condition. However, with optimized timings, these approaches do not reach above capacity conditions in the future condition.
- **Bennett Drive** is functioning well above the adopted LOS standard in the existing and future conditions showing LOS B and LOS C, depending on time period. The NB right turn (in the AM

peak hour) is nearing capacity in existing. However, with optimized timings, this approach does not reaches above capacity conditions in the future condition.

5-Lane Concept and Variation

AM Peak (7:30-8:30am)

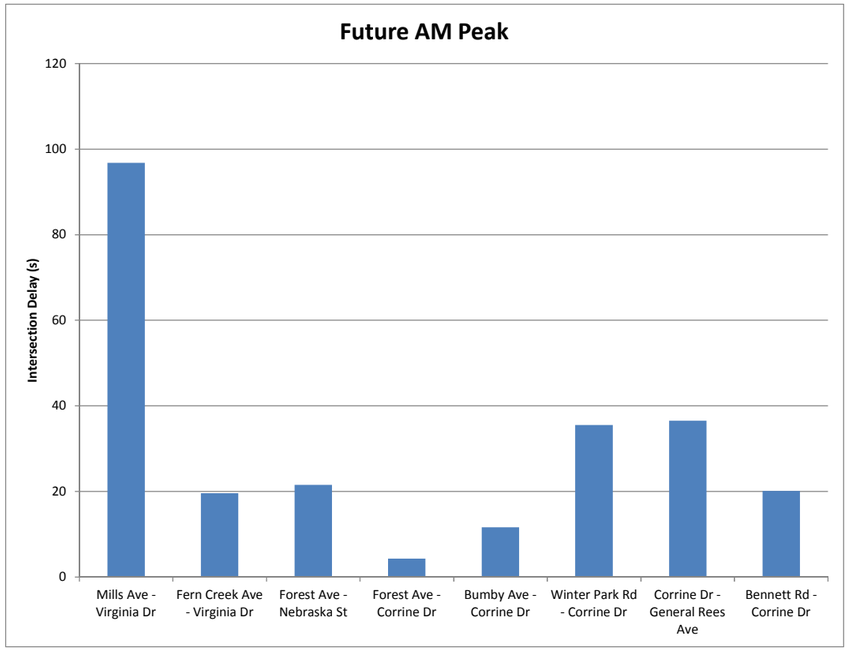
Existing (2017)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	E	D	D	D	
	Delay	57.8	73.1	44.2	46.0	54.8	
	Queue	11.6	54.8	28.9	28.5	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	C	B	B	
	Delay	7.3	10.0	25.3	19.2	11.8	
	Queue	4.2	10.4	9.4	0.7	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	A	A	B	
	Delay	27.7	22.2	5.1	9.7	10.9	
	Queue	7.8	0.5	2.9	13.5	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	-	A	A	A	
	Delay	34.1	-	1.9	5.3	4.2	
	Queue	0.1	-	2.1	9.3	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	A	D	D	A	
	Delay	10.5	1.3	43.5	35.5	7.7	
	Queue	8.7	2.9	9.9	1.2	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	D	C	C	C	
	Delay	6.7	37.4	29.3	31.6	27.0	
	Queue	3.6	27.0	2.4	8.5	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	B	-	D	B	
	Delay	3.8	19.2	-	40.7	19.5	
	Queue	5.3	14.0	-	30.9	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	D	-	C	
	Delay	1.7	8	47.5	-	22.0	
	Queue	3.0	5.9	25.1	-	-	



	Travel Time		
	Existing	Existing - Optimized Offsets	Future (20
EB			
Mills	51.3	54.3	63.5
Fern Creek	35.2	35.9	35.3
Nebraska	56.4	56.4	57.9
Leu Gardens	16.6	16.7	16.6
Bumby	32.5	32.4	34
Winter Park	46.0	51.6	64.3
General Rees	44.9	45.5	39.7
Bennett	66.0	64.9	60.2
Total	**348.9**	**357.7**	**371.5**
	5.8	**6.0**	**6.2**
WB			
Bennett	21.1	21.2	22.5
General Rees	46.4	49.1	48.1
Winter Park	65.3	67.7	61.5
Bumby	48.3	42.2	42.9
Leu Gardens	33.1	31.3	35.1
Nebraska	26.2	25.3	30.5
Fern Creek	56.6	55.3	58.4
Mills	83.9	84.5	106.6
Total	**380.9**	**376.6**	**405.6**
	6.3	**6.3**	**6.8**

AM Peak (7:30-8:30am)

Future Year (2040)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	F	F	F	F	
	Delay	71.0	86.3	98.8	114.2	96.8	
	Queue	15.4	76.7	75.7	75.1	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	D	C	B	
	Delay	11.0	17.7	40.2	25.5	19.6	
	Queue	7.5	21.0	17.6	1.3	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	C	A	C	C	
	Delay	37.9	26.6	8.0	22.7	21.5	
	Queue	13.0	0.9	5.8	32.7	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	-	A	A	A	
	Delay	41.6	-	1.7	5.5	4.3	
	Queue	0.1	-	3.1	14.1	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	A	D	C	B	
	Delay	16.6	3.1	49.5	30.9	11.6	
	Queue	13.2	3.9	14.7	1.6	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	C	D	D	D	
	Delay	35.3	31.1	46.4	48.3	35.5	
	Queue	17.5	27.6	10.5	12.6	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	D	-	D	D	
	Delay	24.4	40.6	-	47.6	36.5	
	Queue	13.0	22.1	-	37.9	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	B	D	-	C	
	Delay	3.5	11.1	40.7	-	20.1	
	Queue	8.5	8.9	28.5	-	-	



Summary of All Intervals

Start Time	7:15
End Time	8:30
Total Time (min)	75
Time Recorded (min)	60
# of Intervals	2
# of Recorded Intervals	1
Vehs Entered	5784
Vehs Exited	5797
Starting Vehs	272
Ending Vehs	259
Travel Distance (mi)	5070
Travel Time (hr)	277.4
Total Delay (hr)	110.0
Total Stops	8816
Fuel Used (gal)	198.1

Interval #0 Information Seeding

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	5784
Vehs Exited	5797
Starting Vehs	272
Ending Vehs	259
Travel Distance (mi)	5070
Travel Time (hr)	277.4
Total Delay (hr)	110.0
Total Stops	8816
Fuel Used (gal)	198.1

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.3	0.2	0.5
Total Delay (hr)	4.3	14.4	15.7	14.3	48.9
Travel Time (hr)	5.4	23.4	19.0	17.6	65.5

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.1
Total Delay (hr)	1.2	4.1	1.5	0.0	6.8
Travel Time (hr)	4.7	12.3	2.4	0.1	19.5

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.7	0.1	0.6	3.5	5.9
Travel Time (hr)	2.5	0.1	1.8	7.1	11.5

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.1	0.7	0.8
Travel Time (hr)	0.0	1.2	4.5	5.7

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.8	5.5	2.0	0.1	9.4
Travel Time (hr)	4.2	20.2	2.8	0.2	27.5

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	4.0	10.9	0.6	2.3	17.7
Travel Time (hr)	12.4	26.2	1.0	3.5	43.1

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Denied Delay (hr)	0.0	0.0	0.2	0.2
Total Delay (hr)	2.0	4.0	3.0	9.0
Travel Time (hr)	10.9	13.5	5.6	30.0

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.1	0.0	0.1
Total Delay (hr)	2.0	1.4	1.9	5.3
Travel Time (hr)	11.4	2.2	5.8	19.4

Total Network Performance

Denied Delay (hr)	1.0
Total Delay (hr)	109.0
Travel Time (hr)	277.4

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	41.9	51.3	0.1	6
Fern Creek Ave	2	9.8	35.2	0.2	24
	13	2.2	37.4	0.3	29
Total		53.8	123.8	0.6	18

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	12.9	39.7	0.3	27
Mills Ave	1	57.0	83.9	0.2	10
	24	2.4	13.1	0.1	23
Total		72.2	136.7	0.6	16

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.2	6.3	0.0	28
Nebraska St	3	4.2	12.7	0.1	22
	22	1.1	9.7	0.1	27
Corrine Dr	4	0.3	6.9	0.1	28
	9	0.4	10.1	0.1	30
Total		6.2	45.6	0.3	26

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	1.9	11.7	0.1	26
	22	1.2	8.0	0.1	24
Nebraska St	3	9.4	18.2	0.1	14
	19	1.6	10.8	0.1	26
	13	0.3	6.1	0.0	29
Total		14.5	54.9	0.3	22

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	-	-	0.1	-
	9	-	-	0.1	-
Bumby Ave	5	9.3	22.4	0.1	21
Winter Park Rd	6	11.3	46.0	0.3	27
General Rees Ave	7	6.1	44.9	0.4	31
Bennett Rd	8	18.4	66.0	0.4	20
Total		45.1	179.3	1.4	27

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	13.9	21.1	0.1	9
General Rees Ave	7	16.5	46.4	0.4	28
Winter Park Rd	6	27.4	65.3	0.4	21
Bumby Ave	5	13.5	48.3	0.3	26
	9	2.9	18.4	0.1	25
Corrine Dr	4	2.0	14.7	0.1	20
Total		76.1	214.3	1.4	23

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	L	T
Maximum Queue (ft)	149	202	201	235	970	713	185	496	496	134	300	548
Average Queue (ft)	50	109	114	182	498	172	140	389	326	29	127	363
95th Queue (ft)	110	170	185	291	839	416	218	530	474	95	282	537
Link Distance (ft)		366	366		1182	1182		481	481			514
Upstream Blk Time (%)								5	1			2
Queuing Penalty (veh)								0	0			0
Storage Bay Dist (ft)	100			185			135			200	200	
Storage Blk Time (%)	2	20		3	38		19	44				30
Queuing Penalty (veh)	2	11		15	95		89	37				34

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB
Directions Served	TR
Maximum Queue (ft)	529
Average Queue (ft)	319
95th Queue (ft)	487
Link Distance (ft)	514
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	30	133	117	199	268	272	192	53
Average Queue (ft)	1	48	64	56	134	119	102	10
95th Queue (ft)	10	104	118	122	245	239	169	35
Link Distance (ft)		1182	1182		1506	1506	381	408
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		0		0	5			
Queuing Penalty (veh)		0		1	5			

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	SB	SB	SB	B22
Directions Served	LTR	LTR	L	T	TR	L	T	TR	T
Maximum Queue (ft)	203	31	31	115	112	30	374	388	22
Average Queue (ft)	111	11	9	39	44	1	142	194	1
95th Queue (ft)	177	34	32	87	92	10	295	352	7
Link Distance (ft)	402	230		349	349		326	326	233
Upstream Blk Time (%)							1	1	
Queuing Penalty (veh)							4	8	
Storage Bay Dist (ft)			150			150			
Storage Blk Time (%)							3		
Queuing Penalty (veh)							0		

Intersection: 4: Forest Ave & Corrine Dr

Movement	EB	NB	NB	NB	SB	SB
Directions Served	R	L	T	T	T	TR
Maximum Queue (ft)	28	30	22	79	143	172
Average Queue (ft)	1	5	1	3	9	18
95th Queue (ft)	9	23	7	26	63	89
Link Distance (ft)	264		233	233	385	385
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	180	186	199	363	392	220	55
Average Queue (ft)	94	78	67	100	112	117	15
95th Queue (ft)	168	154	154	266	284	195	44
Link Distance (ft)	627	627		1769	1769	485	553
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)	1		0	2			
Queuing Penalty (veh)	0		2	4			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	161	160	181	200	342	394	74	93	138	200
Average Queue (ft)	67	93	103	19	249	260	29	31	52	102
95th Queue (ft)	125	144	159	101	352	371	61	75	106	185
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	0	0			24					
Queuing Penalty (veh)	0	0			3					

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	153	53	94	279	323	136	330
Average Queue (ft)	76	17	27	129	143	66	130
95th Queue (ft)	132	50	73	221	240	115	238
Link Distance (ft)		1974	1974	1828	1828		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)							1
Queuing Penalty (veh)							1

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	185	112	96	185	192	134
Average Queue (ft)	104	51	36	96	94	70
95th Queue (ft)	186	101	74	148	158	116
Link Distance (ft)	1828	1828		244	1030	1030
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			125			
Storage Blk Time (%)				2		
Queuing Penalty (veh)				2		

Network Summary

Network wide Queuing Penalty: 313

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

07/11/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	248	71	248	502	342	84	920	90	113	895	80
Future Volume (veh/h)	54	248	71	248	502	342	84	920	90	113	895	80
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.98	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	1900	1859	1900	1863	1881	1863	1792	1863	1900	1900	1848	1900
Adj Flow Rate, veh/h	61	279	80	279	564	384	94	1034	101	127	1006	90
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	1	2	6	2	2	0	3	3
Cap, veh/h	111	546	153	394	556	466	113	1484	145	174	1423	127
Arrive On Green	0.04	0.20	0.20	0.14	0.30	0.30	0.07	0.46	0.46	0.05	0.44	0.44
Sat Flow, veh/h	1810	2719	764	1774	1881	1575	1707	3253	318	3510	3251	291
Grp Volume(v), veh/h	61	179	180	279	564	384	94	562	573	127	543	553
Grp Sat Flow(s),veh/h/ln	1810	1766	1717	1774	1881	1575	1707	1770	1801	1755	1755	1787
Q Serve(g_s), s	4.3	14.4	15.0	19.5	47.3	36.3	8.7	40.5	40.6	5.7	40.3	40.3
Cycle Q Clear(g_c), s	4.3	14.4	15.0	19.5	47.3	36.3	8.7	40.5	40.6	5.7	40.3	40.3
Prop In Lane	1.00		0.45	1.00		1.00	1.00		0.18	1.00		0.16
Lane Grp Cap(c), veh/h	111	354	345	394	556	466	113	807	822	174	768	782
V/C Ratio(X)	0.55	0.51	0.52	0.71	1.01	0.82	0.83	0.70	0.70	0.73	0.71	0.71
Avail Cap(c_a), veh/h	149	367	357	418	556	466	146	807	822	417	768	782
HCM Platoon Ratio	1.00	1.00	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	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	56.9	57.1	41.5	56.4	52.5	73.8	34.7	34.7	75.0	36.6	36.6
Incr Delay (d2), s/veh	4.2	1.1	1.3	4.2	37.9	9.5	25.9	4.9	4.9	5.8	5.4	5.3
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(95%),veh/ln	4.0	11.6	11.6	14.6	54.8	23.2	8.6	28.4	28.9	5.2	28.1	28.5
LnGrp Delay(d),s/veh	55.5	58.0	58.3	45.7	94.3	62.0	99.7	39.6	39.5	80.7	42.0	42.0
LnGrp LOS	E	E	E	D	F	E	F	D	D	F	D	D
Approach Vol, veh/h		420			1227			1229			1223	
Approach Delay, s/veh		57.8			73.1			44.2			46.0	
Approach LOS		E			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	16.9	76.4	12.7	54.0	13.9	79.4	27.9	38.8
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	13.7	* 64	* 9.2	47.3	19.0	* 59	23.8	33.3
Max Q Clear Time (g_c+I1), s	10.7	42.3	6.3	49.3	7.7	42.6	21.5	17.0
Green Ext Time (p_c), s	0.0	5.6	0.0	0.0	0.3	5.2	0.2	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	404	40	108	934	21	121	91	65	4	15	5
Future Volume (veh/h)	2	404	40	108	934	21	121	91	65	4	15	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1267	1883	1900	1900	1882	1900	1900	1892	1900	1900	1819	1900
Adj Flow Rate, veh/h	2	454	45	121	1049	24	136	102	73	4	17	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	50	1	1	0	1	1	0	0	0	0	0	0
Cap, veh/h	252	1886	186	573	2053	47	231	144	91	93	295	92
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	356	3282	324	913	3573	82	627	598	376	120	1224	384
Grp Volume(v), veh/h	2	246	253	121	525	548	311	0	0	27	0	0
Grp Sat Flow(s),veh/h/ln	356	1789	1817	913	1788	1867	1602	0	0	1728	0	0
Q Serve(g_s), s	0.2	4.4	4.5	4.9	11.5	11.5	10.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.7	4.4	4.5	9.4	11.5	11.5	11.8	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.04	0.44		0.23	0.15		0.22
Lane Grp Cap(c), veh/h	252	1028	1044	573	1027	1073	465	0	0	480	0	0
V/C Ratio(X)	0.01	0.24	0.24	0.21	0.51	0.51	0.67	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	252	1028	1044	573	1027	1073	693	0	0	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)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	6.8	6.8	9.1	8.3	8.3	23.1	0.0	0.0	19.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.8	1.8	1.7	2.0	0.0	0.0	0.1	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(95%),veh/ln	0.0	4.1	4.3	2.4	10.1	10.4	9.4	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	11.9	7.3	7.3	10.0	10.1	10.1	25.1	0.0	0.0	19.1	0.0	0.0
LnGrp LOS	B	A	A	A	B	B	C			B		
Approach Vol, veh/h		501			1194			311			27	
Approach Delay, s/veh		7.3			10.1			25.1			19.1	
Approach LOS		A			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.4		21.6		43.4		21.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		28.0		25.0		28.0		25.0
Max Q Clear Time (g_c+I1), s		13.5		13.8		13.7		2.8
Green Ext Time (p_c), s		14.0		1.9		13.8		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	4	1	1	16	1	7	378	1	1	799	497
Future Volume (veh/h)	211	4	1	1	16	1	7	378	1	1	799	497
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	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	1900	1864	1900	1900	1900	1900	1900	1863	1900	1900	1881	1900
Adj Flow Rate, veh/h	229	4	1	1	17	1	8	411	1	1	868	540
Adj No. of Lanes	0	1	0	0	1	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, %	0	0	0	0	0	0	0	2	2	0	1	1
Cap, veh/h	383	5	1	59	357	20	262	2362	6	705	1393	849
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1379	24	6	21	1756	99	388	3622	9	989	2136	1302
Grp Volume(v), veh/h	234	0	0	19	0	0	8	201	211	1	723	685
Grp Sat Flow(s),veh/h/ln	1410	0	0	1876	0	0	388	1770	1861	989	1787	1650
Q Serve(g_s), s	10.3	0.0	0.0	0.0	0.0	0.0	0.9	3.1	3.1	0.0	16.3	17.0
Cycle Q Clear(g_c), s	10.9	0.0	0.0	0.6	0.0	0.0	17.9	3.1	3.1	3.1	16.3	17.0
Prop In Lane	0.98		0.00	0.05		0.05	1.00		0.00	1.00		0.79
Lane Grp Cap(c), veh/h	389	0	0	436	0	0	262	1154	1214	705	1165	1076
V/C Ratio(X)	0.60	0.00	0.00	0.04	0.00	0.00	0.03	0.17	0.17	0.00	0.62	0.64
Avail Cap(c_a), veh/h	611	0	0	730	0	0	262	1154	1214	705	1165	1076
HCM Platoon Ratio	1.00	1.00	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	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	26.2	0.0	0.0	22.1	0.0	0.0	12.5	4.7	4.7	5.3	7.0	7.1
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.0	2.5	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(95%),veh/ln	7.8	0.0	0.0	0.5	0.0	0.0	0.2	2.9	3.0	0.0	13.5	13.2
LnGrp Delay(d),s/veh	27.7	0.0	0.0	22.2	0.0	0.0	12.7	5.0	5.0	5.3	9.5	10.0
LnGrp LOS	C			C			B	A	A	A	A	B
Approach Vol, veh/h		234			19			420			1409	
Approach Delay, s/veh		27.7			22.2			5.2			9.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		19.0		50.0		19.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		45.0		25.0		45.0		25.0
Max Q Clear Time (g_c+I1), s		19.9		12.9		19.0		2.6
Green Ext Time (p_c), s		15.1		1.1		15.4		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	1	4	591	1299	6
Future Volume (veh/h)	1	1	4	591	1299	6
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	1900	1900	1900	1863	1881	1900
Adj Flow Rate, veh/h	1	1	4	649	1427	7
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	1	1
Cap, veh/h	7	6	12	2862	2615	13
Arrive On Green	0.00	0.00	0.01	0.81	0.72	0.72
Sat Flow, veh/h	1810	1615	1810	3632	3742	18
Grp Volume(v), veh/h	1	1	4	649	699	735
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1770	1787	1878
Q Serve(g_s), s	0.0	0.0	0.1	2.5	10.7	10.7
Cycle Q Clear(g_c), s	0.0	0.0	0.1	2.5	10.7	10.7
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	7	6	12	2862	1282	1347
V/C Ratio(X)	0.14	0.16	0.34	0.23	0.55	0.55
Avail Cap(c_a), veh/h	586	523	617	5127	1827	1920
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	29.1	29.1	29.0	1.3	3.9	3.9
Incr Delay (d2), s/veh	9.3	11.8	16.4	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.1	0.2	2.1	8.9	9.3
LnGrp Delay(d),s/veh	38.4	40.9	45.5	1.4	4.3	4.3
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	2			653	1434	
Approach Delay, s/veh	39.7			1.6	4.3	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		52.5		6.2	5.4	47.1		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		85.0		19.0	20.0	60.0		
Max Q Clear Time (g_c+I1), s		4.5		2.0	2.1	12.7		
Green Ext Time (p_c), s		38.6		0.0	0.0	29.4		

Intersection Summary	
HCM 2010 Ctrl Delay	3.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	619	20	152	1316	1	50	0	144	11	3	13
Future Volume (veh/h)	1	619	20	152	1316	1	50	0	144	11	3	13
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1864	1900	1792	1881	1900	1900	1823	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	680	22	167	1446	1	55	0	158	12	3	14
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	6	1	1	0	0	0	0	0	0
Cap, veh/h	300	2111	68	534	2421	2	97	14	189	126	44	111
Arrive On Green	0.00	0.60	0.60	0.12	1.00	1.00	0.17	0.00	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3499	113	1707	3665	3	305	86	1124	445	262	659
Grp Volume(v), veh/h	1	344	358	167	705	742	213	0	0	29	0	0
Grp Sat Flow(s),veh/h/ln	1810	1771	1841	1707	1787	1881	1515	0	0	1366	0	0
Q Serve(g_s), s	0.0	9.6	9.6	3.7	0.0	0.0	10.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.6	9.6	3.7	0.0	0.0	13.5	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.00	0.26		0.74	0.41		0.48
Lane Grp Cap(c), veh/h	300	1068	1111	534	1180	1242	300	0	0	281	0	0
V/C Ratio(X)	0.00	0.32	0.32	0.31	0.60	0.60	0.71	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	533	1068	1111	656	1180	1242	526	0	0	502	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.35	0.35	0.35	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	9.8	9.8	6.2	0.0	0.0	40.1	0.0	0.0	35.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.8	0.1	0.8	0.7	3.1	0.0	0.0	0.2	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(95%),veh/ln	0.0	8.6	8.8	2.9	0.5	0.5	9.9	0.0	0.0	1.2	0.0	0.0
LnGrp Delay(d),s/veh	7.8	10.6	10.5	6.3	0.8	0.7	43.2	0.0	0.0	35.3	0.0	0.0
LnGrp LOS	A	B	B	A	A	A	D			D		
Approach Vol, veh/h		703			1614			213			29	
Approach Delay, s/veh		10.5			1.3			43.2			35.3	
Approach LOS		B			A			D			D	

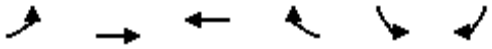
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	72.0		21.8	11.8	66.3		21.8
Change Period (Y+Rc), s	6.0	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	13.0	38.0		32.0	13.0	38.0		32.0
Max Q Clear Time (g_c+I1), s	2.0	2.0		15.5	5.7	11.6		3.4
Green Ext Time (p_c), s	0.0	27.0		1.3	0.2	21.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	627	25	13	1177	124	49	42	11	101	24	163
Future Volume (veh/h)	100	627	25	13	1177	124	49	42	11	101	24	163
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1810	1870	1900	1759	1863	1900	1667	1900	1900	1900	1884	1900
Adj Flow Rate, veh/h	108	674	27	14	1266	133	53	45	12	109	26	175
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	1	1	8	2	2	14	0	0	0	0	0
Cap, veh/h	169	1625	65	402	1420	149	274	346	92	439	52	348
Arrive On Green	0.08	0.93	0.93	0.01	0.44	0.44	0.03	0.24	0.24	0.04	0.25	0.25
Sat Flow, veh/h	1723	3480	139	1675	3226	338	1587	1441	384	1810	211	1420
Grp Volume(v), veh/h	108	344	357	14	692	707	53	0	57	109	0	201
Grp Sat Flow(s),veh/h/ln	1723	1777	1842	1675	1770	1794	1587	0	1826	1810	0	1631
Q Serve(g_s), s	3.6	2.1	2.1	0.5	36.0	36.4	2.5	0.0	2.4	4.0	0.0	10.6
Cycle Q Clear(g_c), s	3.6	2.1	2.1	0.5	36.0	36.4	2.5	0.0	2.4	4.0	0.0	10.6
Prop In Lane	1.00		0.08	1.00		0.19	1.00		0.21	1.00		0.87
Lane Grp Cap(c), veh/h	169	830	861	402	779	789	274	0	438	439	0	400
V/C Ratio(X)	0.64	0.41	0.41	0.03	0.89	0.90	0.19	0.00	0.13	0.25	0.00	0.50
Avail Cap(c_a), veh/h	169	830	861	447	779	789	282	0	438	439	0	400
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)	0.94	0.94	0.94	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	1.8	1.8	15.1	25.8	25.9	27.7	0.0	29.8	27.9	0.0	32.5
Incr Delay (d2), s/veh	7.3	1.4	1.4	0.0	11.6	12.0	0.3	0.0	0.6	0.3	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(95%),veh/ln	3.6	2.0	2.0	0.4	26.5	27.0	2.0	0.0	2.4	0.8	0.0	8.5
LnGrp Delay(d),s/veh	29.4	3.3	3.2	15.1	37.4	37.9	28.1	0.0	30.4	28.2	0.0	33.5
LnGrp LOS	C	A	A	B	D	D	C		C	C		C
Approach Vol, veh/h		809			1413			110			310	
Approach Delay, s/veh		6.7			37.4			29.3			31.6	
Approach LOS		A			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	10.0	50.0	10.0	30.0	7.3	52.7	9.5	30.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	4.0	44.0	4.0	24.0	4.0	44.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	5.6	38.4	6.0	4.4	2.5	4.1	4.5	12.6
Green Ext Time (p_c), s	0.0	5.2	0.0	1.6	0.0	28.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	203	511	841	68	98	443
Future Volume (veh/h)	203	511	841	68	98	443
Number	5	2	6	16	7	14
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	1881	1881	1861	1900	1810	1863
Adj Flow Rate, veh/h	211	532	876	71	102	461
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	2	2	5	2
Cap, veh/h	391	2216	1587	129	448	540
Arrive On Green	0.16	1.00	0.48	0.48	0.26	0.26
Sat Flow, veh/h	1792	3668	3407	269	1723	1583
Grp Volume(v), veh/h	211	532	467	480	102	461
Grp Sat Flow(s),veh/h/ln	1792	1787	1768	1814	1723	1583
Q Serve(g_s), s	5.9	0.0	18.7	18.7	4.7	26.0
Cycle Q Clear(g_c), s	5.9	0.0	18.7	18.7	4.7	26.0
Prop In Lane	1.00			0.15	1.00	1.00
Lane Grp Cap(c), veh/h	391	2216	847	869	448	540
V/C Ratio(X)	0.54	0.24	0.55	0.55	0.23	0.85
Avail Cap(c_a), veh/h	514	2216	847	869	448	540
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.77	0.77	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	18.5	18.5	29.1	30.6
Incr Delay (d2), s/veh	0.8	0.2	0.8	0.7	0.3	12.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.1	13.6	13.9	4.0	30.9
LnGrp Delay(d),s/veh	12.9	0.2	19.2	19.2	29.4	43.2
LnGrp LOS	B	A	B	B	C	D
Approach Vol, veh/h		743	947		563	
Approach Delay, s/veh		3.8	19.2		40.7	
Approach LOS		A	B		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		68.0		32.0	14.1	53.9		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		62.0		26.0	15.0	41.0		
Max Q Clear Time (g_c+I1), s		2.0		28.0	7.9	20.7		
Green Ext Time (p_c), s		21.7		0.0	0.2	12.7		

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	225	336	79	263	502	119
Future Volume (veh/h)	225	336	79	263	502	119
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1863	1900	1900	1845	1900
Adj Flow Rate, veh/h	234	350	82	274	324	338
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	0	0	3	0
Cap, veh/h	997	1195	602	1224	415	381
Arrive On Green	0.89	0.89	0.05	0.64	0.24	0.24
Sat Flow, veh/h	1881	1549	1810	1900	1757	1615
Grp Volume(v), veh/h	234	350	82	274	324	338
Grp Sat Flow(s),veh/h/ln	1881	1549	1810	1900	1757	1615
Q Serve(g_s), s	1.8	2.1	1.9	6.0	17.3	20.2
Cycle Q Clear(g_c), s	1.8	2.1	1.9	6.0	17.3	20.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	997	1195	602	1224	415	381
V/C Ratio(X)	0.23	0.29	0.14	0.22	0.78	0.89
Avail Cap(c_a), veh/h	997	1195	667	1224	509	468
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	0.7	8.3	7.4	35.8	36.9
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.4	6.3	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	3.0	1.7	5.9	14.0	25.1
LnGrp Delay(d),s/veh	3.0	0.9	8.4	7.8	42.0	52.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	584			356	662	
Approach Delay, s/veh	1.7			8.0	47.5	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		70.4		29.6	11.4	59.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		59.0		29.0	9.0	44.0		
Max Q Clear Time (g_c+I1), s		8.0		22.2	3.9	4.1		
Green Ext Time (p_c), s		8.2		1.4	0.1	8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Summary of All Intervals

Run Number	1	2	3	4	5	Future	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	7:10	7:10	7:10	7:10	7:10	7:10	7:10
Total Time (min)	13	13	13	13	13	13	13
Time Recorded (min)	10	10	10	10	10	10	10
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1373	1371	1332	1344	1322	1286	1336
Vehs Exited	1181	1158	1140	1163	1148	1151	1156
Starting Vehs	264	233	231	230	227	262	232
Ending Vehs	456	446	423	411	401	397	420
Travel Distance (mi)	1044	1013	1003	988	964	1000	1002
Travel Time (hr)	69.6	65.6	67.6	62.4	59.3	62.4	64.5
Total Delay (hr)	35.0	31.9	34.3	29.8	27.2	29.4	31.3
Total Stops	2254	2070	2151	1974	1898	1930	2045
Fuel Used (gal)	43.9	42.5	42.6	41.2	39.5	41.0	41.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:10
Total Time (min)	10

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Future	Avg
Vehs Entered	1373	1371	1332	1344	1322	1286	1336
Vehs Exited	1181	1158	1140	1163	1148	1151	1156
Starting Vehs	264	233	231	230	227	262	232
Ending Vehs	456	446	423	411	401	397	420
Travel Distance (mi)	1044	1013	1003	988	964	1000	1002
Travel Time (hr)	69.6	65.6	67.6	62.4	59.3	62.4	64.5
Total Delay (hr)	35.0	31.9	34.3	29.8	27.2	29.4	31.3
Total Stops	2254	2070	2151	1974	1898	1930	2045
Fuel Used (gal)	43.9	42.5	42.6	41.2	39.5	41.0	41.8

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	1.7	6.5	5.1	5.0	18.2

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	1.1	2.6	0.9	0.1	4.7

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	0.7	0.0	0.4	1.7	2.9

4: Forest Ave & Corrine Dr Performance by approach

Approach	NB	SB	All
Travel Time (hr)	0.3	0.9	1.1

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	0.9	4.0	0.9	0.1	5.9

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	2.9	5.3	0.5	0.9	9.6

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Travel Time (hr)	2.3	3.5	1.3	7.1

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Travel Time (hr)	2.1	0.5	1.4	4.0

Total Network Performance

Travel Time (hr)	64.5

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	55.3	63.5	0.1	5
Fern Creek Ave	2	13.3	35.3	0.2	24
	13	2.8	37.3	0.3	29
Total		71.3	136.2	0.6	16

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	15.7	41.3	0.3	26
Mills Ave	1	84.4	106.6	0.2	8
	24	2.4	12.7	0.1	24
Total		102.5	160.5	0.6	14

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.4	6.5	0.0	27
Nebraska St	3	5.7	14.1	0.1	20
	22	1.2	9.8	0.1	27
Corrine Dr	4	0.3	6.8	0.1	29
	9	0.5	10.1	0.1	30
Total		8.1	47.3	0.3	26

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	1.5	11.3	0.1	27
	22	1.7	8.4	0.1	23
Nebraska St	3	13.4	22.1	0.1	12
	19	1.9	11.0	0.1	25
	13	0.4	6.1	0.0	29
Total		19.0	59.0	0.3	21

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	-	-	0.1	-
	9	-	-	0.1	-
Bumby Ave	5	11.1	23.9	0.1	20
Winter Park Rd	6	31.7	64.3	0.3	19
General Rees Ave	7	5.4	39.7	0.4	35
Bennett Rd	8	16.7	60.2	0.4	22
Total		64.9	188.1	1.4	26

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	15.2	22.5	0.1	8
General Rees Ave	7	22.5	48.1	0.4	27
Winter Park Rd	6	25.6	61.5	0.4	23
Bumby Ave	5	13.0	42.9	0.3	29
	9	2.8	17.9	0.1	26
Corrine Dr	4	2.4	17.2	0.1	18
Total		81.6	210.1	1.4	23

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	L	T
Maximum Queue (ft)	144	292	295	234	1104	961	177	514	503	153	299	532
Average Queue (ft)	74	194	200	198	789	450	136	499	472	93	200	504
95th Queue (ft)	163	326	323	303	1323	1060	208	519	559	184	340	587
Link Distance (ft)		366	366		1182	1182		481	481			514
Upstream Blk Time (%)		1	0		3	0		29	21			18
Queuing Penalty (veh)		0	0		24	2		0	0			0
Storage Bay Dist (ft)	100			185			135			200	200	
Storage Blk Time (%)	6	40		21	51		30	44			1	39
Queuing Penalty (veh)	10	29		141	170		186	49			4	59

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB
Directions Served	TR
Maximum Queue (ft)	529
Average Queue (ft)	459
95th Queue (ft)	573
Link Distance (ft)	514
Upstream Blk Time (%)	8
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	6	152	169	136	267	217	291	55
Average Queue (ft)	1	75	91	65	155	117	232	28
95th Queue (ft)	11	183	199	160	301	248	319	71
Link Distance (ft)		1182	1182		1506	1506	381	408
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		1			12			
Queuing Penalty (veh)		0			17			

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	SB	SB	SB	B22
Directions Served	LTR	LTR	L	T	TR	L	T	TR	T
Maximum Queue (ft)	221	41	14	105	128	5	326	360	22
Average Queue (ft)	166	18	6	52	66	1	190	238	4
95th Queue (ft)	272	50	28	138	150	10	354	396	28
Link Distance (ft)	402	230		349	349		326	326	233
Upstream Blk Time (%)							1	2	
Queuing Penalty (veh)							8	19	
Storage Bay Dist (ft)			150			150			
Storage Blk Time (%)				0			9		
Queuing Penalty (veh)				0			0		

Intersection: 4: Forest Ave & Corrine Dr

Movement	NB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	5	9	24
Average Queue (ft)	1	2	5
95th Queue (ft)	10	17	47
Link Distance (ft)		385	385
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	20	153	186	148	224	241	256	49
Average Queue (ft)	5	100	106	87	135	163	197	29
95th Queue (ft)	24	183	210	183	264	268	301	60
Link Distance (ft)		627	627		1769	1769	485	553
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		2		2	5			
Queuing Penalty (veh)		0		18	10			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	158	318	323	182	362	368	102	155	101	225
Average Queue (ft)	82	211	219	114	258	273	69	90	72	149
95th Queue (ft)	183	350	369	216	407	419	137	192	119	266
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	5	15		2	24		2	6		
Queuing Penalty (veh)	17	16		11	40		4	4		

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	193	51	53	327	331	133	288
Average Queue (ft)	115	22	25	249	248	87	181
95th Queue (ft)	215	57	70	391	382	157	302
Link Distance (ft)		1974	1974	1828	1828		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)	3						2
Queuing Penalty (veh)	9						2

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	182	104	117	177	166	171
Average Queue (ft)	115	59	53	120	124	107
95th Queue (ft)	225	110	128	199	180	195
Link Distance (ft)	1828	1828		244	1030	1030
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			125			
Storage Blk Time (%)				6		
Queuing Penalty (veh)				6		

Network Summary

Network wide Queuing Penalty: 859

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

07/10/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Future Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.97
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	1900	1859	1900	1863	1881	1863	1792	1863	1900	1900	1848	1900
Adj Flow Rate, veh/h	82	375	107	375	758	517	127	1390	136	171	1353	121
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	1	2	6	2	2	0	3	3
Cap, veh/h	90	576	162	432	674	565	114	1338	130	154	1256	112
Arrive On Green	0.03	0.21	0.21	0.17	0.36	0.36	0.07	0.41	0.41	0.04	0.39	0.39
Sat Flow, veh/h	1810	2717	766	1774	1881	1577	1707	3254	317	3510	3253	290
Grp Volume(v), veh/h	82	242	240	375	758	517	127	752	774	171	727	747
Grp Sat Flow(s),veh/h/ln	1810	1766	1717	1774	1881	1577	1707	1770	1801	1755	1755	1787
Q Serve(g_s), s	4.0	20.0	20.5	25.8	57.3	50.1	10.7	65.8	65.8	7.0	61.8	61.8
Cycle Q Clear(g_c), s	4.0	20.0	20.5	25.8	57.3	50.1	10.7	65.8	65.8	7.0	61.8	61.8
Prop In Lane	1.00		0.45	1.00		1.00	1.00		0.18	1.00		0.16
Lane Grp Cap(c), veh/h	90	375	364	432	674	565	114	728	741	154	678	690
V/C Ratio(X)	0.91	0.65	0.66	0.87	1.13	0.92	1.11	1.03	1.04	1.11	1.07	1.08
Avail Cap(c_a), veh/h	90	375	364	445	674	565	114	728	741	154	678	690
HCM Platoon Ratio	1.00	1.00	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	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	57.5	57.7	39.3	51.3	49.0	74.7	47.1	47.1	76.5	49.1	49.1
Incr Delay (d2), s/veh	65.5	3.8	4.3	11.1	68.8	13.9	117.7	42.3	45.4	106.3	55.7	58.6
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(95%),veh/ln	5.9	15.4	15.4	18.7	76.7	30.4	15.8	73.3	75.7	10.2	72.8	75.1
LnGrp Delay(d),s/veh	125.7	61.4	62.0	50.4	120.1	62.9	192.3	89.4	92.5	182.8	104.8	107.7
LnGrp LOS	F	E	E	D	F	E	F	F	F	F	F	F
Approach Vol, veh/h		564			1650			1653			1645	
Approach Delay, s/veh		71.0			86.3			98.8			114.2	
Approach LOS		E			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	17.0	68.2	10.8	64.0	13.0	72.2	34.2	40.6
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	10.7	* 62	* 4	57.3	7.0	* 66	29.2	32.7
Max Q Clear Time (g_c+I1), s	12.7	63.8	6.0	59.3	9.0	67.8	27.8	22.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	96.8
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Future Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1267	1883	1900	1900	1882	1900	1900	1892	1900	1900	1819	1900
Adj Flow Rate, veh/h	3	610	61	163	1411	31	183	137	98	6	22	8
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	50	1	1	0	1	1	0	0	0	0	0	0
Cap, veh/h	151	1920	192	454	2095	46	251	159	110	94	316	105
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	251	3278	327	779	3577	79	677	539	372	176	1076	358
Grp Volume(v), veh/h	3	332	339	163	705	737	418	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	251	1789	1817	779	1788	1868	1589	0	0	1610	0	0
Q Serve(g_s), s	0.8	9.5	9.5	13.5	26.9	27.0	23.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.9	9.5	9.5	23.0	26.9	27.0	25.2	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.04	0.44		0.23	0.17		0.22
Lane Grp Cap(c), veh/h	151	1048	1064	454	1047	1094	519	0	0	515	0	0
V/C Ratio(X)	0.02	0.32	0.32	0.36	0.67	0.67	0.81	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	151	1048	1064	454	1047	1094	639	0	0	636	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)	0.54	0.54	0.54	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.7	10.5	10.5	16.4	14.2	14.2	33.7	0.0	0.0	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	2.2	3.5	3.3	6.5	0.0	0.0	0.1	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(95%),veh/ln	0.1	7.4	7.5	5.7	20.3	21.0	17.6	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	23.8	11.0	11.0	18.6	17.6	17.5	40.2	0.0	0.0	25.5	0.0	0.0
LnGrp LOS	C	B	B	B	B	B	D			C		
Approach Vol, veh/h		674			1605			418			36	
Approach Delay, s/veh		11.0			17.7			40.2			25.5	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		64.6		35.4		64.6		35.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		51.0		37.0		51.0		37.0
Max Q Clear Time (g_c+I1), s		29.0		27.2		29.9		3.5
Green Ext Time (p_c), s		21.0		2.3		12.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
Future Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
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	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	1900	1863	1900	1900	1900	1900	1900	1863	1900	1900	1881	1900
Adj Flow Rate, veh/h	309	5	1	1	24	1	10	552	1	1	1168	726
Adj No. of Lanes	0	1	0	0	1	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, %	0	0	0	0	0	0	0	2	2	0	1	1
Cap, veh/h	421	6	1	44	450	18	113	2329	4	579	1412	802
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1375	22	4	15	1797	72	243	3625	7	869	2198	1249
Grp Volume(v), veh/h	315	0	0	26	0	0	10	269	284	1	929	965
Grp Sat Flow(s),veh/h/ln	1402	0	0	1885	0	0	243	1770	1861	869	1787	1660
Q Serve(g_s), s	19.3	0.0	0.0	0.0	0.0	0.0	3.4	6.0	6.0	0.0	36.2	46.4
Cycle Q Clear(g_c), s	20.2	0.0	0.0	1.0	0.0	0.0	49.8	6.0	6.0	6.0	36.2	46.4
Prop In Lane	0.98		0.00	0.04		0.04	1.00		0.00	1.00		0.75
Lane Grp Cap(c), veh/h	427	0	0	512	0	0	113	1137	1196	579	1148	1066
V/C Ratio(X)	0.74	0.00	0.00	0.05	0.00	0.00	0.09	0.24	0.24	0.00	0.81	0.90
Avail Cap(c_a), veh/h	525	0	0	644	0	0	113	1137	1196	579	1148	1066
HCM Platoon Ratio	1.00	1.00	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	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	33.7	0.0	0.0	26.6	0.0	0.0	35.5	7.0	7.0	8.3	12.4	14.3
Incr Delay (d2), s/veh	4.2	0.0	0.0	0.0	0.0	0.0	1.6	0.5	0.5	0.0	6.2	12.4
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(95%),veh/ln	13.0	0.0	0.0	0.9	0.0	0.0	0.5	5.5	5.8	0.0	26.8	32.7
LnGrp Delay(d),s/veh	37.9	0.0	0.0	26.6	0.0	0.0	37.1	7.5	7.5	8.3	18.6	26.7
LnGrp LOS	D			C			D	A	A	A	B	C
Approach Vol, veh/h		315			26			563			1895	
Approach Delay, s/veh		37.9			26.6			8.0			22.7	
Approach LOS		D			C			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.0		28.4		65.0		28.4
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		60.0		30.0		60.0		30.0
Max Q Clear Time (g_c+I1), s		51.8		22.2		48.4		3.0
Green Ext Time (p_c), s		2.3		1.2		9.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	1	5	795	1700	8
Future Volume (veh/h)	1	1	5	795	1700	8
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	1900	1900	1900	1863	1900	1900
Adj Flow Rate, veh/h	1	1	5	874	1868	9
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	2	0	0
Cap, veh/h	7	6	14	2903	2697	13
Arrive On Green	0.00	0.00	0.01	0.82	0.73	0.73
Sat Flow, veh/h	1810	1615	1810	3632	3779	18
Grp Volume(v), veh/h	1	1	5	874	915	962
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1770	1805	1897
Q Serve(g_s), s	0.0	0.0	0.2	3.7	17.2	17.2
Cycle Q Clear(g_c), s	0.0	0.0	0.2	3.7	17.2	17.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	7	6	14	2903	1321	1389
V/C Ratio(X)	0.14	0.16	0.35	0.30	0.69	0.69
Avail Cap(c_a), veh/h	550	491	174	3965	1705	1791
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	31.0	31.0	30.8	1.3	4.5	4.6
Incr Delay (d2), s/veh	9.3	11.8	13.6	0.1	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.1	0.3	3.1	13.6	14.1
LnGrp Delay(d),s/veh	40.3	42.8	44.5	1.4	5.5	5.5
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	2			879	1877	
Approach Delay, s/veh	41.6			1.7	5.5	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		56.2		6.2	5.5	50.7		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		5.7		2.0	2.2	19.2		
Green Ext Time (p_c), s		9.7		0.0	0.0	26.5		

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Future Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1865	1900	1792	1881	1900	1900	1829	1900	1900	1900	1900
Adj Flow Rate, veh/h	5	852	60	205	1808	1	115	0	195	15	4	22
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	6	1	1	0	0	0	0	0	0
Cap, veh/h	223	1771	125	418	2182	1	163	11	210	139	51	163
Arrive On Green	0.01	0.53	0.53	0.15	1.00	1.00	0.23	0.00	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3353	236	1707	3666	2	503	48	934	397	229	724
Grp Volume(v), veh/h	5	450	462	205	881	928	310	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	1810	1772	1817	1707	1787	1881	1485	0	0	1349	0	0
Q Serve(g_s), s	0.1	16.1	16.1	5.4	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	16.1	16.1	5.4	0.0	0.0	20.4	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.00	0.37		0.63	0.37		0.54
Lane Grp Cap(c), veh/h	223	936	960	418	1064	1120	384	0	0	353	0	0
V/C Ratio(X)	0.02	0.48	0.48	0.49	0.83	0.83	0.81	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	302	936	960	492	1064	1120	391	0	0	360	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.30	0.30	0.30	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.9	14.9	14.9	9.6	0.0	0.0	37.8	0.0	0.0	30.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	0.3	2.4	2.3	11.7	0.0	0.0	0.1	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(95%),veh/ln	0.1	12.9	13.2	3.9	1.3	1.3	14.7	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	10.9	16.7	16.6	9.9	2.4	2.3	49.5	0.0	0.0	30.9	0.0	0.0
LnGrp LOS	B	B	B	A	A	A	D			C		
Approach Vol, veh/h		917			2014			310			41	
Approach Delay, s/veh		16.6			3.1			49.5			30.9	
Approach LOS		B			A			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	6.9	65.5		27.5	13.6	58.8		27.5
Change Period (Y+Rc), s	6.3	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	5.0	54.7		23.0	12.0	48.0		23.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		22.4	7.4	18.1		3.9
Green Ext Time (p_c), s	0.0	33.3		0.1	0.2	9.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Future Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1810	1853	1900	1759	1863	1900	1667	1900	1900	1900	1884	1900
Adj Flow Rate, veh/h	116	813	91	183	1398	165	81	56	151	133	32	220
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	1	1	8	2	2	14	0	0	0	0	0
Cap, veh/h	179	1435	161	329	1528	179	178	81	219	238	39	270
Arrive On Green	0.02	0.15	0.15	0.08	0.48	0.48	0.04	0.18	0.18	0.05	0.19	0.19
Sat Flow, veh/h	1723	3185	357	1675	3184	373	1587	450	1214	1810	207	1423
Grp Volume(v), veh/h	116	449	455	183	772	791	81	0	207	133	0	252
Grp Sat Flow(s),veh/h/ln	1723	1761	1781	1675	1770	1787	1587	0	1664	1810	0	1630
Q Serve(g_s), s	3.6	23.7	23.7	5.8	40.2	41.3	4.0	0.0	11.6	5.0	0.0	14.8
Cycle Q Clear(g_c), s	3.6	23.7	23.7	5.8	40.2	41.3	4.0	0.0	11.6	5.0	0.0	14.8
Prop In Lane	1.00		0.20	1.00		0.21	1.00		0.73	1.00		0.87
Lane Grp Cap(c), veh/h	179	793	802	329	849	858	178	0	300	238	0	310
V/C Ratio(X)	0.65	0.57	0.57	0.56	0.91	0.92	0.46	0.00	0.69	0.56	0.00	0.81
Avail Cap(c_a), veh/h	179	793	802	430	849	858	178	0	300	238	0	310
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.46	0.46	0.46	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	33.5	33.5	16.5	24.0	24.3	33.6	0.0	38.4	34.6	0.0	38.8
Incr Delay (d2), s/veh	6.6	2.5	2.4	0.7	8.1	9.1	1.8	0.0	12.3	2.9	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(95%),veh/ln	3.6	17.4	17.5	4.5	26.5	27.6	3.4	0.0	10.5	5.7	0.0	12.6
LnGrp Delay(d),s/veh	30.4	36.0	35.9	17.2	32.0	33.3	35.5	0.0	50.7	37.5	0.0	54.0
LnGrp LOS	C	D	D	B	C	C	D		D	D		D
Approach Vol, veh/h		1020			1746			288			385	
Approach Delay, s/veh		35.3			31.1			46.4			48.3	
Approach LOS		D			C			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	11.0	54.0	11.0	24.0	14.0	51.0	10.0	25.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	48.0	5.0	18.0	14.0	39.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	5.6	43.3	7.0	13.6	7.8	25.7	6.0	16.8
Green Ext Time (p_c), s	0.0	4.0	0.0	0.5	0.2	6.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	280	700	1034	84	121	545
Future Volume (veh/h)	280	700	1034	84	121	545
Number	5	2	6	16	7	14
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	1881	1881	1861	1900	1810	1863
Adj Flow Rate, veh/h	292	729	1077	88	126	568
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	2	2	5	2
Cap, veh/h	335	2180	1446	118	465	607
Arrive On Green	0.04	0.20	0.14	0.14	0.27	0.27
Sat Flow, veh/h	1792	3668	3405	270	1723	1583
Grp Volume(v), veh/h	292	729	575	590	126	568
Grp Sat Flow(s),veh/h/ln	1792	1787	1768	1814	1723	1583
Q Serve(g_s), s	8.8	17.5	31.2	31.2	5.8	27.0
Cycle Q Clear(g_c), s	8.8	17.5	31.2	31.2	5.8	27.0
Prop In Lane	1.00			0.15	1.00	1.00
Lane Grp Cap(c), veh/h	335	2180	772	792	465	607
V/C Ratio(X)	0.87	0.33	0.74	0.75	0.27	0.94
Avail Cap(c_a), veh/h	652	2180	772	792	465	607
HCM Platoon Ratio	0.33	0.33	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.74	0.74	1.00	1.00
Uniform Delay (d), s/veh	24.1	22.5	37.4	37.5	28.7	29.7
Incr Delay (d2), s/veh	4.1	0.3	3.2	3.1	0.3	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	13.0	21.6	22.1	5.0	37.9
LnGrp Delay(d),s/veh	28.3	22.9	40.6	40.6	29.1	51.7
LnGrp LOS	C	C	D	D	C	D
Approach Vol, veh/h		1021	1165		694	
Approach Delay, s/veh		24.4	40.6		47.6	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		67.0		33.0	17.3	49.7		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		61.0		27.0	29.0	26.0		
Max Q Clear Time (g_c+I1), s		19.5		29.0	10.8	33.2		
Green Ext Time (p_c), s		8.3		0.0	0.6	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	300	440	97	340	617	146
Future Volume (veh/h)	300	440	97	340	617	146
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1863	1900	1900	1845	1900
Adj Flow Rate, veh/h	312	458	101	354	398	415
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	0	0	3	0
Cap, veh/h	891	1193	476	1121	509	468
Arrive On Green	0.79	0.79	0.06	0.59	0.29	0.29
Sat Flow, veh/h	1881	1549	1810	1900	1757	1615
Grp Volume(v), veh/h	312	458	101	354	398	415
Grp Sat Flow(s),veh/h/ln	1881	1549	1810	1900	1757	1615
Q Serve(g_s), s	4.8	5.5	2.7	9.4	20.8	24.6
Cycle Q Clear(g_c), s	4.8	5.5	2.7	9.4	20.8	24.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	891	1193	476	1121	509	468
V/C Ratio(X)	0.35	0.38	0.21	0.32	0.78	0.89
Avail Cap(c_a), veh/h	891	1193	519	1121	703	646
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.0	1.4	11.0	10.3	32.6	33.9
Incr Delay (d2), s/veh	0.3	0.3	0.2	0.7	3.9	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	8.5	2.4	8.9	16.0	28.5
LnGrp Delay(d),s/veh	6.3	1.6	11.2	11.1	36.5	44.8
LnGrp LOS	A	A	B	B	D	D
Approach Vol, veh/h	770			455	813	
Approach Delay, s/veh	3.5			11.1	40.7	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.0		35.0	11.6	53.4		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		48.0		40.0	8.0	34.0		
Max Q Clear Time (g_c+I1), s		11.4		26.6	4.7	7.5		
Green Ext Time (p_c), s		3.6		2.4	0.1	6.1		

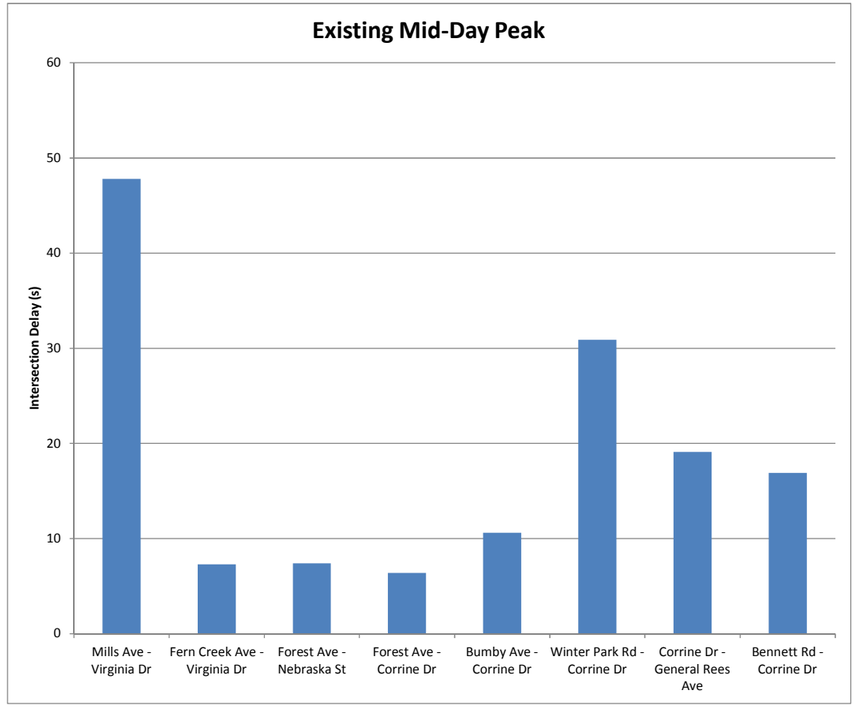
Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Mid-Day Peak (11:45am-12:45pm)

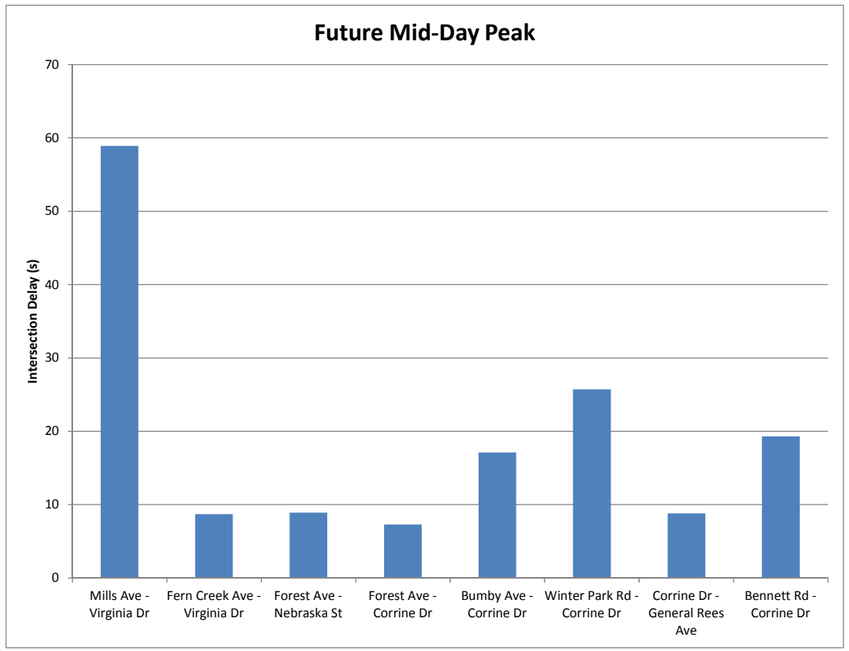
Existing (2017)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	E	C	C	D	
	Delay	67.1	70.6	33.0	32.6	47.8	
	Queue	19.1	21.3	15.9	17.4	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	C	C	A	
	Delay	4.2	4.3	26.6	29.1	7.3	
	Queue	3.4	3.4	0.9	4.1	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	A	A	A	
	Delay	27.2	23.2	3.8	4.4	7.4	
	Queue	5.1	0.1	2.4	4.1	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	-	A	A	A	
	Delay	15.7	-	4.1	7.5	6.4	
	Queue	1.3	-	2.1	3.9	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	A	D	C	B	
	Delay	10.8	1.7	38.0	30.3	10.6	
	Queue	7.3	2.8	9.9	0.5	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	C	C	C	
	Delay	33.4	33.9	21.6	20.4	30.9	
	Queue	12.1	12.9	2.1	5.4	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	-	C	B	
	Delay	17.7	17.3	-	24.2	19.1	
	Queue	8.5	7.6	-	16.1	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	D	-	B	
	Delay	5.3	5.2	42.2	-	16.9	
	Queue	9.5	3.1	15.0	-	-	



	Travel Time		
	Existing	Existing - Optimized Offsets	Future (20
EB			
Mills	62.8	59.9	52
Fern Creek	34.7	31.4	32.8
Nebraska	57.2	55.9	57.1
Leu Gardens	19	18.5	19.3
Bumby	33.6	33.9	38.6
Winter Park	65.9	48.3	52.6
General Rees	61.8	48.3	44.8
Bennett	68.6	68.7	68.7
Total	**403.6**	**364.9**	**365.9**
	6.7	**6.1**	**6.1**
WB			
Bennett	21.3	22.2	20.1
General Rees	67.3	63.9	59.8
Winter Park	86.2	59	56.6
Bumby	50.1	41.9	44.3
Leu Gardens	33.2	32.3	33.3
Nebraska	20.9	21.7	23
Fern Creek	49.3	50.5	51.5
Mills	78.8	82.7	74.4
Total	**407.1**	**374.2**	**363**
	6.8	**6.2**	**6.1**

Mid-Day Peak (11:45am-12:45pm)

Future Year (2040)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	E	D	D	E	
	Delay	78.1	74.9	45.7	46.4	58.9	
	Queue	26.2	29.2	25.1	28.1	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	C	D	A	
	Delay	4.3	4.4	34.7	40.2	8.7	
	Queue	5.1	5.3	1.6	7.3	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	A	A	A	
	Delay	28.0	22.6	5.1	6.2	8.9	
	Queue	7.3	0.1	3.9	7.2	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	-	A	A	A	
	Delay	16.0	-	4.6	8.9	7.3	
	Queue	1.8	-	3.2	5.9	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	D	C	B	
	Delay	15.6	11.6	37.1	26.9	17.1	
	Queue	10.6	8.8	12.5	0.9	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	C	C	C	
	Delay	24.1	25.7	30.0	28.4	25.7	
	Queue	25.3	13.8	3.1	7.9	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	-	C	A	
	Delay	2.7	2.2	-	29.3	8.8	
	Queue	5.2	1.4	-	19.7	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	A	D	-	B	
	Delay	12.4	6.0	38.5	-	19.3	
	Queue	16.1	3.8	16.3	-	-	



Summary of All Intervals

Start Time	11:30
End Time	12:45
Total Time (min)	75
Time Recorded (min)	60
# of Intervals	2
# of Recorded Intervals	1
Vehs Entered	4436
Vehs Exited	4442
Starting Vehs	187
Ending Vehs	181
Travel Distance (mi)	3396
Travel Time (hr)	187.3
Total Delay (hr)	73.3
Total Stops	6547
Fuel Used (gal)	134.2

Interval #0 Information Seeding

Start Time	11:30
End Time	11:45
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	11:45
End Time	12:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	4436
Vehs Exited	4442
Starting Vehs	187
Ending Vehs	181
Travel Distance (mi)	3396
Travel Time (hr)	187.3
Total Delay (hr)	73.3
Total Stops	6547
Fuel Used (gal)	134.2

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	10.9	9.3	10.5	9.6	40.2

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	5.0	3.9	0.2	0.9	9.9

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	1.7	0.1	1.8	2.1	5.7

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Travel Time (hr)	0.2	1.4	2.1	3.8

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	3.8	9.8	2.9	0.1	16.6

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	12.9	15.1	1.1	2.5	31.7

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Travel Time (hr)	12.4	8.6	2.3	23.3

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Travel Time (hr)	10.0	1.6	3.0	14.5

Total Network Performance

Travel Time (hr)	187.3

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	53.3	62.8	0.1	5
Fern Creek Ave	2	9.7	34.7	0.2	25
	13	2.9	38.7	0.3	28
Total		65.9	136.2	0.6	16

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	4.2	33.0	0.3	32
Mills Ave	1	53.9	78.8	0.2	11
	24	2.6	13.3	0.1	23
Total		60.6	125.1	0.6	18

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.4	6.4	0.0	27
Nebraska St	3	3.8	12.1	0.1	23
	22	1.1	9.9	0.1	26
Corrine Dr	4	2.5	9.1	0.1	21
	9	0.8	10.6	0.1	28
Total		8.7	48.2	0.3	25

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	3.1	12.9	0.1	23
	22	0.8	7.6	0.1	26
Nebraska St	3	4.6	13.3	0.1	20
	19	1.0	10.3	0.1	27
	13	0.2	6.0	0.0	29
Total		9.7	50.0	0.3	24

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	9.5	17.7	0.1	12
	9	0.8	12.8	0.1	24
Bumby Ave	5	9.9	23.0	0.1	20
Winter Park Rd	6	31.1	65.9	0.3	19
General Rees Ave	7	24.9	61.8	0.4	23
Bennett Rd	8	22.2	68.6	0.4	19
Total		98.4	249.8	1.4	20

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	14.1	21.3	0.1	9
General Rees Ave	7	33.7	67.3	0.4	19
Winter Park Rd	6	48.8	86.2	0.4	16
Bumby Ave	5	14.9	50.1	0.3	25
	9	1.8	17.5	0.1	27
Corrine Dr	4	2.9	15.7	0.1	19
Total		116.2	258.0	1.4	19

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	B24	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	R	L	T	TR	L	L
Maximum Queue (ft)	150	398	431	34	235	399	114	185	496	463	47	299
Average Queue (ft)	101	210	212	1	85	200	53	114	224	197	10	75
95th Queue (ft)	166	336	358	11	177	341	89	199	368	355	34	159
Link Distance (ft)		366	366	931		1182	1182		481	481		
Upstream Blk Time (%)		1	1						0	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (ft)	100				185			135			200	200
Storage Blk Time (%)	11	37				17		8	22			
Queuing Penalty (veh)	18	47				14		27	25			

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	382	309
Average Queue (ft)	192	160
95th Queue (ft)	306	267
Link Distance (ft)	514	514
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	8	
Queuing Penalty (veh)	6	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	53	178	224	30	95	66	50	144
Average Queue (ft)	10	49	65	1	37	22	18	54
95th Queue (ft)	35	132	159	10	84	56	42	110
Link Distance (ft)		1182	1182		1506	1506	381	408
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		0						
Queuing Penalty (veh)		0						

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	TR
Maximum Queue (ft)	147	31	30	116	139	140	194
Average Queue (ft)	76	6	1	45	53	36	62
95th Queue (ft)	130	26	10	96	112	81	130
Link Distance (ft)	402	230		349	349	326	326
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)						0	
Queuing Penalty (veh)						0	

Intersection: 4: Forest Ave & Corrine Dr

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	30	53	50	125	143	115	163
Average Queue (ft)	15	19	15	28	40	29	47
95th Queue (ft)	39	47	41	86	107	78	118
Link Distance (ft)	264	264		233	233	385	385
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	31	155	161	140	140	183	247	53
Average Queue (ft)	3	73	67	66	68	93	121	7
95th Queue (ft)	18	133	141	121	138	169	211	31
Link Distance (ft)		627	627		1769	1769	485	553
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		0		0	0			
Queuing Penalty (veh)		0		0	0			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	200	243	256	54	307	309	72	74	143	181
Average Queue (ft)	78	135	138	21	164	184	28	33	57	74
95th Queue (ft)	151	210	218	53	239	250	58	67	100	143
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	0	5			15					
Queuing Penalty (veh)	0	6			3					

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	267	186	226	179	195	94	78
Average Queue (ft)	108	104	116	111	116	44	42
95th Queue (ft)	196	163	178	169	177	80	74
Link Distance (ft)		1974	1974	1828	1828		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)	1						
Queuing Penalty (veh)	2						

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	140	122	78	120	90	85
Average Queue (ft)	71	49	37	66	43	35
95th Queue (ft)	122	107	68	113	72	74
Link Distance (ft)	1828	1828		244	1030	1030
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			125			
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 149

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	346	174	82	281	160	111	648	69	76	668	57
Future Volume (veh/h)	127	346	174	82	281	160	111	648	69	76	668	57
Number	3	8	18	7	4	14	1	6	16	5	2	12
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	1881	1887	1900	1863	1900	1881	1863	1881	1900	1900	1880	1900
Adj Flow Rate, veh/h	140	380	191	90	309	176	122	712	76	84	734	63
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	0	1	2	1	1	0	1	1
Cap, veh/h	215	516	256	194	373	308	143	1727	184	128	1611	138
Arrive On Green	0.07	0.22	0.22	0.05	0.20	0.20	0.08	0.53	0.53	0.04	0.49	0.49
Sat Flow, veh/h	1792	2321	1149	1774	1900	1567	1774	3254	347	3510	3322	285
Grp Volume(v), veh/h	140	292	279	90	309	176	122	391	397	84	394	403
Grp Sat Flow(s),veh/h/ln	1792	1793	1677	1774	1900	1567	1774	1787	1814	1755	1786	1822
Q Serve(g_s), s	9.9	24.2	24.8	6.4	25.0	16.3	10.9	21.0	21.0	3.8	23.4	23.4
Cycle Q Clear(g_c), s	9.9	24.2	24.8	6.4	25.0	16.3	10.9	21.0	21.0	3.8	23.4	23.4
Prop In Lane	1.00		0.69	1.00		1.00	1.00		0.19	1.00		0.16
Lane Grp Cap(c), veh/h	215	399	373	194	373	308	143	949	963	128	866	883
V/C Ratio(X)	0.65	0.73	0.75	0.46	0.83	0.57	0.85	0.41	0.41	0.65	0.46	0.46
Avail Cap(c_a), veh/h	230	418	391	254	443	365	174	949	963	351	866	883
HCM Platoon Ratio	1.00	1.00	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	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	57.8	58.0	49.1	61.7	58.2	72.6	22.5	22.6	76.1	27.2	27.2
Incr Delay (d2), s/veh	5.8	6.2	7.4	1.7	10.6	1.7	27.6	1.3	1.3	5.5	1.7	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(95%),veh/ln	9.0	18.6	18.1	5.8	20.4	11.6	10.6	16.0	16.2	3.5	17.6	17.9
LnGrp Delay(d),s/veh	54.3	64.0	65.4	50.8	72.3	59.9	100.3	23.9	23.9	81.6	29.0	28.9
LnGrp LOS	D	E	E	D	E	E	F	C	C	F	C	C
Approach Vol, veh/h		711			575			910			881	
Approach Delay, s/veh		62.6			65.2			34.1			34.0	
Approach LOS		E			E			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	19.2	84.0	18.7	38.1	11.9	91.3	14.5	42.3
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	15.7	* 68	* 13	37.3	16.0	* 68	13.8	37.3
Max Q Clear Time (g_c+I1), s	12.9	25.4	11.9	27.0	5.8	23.0	8.4	26.8
Green Ext Time (p_c), s	0.1	3.6	0.0	4.4	0.1	3.6	0.1	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	455	4	4	416	34	3	23	1	45	22	41
Future Volume (veh/h)	39	455	4	4	416	34	3	23	1	45	22	41
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1863	1900	1900	1849	1900	1900	1900	1900	1900	1881	1900
Adj Flow Rate, veh/h	43	506	4	4	462	38	3	26	1	50	24	46
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	0	3	3	0	0	0	5	5	5
Cap, veh/h	687	2487	20	681	2268	186	65	239	9	142	66	84
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	912	3599	28	903	3282	269	62	1738	62	501	482	611
Grp Volume(v), veh/h	43	249	261	4	246	254	30	0	0	120	0	0
Grp Sat Flow(s),veh/h/ln	912	1770	1857	903	1756	1794	1863	0	0	1594	0	0
Q Serve(g_s), s	1.2	3.5	3.5	0.1	3.5	3.6	0.0	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	4.8	3.5	3.5	3.7	3.5	3.6	1.0	0.0	0.0	4.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.15	0.10		0.03	0.42		0.38
Lane Grp Cap(c), veh/h	687	1223	1283	681	1214	1240	313	0	0	292	0	0
V/C Ratio(X)	0.06	0.20	0.20	0.01	0.20	0.20	0.10	0.00	0.00	0.41	0.00	0.00
Avail Cap(c_a), veh/h	687	1223	1283	681	1214	1240	763	0	0	676	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)	0.68	0.68	0.68	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	3.9	3.9	4.5	3.9	3.9	26.5	0.0	0.0	28.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.3	0.2	0.0	0.4	0.4	0.2	0.0	0.0	1.1	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(95%),veh/ln	0.6	3.3	3.4	0.1	3.3	3.4	0.9	0.0	0.0	4.1	0.0	0.0
LnGrp Delay(d),s/veh	4.9	4.1	4.1	4.6	4.3	4.3	26.6	0.0	0.0	29.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			C		
Approach Vol, veh/h		553			504			30			120	
Approach Delay, s/veh		4.2			4.3			26.6			29.1	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.4		15.6		54.4		15.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		31.0		27.0		31.0		27.0
Max Q Clear Time (g_c+I1), s		5.7		3.0		6.8		6.8
Green Ext Time (p_c), s		19.1		1.0		18.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	12	5	0	4	0	1	371	1	1	392	196
Future Volume (veh/h)	136	12	5	0	4	0	1	371	1	1	392	196
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)	0.99		0.98	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	1900	1883	1900	1900	1900	1900	1900	1881	1900	1900	1869	1900
Adj Flow Rate, veh/h	143	13	5	0	4	0	1	391	1	1	413	206
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	1
Cap, veh/h	303	22	7	0	298	0	617	2522	6	768	1579	778
Arrive On Green	0.16	0.16	0.16	0.00	0.16	0.00	0.69	0.69	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1264	140	45	0	1900	0	817	3657	9	1007	2289	1127
Grp Volume(v), veh/h	161	0	0	0	4	0	1	191	201	1	319	300
Grp Sat Flow(s),veh/h/ln	1448	0	0	0	1900	0	817	1787	1879	1007	1775	1641
Q Serve(g_s), s	6.7	0.0	0.0	0.0	0.1	0.0	0.0	2.4	2.4	0.0	4.4	4.5
Cycle Q Clear(g_c), s	6.9	0.0	0.0	0.0	0.1	0.0	4.6	2.4	2.4	2.4	4.4	4.5
Prop In Lane	0.89		0.03	0.00		0.00	1.00		0.00	1.00		0.69
Lane Grp Cap(c), veh/h	332	0	0	0	298	0	617	1233	1296	768	1224	1132
V/C Ratio(X)	0.49	0.00	0.00	0.00	0.01	0.00	0.00	0.15	0.16	0.00	0.26	0.26
Avail Cap(c_a), veh/h	658	0	0	0	728	0	617	1233	1296	768	1224	1132
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	0.0	0.0	23.2	0.0	4.7	3.5	3.5	3.9	3.8	3.8
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.5	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(95%),veh/ln	5.1	0.0	0.0	0.0	0.1	0.0	0.0	2.3	2.4	0.0	4.1	3.9
LnGrp Delay(d),s/veh	27.2	0.0	0.0	0.0	23.2	0.0	4.7	3.8	3.8	3.9	4.3	4.4
LnGrp LOS	C				C		A	A	A	A	A	A
Approach Vol, veh/h		161			4			393			620	
Approach Delay, s/veh		27.2			23.2			3.8			4.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		15.2		50.0		15.2
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		45.0		25.0		45.0		25.0
Max Q Clear Time (g_c+I1), s		6.6		8.9		6.5		2.1
Green Ext Time (p_c), s		7.6		0.8		7.6		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	35	22	486	551	29
Future Volume (veh/h)	24	35	22	486	551	29
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	1900	1900	1900	1881	1882	1900
Adj Flow Rate, veh/h	25	37	23	512	580	31
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1
Cap, veh/h	159	142	61	2243	1603	86
Arrive On Green	0.09	0.09	0.03	0.63	0.46	0.46
Sat Flow, veh/h	1810	1615	1810	3668	3547	184
Grp Volume(v), veh/h	25	37	23	512	300	311
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1787	1788	1850
Q Serve(g_s), s	0.5	0.8	0.5	2.4	4.2	4.2
Cycle Q Clear(g_c), s	0.5	0.8	0.5	2.4	4.2	4.2
Prop In Lane	1.00	1.00	1.00			0.10
Lane Grp Cap(c), veh/h	159	142	61	2243	830	858
V/C Ratio(X)	0.16	0.26	0.37	0.23	0.36	0.36
Avail Cap(c_a), veh/h	889	794	936	7859	2775	2871
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	16.3	16.5	18.3	3.1	6.7	6.7
Incr Delay (d2), s/veh	0.5	1.0	3.7	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	1.4	0.5	2.1	3.7	3.9
LnGrp Delay(d),s/veh	16.8	17.4	22.0	3.2	7.0	7.0
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	62			535	611	
Approach Delay, s/veh	17.1			4.0	7.0	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		29.3		9.4	6.3	22.9		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		85.0		19.0	20.0	60.0		
Max Q Clear Time (g_c+I1), s		4.4		2.8	2.5	6.2		
Green Ext Time (p_c), s		12.1		0.1	0.0	11.8		

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	518	30	145	558	5	65	1	151	3	4	5
Future Volume (veh/h)	6	518	30	145	558	5	65	1	151	3	4	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1862	1900	1863	1860	1900	1900	1876	1900	1900	1900	1900
Adj Flow Rate, veh/h	7	563	33	158	607	5	71	1	164	3	4	5
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	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, %	0	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	561	1922	112	580	2216	18	122	17	198	99	127	126
Arrive On Green	0.01	0.57	0.57	0.12	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3391	198	1774	3591	30	381	92	1078	265	691	683
Grp Volume(v), veh/h	7	293	303	158	299	313	236	0	0	12	0	0
Grp Sat Flow(s),veh/h/ln	1810	1769	1821	1774	1767	1854	1551	0	0	1639	0	0
Q Serve(g_s), s	0.1	7.7	7.8	3.3	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	7.7	7.8	3.3	0.0	0.0	13.1	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.02	0.30		0.69	0.25		0.42
Lane Grp Cap(c), veh/h	561	1002	1032	580	1091	1144	337	0	0	351	0	0
V/C Ratio(X)	0.01	0.29	0.29	0.27	0.27	0.27	0.70	0.00	0.00	0.03	0.00	0.00
Avail Cap(c_a), veh/h	785	1002	1032	709	1091	1144	599	0	0	619	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.54	0.54	0.54	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.1	10.1	10.1	6.7	0.0	0.0	35.2	0.0	0.0	30.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.1	0.3	0.3	2.6	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(95%),veh/ln	0.1	7.1	7.3	2.8	0.2	0.2	9.9	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	8.1	10.9	10.9	6.8	0.3	0.3	37.9	0.0	0.0	30.2	0.0	0.0
LnGrp LOS	A	B	B	A	A	A	D			C		
Approach Vol, veh/h		603			770			236			12	
Approach Delay, s/veh		10.8			1.7			37.9			30.2	
Approach LOS		B			A			D			C	

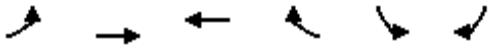
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.9	61.5		21.6	11.4	57.0		21.6
Change Period (Y+Rc), s	6.1	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	11.9	29.0		32.0	12.0	29.0		32.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		15.1	5.3	9.8		2.5
Green Ext Time (p_c), s	0.0	11.6		1.4	0.2	9.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	548	24	21	543	106	38	30	28	117	40	117
Future Volume (veh/h)	113	548	24	21	543	106	38	30	28	117	40	117
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.99		0.96	0.99		0.99	0.99		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	1881	1879	1900	1900	1863	1900	1900	1900	1900	1863	1876	1900
Adj Flow Rate, veh/h	119	577	25	22	572	112	40	32	29	123	42	123
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	2	2	0	0	0	2	5	5
Cap, veh/h	287	1175	51	264	852	166	471	285	258	576	146	428
Arrive On Green	0.02	0.11	0.11	0.02	0.29	0.29	0.03	0.31	0.31	0.07	0.35	0.35
Sat Flow, veh/h	1792	3479	151	1810	2930	571	1810	915	829	1774	419	1228
Grp Volume(v), veh/h	119	296	306	22	345	339	40	0	61	123	0	165
Grp Sat Flow(s),veh/h/ln	1792	1785	1845	1810	1770	1732	1810	0	1744	1774	0	1647
Q Serve(g_s), s	4.1	14.0	14.0	0.8	15.4	15.6	1.3	0.0	2.2	4.2	0.0	6.5
Cycle Q Clear(g_c), s	4.1	14.0	14.0	0.8	15.4	15.6	1.3	0.0	2.2	4.2	0.0	6.5
Prop In Lane	1.00		0.08	1.00		0.33	1.00		0.48	1.00		0.75
Lane Grp Cap(c), veh/h	287	603	623	264	515	504	471	0	543	576	0	574
V/C Ratio(X)	0.41	0.49	0.49	0.08	0.67	0.67	0.08	0.00	0.11	0.21	0.00	0.29
Avail Cap(c_a), veh/h	409	603	623	471	515	504	561	0	543	597	0	574
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.5	32.7	32.7	22.3	28.1	28.1	20.2	0.0	22.1	18.8	0.0	21.2
Incr Delay (d2), s/veh	0.9	2.7	2.6	0.1	6.0	6.3	0.1	0.0	0.4	0.2	0.0	0.3
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(95%),veh/ln	3.8	11.7	12.1	0.7	12.9	12.8	1.2	0.0	2.1	3.7	0.0	5.4
LnGrp Delay(d),s/veh	23.4	35.4	35.3	22.4	34.1	34.4	20.2	0.0	22.5	19.0	0.0	21.5
LnGrp LOS	C	D	D	C	C	C	C		C	B		C
Approach Vol, veh/h		721			706			101			288	
Approach Delay, s/veh		33.4			33.9			21.6			20.4	
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	11.9	32.2	11.9	34.0	7.7	36.4	8.5	37.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	19.0	7.0	28.0	12.0	19.0	7.0	28.0
Max Q Clear Time (g_c+I1), s	6.1	17.6	6.2	4.2	2.8	16.0	3.3	8.5
Green Ext Time (p_c), s	0.1	1.1	0.0	1.4	0.0	2.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	447	394	91	99	242
Future Volume (veh/h)	179	447	394	91	99	242
Number	5	2	6	16	7	14
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	1881	1881	1863	1900	1863	1881
Adj Flow Rate, veh/h	188	471	415	96	104	255
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	2	2	2	1
Cap, veh/h	519	2065	1235	283	513	586
Arrive On Green	0.03	0.19	0.43	0.43	0.29	0.29
Sat Flow, veh/h	1792	3668	2941	652	1774	1599
Grp Volume(v), veh/h	188	471	256	255	104	255
Grp Sat Flow(s),veh/h/ln	1792	1787	1770	1731	1774	1599
Q Serve(g_s), s	4.8	10.0	8.6	8.8	4.0	10.8
Cycle Q Clear(g_c), s	4.8	10.0	8.6	8.8	4.0	10.8
Prop In Lane	1.00			0.38	1.00	1.00
Lane Grp Cap(c), veh/h	519	2065	767	750	513	586
V/C Ratio(X)	0.36	0.23	0.33	0.34	0.20	0.44
Avail Cap(c_a), veh/h	679	2065	767	750	513	586
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.94	0.94	1.00	1.00
Uniform Delay (d), s/veh	12.4	19.4	16.9	16.9	24.2	21.5
Incr Delay (d2), s/veh	0.3	0.2	0.3	0.4	0.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	8.5	7.6	7.5	3.7	16.1
LnGrp Delay(d),s/veh	12.7	19.7	17.2	17.3	25.1	23.8
LnGrp LOS	B	B	B	B	C	C
Approach Vol, veh/h		659	511		359	
Approach Delay, s/veh		17.7	17.3		24.2	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		58.0		32.0	13.0	45.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		52.0		26.0	15.0	31.0		
Max Q Clear Time (g_c+I1), s		12.0		12.8	6.8	10.8		
Green Ext Time (p_c), s		10.8		1.5	0.2	8.4		

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	158	365	66	174	275	69
Future Volume (veh/h)	158	365	66	174	275	69
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1881	1845	1863	1885	1900
Adj Flow Rate, veh/h	166	384	69	183	181	189
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	1127	1208	636	1323	305	275
Arrive On Green	0.60	0.60	0.05	0.71	0.17	0.17
Sat Flow, veh/h	1881	1564	1757	1863	1795	1615
Grp Volume(v), veh/h	166	384	69	183	181	189
Grp Sat Flow(s),veh/h/ln	1881	1564	1757	1863	1795	1615
Q Serve(g_s), s	3.9	7.5	1.3	3.2	9.3	11.0
Cycle Q Clear(g_c), s	3.9	7.5	1.3	3.2	9.3	11.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1127	1208	636	1323	305	275
V/C Ratio(X)	0.15	0.32	0.11	0.14	0.59	0.69
Avail Cap(c_a), veh/h	1127	1208	879	1323	521	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.8	3.5	5.9	4.7	38.3	39.0
Incr Delay (d2), s/veh	0.1	0.2	0.1	0.2	2.6	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	9.5	1.2	3.1	8.5	15.0
LnGrp Delay(d),s/veh	8.9	3.7	5.9	4.9	40.9	43.3
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	550			252	370	
Approach Delay, s/veh	5.3			5.2	42.2	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		77.0		23.0	11.1	65.9		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		59.0		29.0	19.0	34.0		
Max Q Clear Time (g_c+I1), s		5.2		13.0	3.3	9.5		
Green Ext Time (p_c), s		6.4		1.6	0.1	5.6		

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Summary of All Intervals

Run Number	1	2	3	4	5	Future	Avg
Start Time	7:15	7:15	7:15	7:15	7:15	7:15	7:15
End Time	8:30	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5761	5799	5781	5685	5710	5769	5749
Vehs Exited	5698	5756	5756	5656	5713	5692	5712
Starting Vehs	202	238	240	253	242	240	232
Ending Vehs	265	281	265	282	239	317	271
Travel Distance (mi)	4360	4381	4485	4328	4289	4276	4353
Travel Time (hr)	247.5	244.1	256.1	244.0	243.8	245.6	246.9
Total Delay (hr)	101.4	97.4	106.0	99.6	99.9	102.6	101.2
Total Stops	8150	8168	8288	8077	8045	8130	8143
Fuel Used (gal)	173.9	173.1	179.7	173.1	170.7	171.5	173.7

Interval #0 Information Seeding

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Future	Avg
Vehs Entered	5761	5799	5781	5685	5710	5769	5749
Vehs Exited	5698	5756	5756	5656	5713	5692	5712
Starting Vehs	202	238	240	253	242	240	232
Ending Vehs	265	281	265	282	239	317	271
Travel Distance (mi)	4360	4381	4485	4328	4289	4276	4353
Travel Time (hr)	247.5	244.1	256.1	244.0	243.8	245.6	246.9
Total Delay (hr)	101.4	97.4	106.0	99.6	99.9	102.6	101.2
Total Stops	8150	8168	8288	8077	8045	8130	8143
Fuel Used (gal)	173.9	173.1	179.7	173.1	170.7	171.5	173.7

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	12.9	13.0	21.2	18.9	65.9

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	6.4	5.9	0.4	1.7	14.4

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	2.1	0.0	2.4	3.4	7.9

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Travel Time (hr)	0.4	1.9	3.2	5.5

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	5.7	11.9	3.8	0.2	21.5

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	13.4	14.3	1.3	3.6	32.6

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Travel Time (hr)	12.2	10.7	3.1	26.0

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Travel Time (hr)	12.1	1.8	4.0	17.9

Total Network Performance

Travel Time (hr)	246.9

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	42.5	52.0	0.1	6
Fern Creek Ave	2	7.5	32.8	0.2	26
	13	2.5	37.9	0.3	28
Total		52.5	122.7	0.6	18

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	6.1	35.0	0.3	31
Mills Ave	1	49.0	74.4	0.2	12
	24	2.6	13.3	0.1	23
Total		57.7	122.7	0.6	18

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.4	6.5	0.0	27
Nebraska St	3	4.5	12.7	0.1	22
	22	1.3	10.0	0.1	26
Corrine Dr	4	2.7	9.3	0.1	21
	9	0.9	10.7	0.1	28
Total		9.8	49.1	0.3	25

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	4.4	14.3	0.1	21
	22	1.1	7.9	0.1	25
Nebraska St	3	6.4	15.1	0.1	17
	19	1.3	10.5	0.1	26
	13	0.2	6.0	0.0	29
Total		13.5	53.8	0.3	22

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	14.6	22.7	0.1	9
	9	0.8	12.8	0.1	23
Bumby Ave	5	14.7	27.9	0.1	17
Winter Park Rd	6	17.8	52.6	0.3	24
General Rees Ave	7	8.3	44.8	0.4	31
Bennett Rd	8	20.9	68.7	0.4	19
Total		77.1	229.5	1.4	21

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	12.9	20.1	0.1	9
General Rees Ave	7	26.8	59.8	0.4	22
Winter Park Rd	6	18.8	56.6	0.4	25
Bumby Ave	5	9.6	44.3	0.3	28
	9	1.6	17.1	0.1	27
Corrine Dr	4	3.4	16.2	0.1	19
Total		73.0	214.0	1.4	23

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	B24	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	R	L	T	TR	L	L
Maximum Queue (ft)	150	401	389	25	235	515	156	185	502	488	113	300
Average Queue (ft)	116	243	245	1	113	284	75	160	403	348	25	143
95th Queue (ft)	184	383	367	14	248	460	134	216	559	502	81	320
Link Distance (ft)		366	366	931		1182	1182		481	481		
Upstream Blk Time (%)		1	1						7	2		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (ft)	100				185			135			200	200
Storage Blk Time (%)	21	37			0	28		36	37			0
Queuing Penalty (veh)	48	63			0	31		159	56			0

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	533	507
Average Queue (ft)	367	315
95th Queue (ft)	533	472
Link Distance (ft)	514	514
Upstream Blk Time (%)	2	1
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	34	
Queuing Penalty (veh)	35	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	93	187	206	34	174	145	80	199
Average Queue (ft)	27	45	63	3	64	42	26	85
95th Queue (ft)	66	125	148	18	139	107	63	156
Link Distance (ft)		1182	1182		1506	1506	381	408
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		0			1			
Queuing Penalty (veh)		0			0			

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	175	26	20	181	191	10	182	216
Average Queue (ft)	94	2	1	53	63	1	69	93
95th Queue (ft)	153	13	8	127	138	8	139	173
Link Distance (ft)	402	230		349	349		326	326
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 4: Forest Ave & Corrine Dr

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	48	60	66	100	145	141	181
Average Queue (ft)	20	24	22	34	44	45	69
95th Queue (ft)	47	49	53	85	106	102	144
Link Distance (ft)	264	264		233	233	385	385
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	69	245	268	146	171	196	320	45
Average Queue (ft)	10	118	115	69	61	82	156	13
95th Queue (ft)	44	210	214	126	133	159	259	39
Link Distance (ft)		627	627		1769	1769	485	553
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		4		0	1			
Queuing Penalty (veh)		1		1	1			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	189	233	215	150	307	321	76	106	148	203
Average Queue (ft)	76	119	125	19	119	138	28	44	66	97
95th Queue (ft)	146	203	204	73	227	253	63	89	119	167
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	0	3			5			0		
Queuing Penalty (veh)	1	4			1			0		

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	160	140	152	226	246	126	159
Average Queue (ft)	74	47	60	131	147	51	63
95th Queue (ft)	131	103	118	206	226	101	124
Link Distance (ft)		1974	1974	1828	1828		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	186	234	96	155	128	131
Average Queue (ft)	97	83	43	75	66	45
95th Queue (ft)	170	183	80	132	114	97
Link Distance (ft)	1828	1828		244	1030	1030
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			125			
Storage Blk Time (%)			0	1		
Queuing Penalty (veh)			0	1		

Network Summary

Network wide Queuing Penalty: 400

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

07/10/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	465	234	110	378	215	149	872	93	102	898	77
Future Volume (veh/h)	171	465	234	110	378	215	149	872	93	102	898	77
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.98
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	1881	1887	1900	1863	1900	1881	1863	1881	1900	1900	1880	1900
Adj Flow Rate, veh/h	188	511	257	121	415	236	164	958	102	112	987	85
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	0	1	2	1	1	0	1	1
Cap, veh/h	204	582	291	186	437	361	174	1566	167	157	1414	122
Arrive On Green	0.08	0.25	0.25	0.06	0.23	0.23	0.10	0.48	0.48	0.04	0.43	0.43
Sat Flow, veh/h	1792	2312	1158	1774	1900	1569	1774	3255	347	3510	3321	286
Grp Volume(v), veh/h	188	396	372	121	415	236	164	526	534	112	531	541
Grp Sat Flow(s),veh/h/ln	1792	1793	1677	1774	1900	1569	1774	1787	1814	1755	1786	1821
Q Serve(g_s), s	12.9	33.9	34.1	8.3	34.4	21.8	14.7	34.6	34.6	5.0	38.8	38.9
Cycle Q Clear(g_c), s	12.9	33.9	34.1	8.3	34.4	21.8	14.7	34.6	34.6	5.0	38.8	38.9
Prop In Lane	1.00		0.69	1.00		1.00	1.00		0.19	1.00		0.16
Lane Grp Cap(c), veh/h	204	451	422	186	437	361	174	860	873	157	760	775
V/C Ratio(X)	0.92	0.88	0.88	0.65	0.95	0.65	0.94	0.61	0.61	0.71	0.70	0.70
Avail Cap(c_a), veh/h	204	451	422	225	443	366	174	860	873	351	760	775
HCM Platoon Ratio	1.00	1.00	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	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	57.5	57.6	46.3	60.7	55.9	71.7	30.5	30.5	75.4	37.5	37.5
Incr Delay (d2), s/veh	41.4	17.5	19.1	4.7	29.7	4.0	51.4	3.2	3.2	5.8	5.3	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(95%),veh/ln	13.6	26.2	25.0	7.6	29.2	14.9	14.8	24.8	25.1	4.6	27.7	28.1
LnGrp Delay(d),s/veh	87.8	75.0	76.6	51.0	90.4	59.8	123.1	33.8	33.7	81.2	42.8	42.7
LnGrp LOS	F	E	E	D	F	E	F	C	C	F	D	D
Approach Vol, veh/h		956			772			1224			1184	
Approach Delay, s/veh		78.1			74.9			45.7			46.4	
Approach LOS		E			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	22.0	74.5	20.0	43.5	13.2	83.4	16.5	47.0
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	15.7	* 68	* 13	37.3	16.0	* 68	13.8	37.3
Max Q Clear Time (g_c+I1), s	16.7	40.9	14.9	36.4	7.0	36.6	10.3	36.1
Green Ext Time (p_c), s	0.0	2.4	0.0	0.3	0.2	2.3	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	58.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	612	5	5	560	46	4	31	1	61	30	55
Future Volume (veh/h)	52	612	5	5	560	46	4	31	1	61	30	55
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1863	1900	1900	1849	1900	1900	1900	1900	1900	1881	1900
Adj Flow Rate, veh/h	58	680	6	6	622	51	4	34	1	68	33	61
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	0	3	3	0	0	0	5	5	5
Cap, veh/h	601	2635	23	595	2406	197	53	235	6	132	56	79
Arrive On Green	0.73	0.73	0.73	0.73	0.73	0.73	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	777	3595	32	768	3282	269	66	1756	48	560	420	592
Grp Volume(v), veh/h	58	335	351	6	332	341	39	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	777	1770	1857	768	1756	1794	1869	0	0	1571	0	0
Q Serve(g_s), s	2.4	5.6	5.6	0.2	5.6	5.6	0.0	0.0	0.0	7.3	0.0	0.0
Cycle Q Clear(g_c), s	8.0	5.6	5.6	5.8	5.6	5.6	1.6	0.0	0.0	8.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.15	0.10		0.03	0.42		0.38
Lane Grp Cap(c), veh/h	601	1297	1361	595	1288	1315	294	0	0	267	0	0
V/C Ratio(X)	0.10	0.26	0.26	0.01	0.26	0.26	0.13	0.00	0.00	0.61	0.00	0.00
Avail Cap(c_a), veh/h	601	1297	1361	595	1288	1315	675	0	0	592	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)	0.60	0.60	0.60	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.3	4.0	4.0	4.9	4.0	4.0	34.5	0.0	0.0	37.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	0.5	0.5	0.2	0.0	0.0	2.7	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(95%),veh/ln	1.0	4.9	5.1	0.1	5.1	5.3	1.6	0.0	0.0	7.3	0.0	0.0
LnGrp Delay(d),s/veh	5.5	4.2	4.2	4.9	4.4	4.4	34.7	0.0	0.0	40.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C			D		
Approach Vol, veh/h		744			679			39			162	
Approach Delay, s/veh		4.3			4.4			34.7			40.2	
Approach LOS		A			A			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.0		18.0		72.0		18.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		47.0		31.0		47.0		31.0
Max Q Clear Time (g_c+I1), s		7.8		3.6		10.0		10.9
Green Ext Time (p_c), s		18.1		0.2		19.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	16	7	0	5	0	1	499	1	1	527	264
Future Volume (veh/h)	183	16	7	0	5	0	1	499	1	1	527	264
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)	0.99		0.98	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	1900	1883	1900	1900	1900	1900	1900	1881	1900	1900	1869	1900
Adj Flow Rate, veh/h	193	17	7	0	5	0	1	525	1	1	555	278
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	1
Cap, veh/h	346	22	9	0	371	0	472	2419	5	641	1504	752
Arrive On Green	0.20	0.20	0.20	0.00	0.20	0.00	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1270	112	46	0	1900	0	669	3660	7	890	2276	1138
Grp Volume(v), veh/h	217	0	0	0	5	0	1	256	270	1	433	400
Grp Sat Flow(s),veh/h/ln	1428	0	0	0	1900	0	669	1787	1880	890	1775	1639
Q Serve(g_s), s	9.9	0.0	0.0	0.0	0.1	0.0	0.0	4.0	4.0	0.0	7.6	7.6
Cycle Q Clear(g_c), s	10.1	0.0	0.0	0.0	0.1	0.0	7.7	4.0	4.0	4.0	7.6	7.6
Prop In Lane	0.89		0.03	0.00		0.00	1.00		0.00	1.00		0.69
Lane Grp Cap(c), veh/h	377	0	0	0	371	0	472	1181	1242	641	1173	1083
V/C Ratio(X)	0.58	0.00	0.00	0.00	0.01	0.00	0.00	0.22	0.22	0.00	0.37	0.37
Avail Cap(c_a), veh/h	800	0	0	0	928	0	472	1181	1242	641	1173	1083
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	0.0	0.0	22.6	0.0	7.0	4.7	4.7	5.5	5.3	5.3
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	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(95%),veh/ln	7.3	0.0	0.0	0.0	0.1	0.0	0.0	3.7	3.9	0.0	7.2	6.7
LnGrp Delay(d),s/veh	28.0	0.0	0.0	0.0	22.6	0.0	7.0	5.1	5.1	5.5	6.2	6.3
LnGrp LOS	C				C		A	A	A	A	A	A
Approach Vol, veh/h		217			5			527			834	
Approach Delay, s/veh		28.0			22.6			5.1			6.2	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.0		18.6		51.0		18.6
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		46.0		34.0		46.0		34.0
Max Q Clear Time (g_c+I1), s		9.7		12.1		9.6		2.1
Green Ext Time (p_c), s		3.5		1.3		6.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	47	30	654	741	39
Future Volume (veh/h)	32	47	30	654	741	39
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	1900	1900	1900	1881	1882	1900
Adj Flow Rate, veh/h	34	49	32	688	780	41
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1
Cap, veh/h	196	175	82	2139	1450	76
Arrive On Green	0.11	0.11	0.05	0.60	0.42	0.42
Sat Flow, veh/h	1810	1615	1810	3668	3551	182
Grp Volume(v), veh/h	34	49	32	688	403	418
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1787	1788	1850
Q Serve(g_s), s	0.6	1.0	0.6	3.6	6.3	6.3
Cycle Q Clear(g_c), s	0.6	1.0	0.6	3.6	6.3	6.3
Prop In Lane	1.00	1.00	1.00			0.10
Lane Grp Cap(c), veh/h	196	175	82	2139	750	776
V/C Ratio(X)	0.17	0.28	0.39	0.32	0.54	0.54
Avail Cap(c_a), veh/h	1014	905	483	5533	2052	2123
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	15.2	15.4	17.4	3.7	8.2	8.2
Incr Delay (d2), s/veh	0.4	0.9	3.0	0.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	1.8	0.7	3.2	5.7	5.9
LnGrp Delay(d),s/veh	15.6	16.2	20.4	3.8	8.9	8.9
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	83			720	821	
Approach Delay, s/veh	16.0			4.6	8.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		27.4		10.0	6.7	20.7		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		58.0		21.0	10.0	43.0		
Max Q Clear Time (g_c+I1), s		5.6		3.0	2.6	8.3		
Green Ext Time (p_c), s		6.9		0.2	0.0	7.4		

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	650	60	178	700	6	100	1	186	4	5	15
Future Volume (veh/h)	15	650	60	178	700	6	100	1	186	4	5	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1861	1900	1863	1860	1900	1900	1875	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	707	65	193	761	7	109	1	202	4	5	16
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	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, %	0	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	423	1642	151	466	1994	18	165	15	231	82	104	248
Arrive On Green	0.02	0.50	0.50	0.08	0.56	0.56	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3267	300	1774	3587	33	474	66	990	152	445	1062
Grp Volume(v), veh/h	16	382	390	193	375	393	312	0	0	25	0	0
Grp Sat Flow(s),veh/h/ln	1810	1768	1799	1774	1767	1853	1530	0	0	1659	0	0
Q Serve(g_s), s	0.4	12.4	12.4	4.5	10.8	10.8	15.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	12.4	12.4	4.5	10.8	10.8	17.6	0.0	0.0	1.0	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.02	0.35		0.65	0.16		0.64
Lane Grp Cap(c), veh/h	423	889	904	466	982	1030	411	0	0	434	0	0
V/C Ratio(X)	0.04	0.43	0.43	0.41	0.38	0.38	0.76	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	492	889	904	590	982	1030	562	0	0	589	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	1.00	0.64	0.64	0.64	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	14.2	14.2	10.0	11.3	11.3	33.1	0.0	0.0	26.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.5	0.4	0.7	0.7	4.0	0.0	0.0	0.1	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(95%),veh/ln	0.3	10.4	10.6	3.9	8.5	8.8	12.5	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	10.7	15.7	15.7	10.3	12.0	12.0	37.1	0.0	0.0	26.9	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	D			C		
Approach Vol, veh/h		788			961			312			25	
Approach Delay, s/veh		15.6			11.6			37.1			26.9	
Approach LOS		B			B			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	7.9	56.0		26.0	12.8	51.2		26.0
Change Period (Y+Rc), s	6.3	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	5.1	37.6		30.0	13.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	2.4	12.8		19.6	6.5	14.4		3.0
Green Ext Time (p_c), s	0.0	7.0		1.4	0.3	5.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	674	40	26	668	130	47	37	34	144	49	144
Future Volume (veh/h)	139	674	40	26	668	130	47	37	34	144	49	144
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.96	0.99		0.99	0.99		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	1881	1878	1900	1900	1863	1900	1900	1900	1900	1863	1876	1900
Adj Flow Rate, veh/h	146	709	42	27	703	137	49	39	36	152	52	152
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	2	2	0	0	0	2	5	5
Cap, veh/h	331	1481	88	309	1133	221	302	181	167	432	103	302
Arrive On Green	0.05	0.29	0.29	0.02	0.39	0.39	0.03	0.20	0.20	0.08	0.25	0.25
Sat Flow, veh/h	1792	3416	202	1810	2934	571	1810	904	834	1774	419	1224
Grp Volume(v), veh/h	146	370	381	27	424	416	49	0	75	152	0	204
Grp Sat Flow(s),veh/h/ln	1792	1784	1834	1810	1770	1736	1810	0	1738	1774	0	1642
Q Serve(g_s), s	4.3	15.4	15.4	0.8	17.4	17.4	1.9	0.0	3.2	6.1	0.0	9.6
Cycle Q Clear(g_c), s	4.3	15.4	15.4	0.8	17.4	17.4	1.9	0.0	3.2	6.1	0.0	9.6
Prop In Lane	1.00		0.11	1.00		0.33	1.00		0.48	1.00		0.75
Lane Grp Cap(c), veh/h	331	774	795	309	683	670	302	0	348	432	0	405
V/C Ratio(X)	0.44	0.48	0.48	0.09	0.62	0.62	0.16	0.00	0.22	0.35	0.00	0.50
Avail Cap(c_a), veh/h	406	774	795	350	683	670	326	0	348	432	0	405
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)	0.86	0.86	0.86	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	23.5	23.5	16.7	22.3	22.3	27.5	0.0	30.1	25.6	0.0	29.2
Incr Delay (d2), s/veh	0.8	1.8	1.8	0.1	3.6	3.7	0.2	0.0	1.4	0.5	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(95%),veh/ln	3.9	12.3	12.6	0.7	13.8	13.6	1.8	0.0	3.1	5.3	0.0	7.9
LnGrp Delay(d),s/veh	17.8	25.3	25.3	16.8	25.9	26.0	27.7	0.0	31.5	26.1	0.0	30.2
LnGrp LOS	B	C	C	B	C	C	C		C	C		C
Approach Vol, veh/h		897			867			124			356	
Approach Delay, s/veh		24.1			25.7			30.0			28.4	
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	12.2	40.8	13.0	24.0	8.0	45.0	8.8	28.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	31.0	7.0	18.0	4.0	37.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	6.3	19.4	8.1	5.2	2.8	17.4	3.9	11.6
Green Ext Time (p_c), s	0.1	5.3	0.0	0.2	0.0	6.2	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	550	485	112	122	298
Future Volume (veh/h)	220	550	485	112	122	298
Number	5	2	6	16	7	14
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	1881	1881	1863	1900	1863	1881
Adj Flow Rate, veh/h	232	579	511	118	128	314
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	2	2	2	1
Cap, veh/h	600	2224	1319	303	434	538
Arrive On Green	0.18	1.00	0.93	0.93	0.24	0.24
Sat Flow, veh/h	1792	3668	2940	654	1774	1599
Grp Volume(v), veh/h	232	579	317	312	128	314
Grp Sat Flow(s),veh/h/ln	1792	1787	1770	1730	1774	1599
Q Serve(g_s), s	6.0	0.0	1.8	1.9	5.3	14.6
Cycle Q Clear(g_c), s	6.0	0.0	1.8	1.9	5.3	14.6
Prop In Lane	1.00			0.38	1.00	1.00
Lane Grp Cap(c), veh/h	600	2224	820	802	434	538
V/C Ratio(X)	0.39	0.26	0.39	0.39	0.30	0.58
Avail Cap(c_a), veh/h	813	2224	820	802	434	538
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	8.4	0.0	1.8	1.8	27.7	24.6
Incr Delay (d2), s/veh	0.3	0.3	0.4	0.4	1.7	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.1	1.4	1.4	5.0	19.7
LnGrp Delay(d),s/veh	8.7	0.3	2.2	2.2	29.4	29.2
LnGrp LOS	A	A	A	A	C	C
Approach Vol, veh/h		811	629		442	
Approach Delay, s/veh		2.7	2.2		29.3	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.0		28.0	14.3	47.7		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		56.0		22.0	19.0	31.0		
Max Q Clear Time (g_c+I1), s		2.0		16.6	8.0	3.9		
Green Ext Time (p_c), s		6.4		1.1	0.4	5.8		

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	194	449	81	214	338	85
Future Volume (veh/h)	194	449	81	214	338	85
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1881	1845	1863	1885	1900
Adj Flow Rate, veh/h	204	473	85	225	222	232
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	1039	1166	529	1263	339	305
Arrive On Green	0.18	0.18	0.06	0.68	0.19	0.19
Sat Flow, veh/h	1881	1564	1757	1863	1795	1615
Grp Volume(v), veh/h	204	473	85	225	222	232
Grp Sat Flow(s),veh/h/ln	1881	1564	1757	1863	1795	1615
Q Serve(g_s), s	8.3	14.3	1.7	4.0	10.3	12.2
Cycle Q Clear(g_c), s	8.3	14.3	1.7	4.0	10.3	12.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1039	1166	529	1263	339	305
V/C Ratio(X)	0.20	0.41	0.16	0.18	0.65	0.76
Avail Cap(c_a), veh/h	1039	1166	621	1263	698	628
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	8.9	7.0	5.3	33.8	34.6
Incr Delay (d2), s/veh	0.1	0.3	0.1	0.3	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	16.1	1.5	3.8	9.2	16.3
LnGrp Delay(d),s/veh	20.0	9.2	7.2	5.6	36.8	40.1
LnGrp LOS	B	A	A	A	D	D
Approach Vol, veh/h	677			310	454	
Approach Delay, s/veh	12.4			6.0	38.5	
Approach LOS	B			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		67.0		23.0	11.3	55.7		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		43.0		35.0	10.0	27.0		
Max Q Clear Time (g_c+I1), s		6.0		14.2	3.7	16.3		
Green Ext Time (p_c), s		2.1		2.3	0.1	3.4		

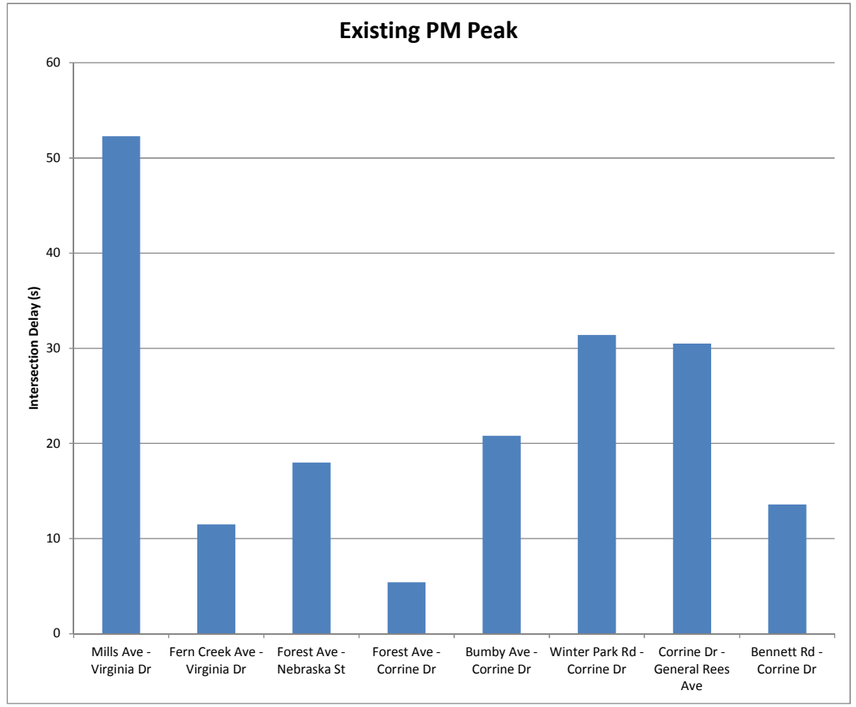
Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

PM Peak (5:00-6:00pm)

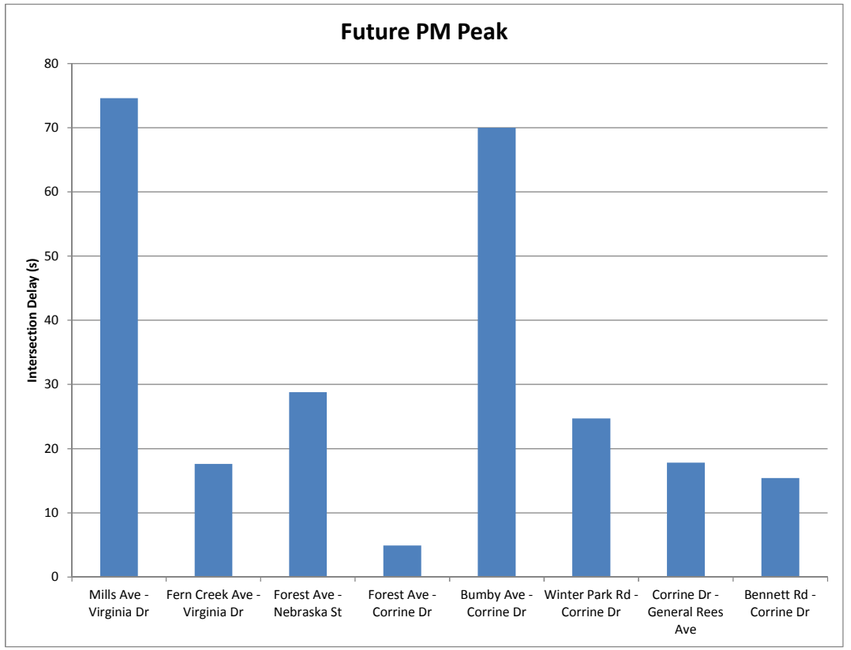
Existing (2017)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	E	D	D	D	
	Delay	74.3	75.6	39.6	43.7	52.3	
	Queue	19.9	22.6	26.6	30.5	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	C	C	B	
	Delay	7.9	7.4	28.0	22.5	11.5	
	Queue	7.5	4.7	9.3	2.8	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	B	B	B	B	
	Delay	42.2	19.0	11.3	11.1	18.0	
	Queue	18.0	0.3	9.9	9.0	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	-	A	A	A	
	Delay	20.8	-	3.1	9.1	5.4	
	Queue	0.3	-	6.0	5.7	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	A	D	C	C	
	Delay	26.1	4.6	43.3	28.3	20.8	
	Queue	24.7	4.9	15.7	0.5	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	C	C	C	C	
	Delay	35.2	23.1	31.1	34.2	31.4	
	Queue	36.6	23.2	32.2	35.1	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	D	-	C	C	
	Delay	29.2	38.1	-	22.2	30.5	
	Queue	18.9	14.8	-	18.3	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	A	D	-	B	
	Delay	1.7	7.2	44.9	-	13.6	
	Queue	9.5	6.3	20.8	-	-	



	Travel Time		
	Existing	Existing - Optimized Offsets	Future (20
EB			
Mills	62.4	72.5	75.1
Fern Creek	34.6	34	34.9
Nebraska	62.2	61.6	66.4
Leu Gardens	18.5	18.1	19.1
Bumby	50.6	43.7	62.5
Winter Park	67.5	52.2	49.8
General Rees	69.1	49.8	50.5
Bennett	86.6	80.8	65
Total	**451.5**	**412.7**	**423.3**
	7.5	**6.9**	**7.1**
WB			
Bennett	25.6	29.1	24.1
General Rees	83.9	71	56.3
Winter Park	88.9	62.8	52.2
Bumby	48	41.7	45.9
Leu Gardens	30.8	29.3	28.5
Nebraska	25.3	25.4	33.5
Fern Creek	52.2	52.9	53.9
Mills	97.7	99.4	111
Total	**452.4**	**411.6**	**405.4**
	7.5	**6.9**	**6.8**

PM Peak (5:00-6:00pm)

Future Year (2040)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	F	F	E	E	E	
	Delay	87.9	87.0	66.6	70.3	74.6	
	Queue	27.4	31.7	47.0	56.3	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	D	C	B	
	Delay	12.2	11.7	43.4	29.0	17.6	
	Queue	13.6	8.8	16.9	5.0	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	B	C	C	C	
	Delay	29.5	13.1	29.2	28.2	28.8	
	Queue	22.8	0.3	20.3	18.5	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	-	A	A	A	
	Delay	28.8	-	3.2	7.4	4.9	
	Queue	0.8	-	9.9	8.4	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	D	E	C	E	
	Delay	78.0	54.6	78.7	25.5	70.0	
	Queue	68.5	22.8	34.9	0.5	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	C	D	E	C	
	Delay	5.8	32.1	38.7	76.5	24.7	
	Queue	6.8	19.3	6.1	24.5	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	D	-	C	B	
	Delay	5.3	37.2	-	31.1	17.8	
	Queue	13.2	17.5	-	22.6	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	A	B	D	-	B	
	Delay	5.9	10.3	40.4	-	15.4	
	Queue	33.8	8.9	24.1	-	-	



Summary of All Intervals

Start Time	4:45
End Time	6:00
Total Time (min)	75
Time Recorded (min)	60
# of Intervals	2
# of Recorded Intervals	1
Vehs Entered	6652
Vehs Exited	6698
Starting Vehs	375
Ending Vehs	329
Travel Distance (mi)	5609
Travel Time (hr)	343.9
Total Delay (hr)	156.4
Total Stops	11629
Fuel Used (gal)	229.8

Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Vehs Entered	6652
Vehs Exited	6698
Starting Vehs	375
Ending Vehs	329
Travel Distance (mi)	5609
Travel Time (hr)	343.9
Total Delay (hr)	156.4
Total Stops	11629
Fuel Used (gal)	229.8

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	10.7	12.8	19.3	27.0	69.9

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	10.2	5.9	2.4	0.8	19.3

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	5.3	0.0	4.6	3.8	13.7

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Travel Time (hr)	0.1	2.7	2.5	5.3

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	15.3	13.9	4.3	0.1	33.6

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	30.0	19.5	1.6	4.9	56.0

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Travel Time (hr)	29.6	14.2	3.1	47.0

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Travel Time (hr)	24.4	3.8	5.9	34.1

Total Network Performance

Travel Time (hr)	343.9

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	52.9	62.4	0.1	5
Fern Creek Ave	2	11.0	34.6	0.2	25
	13	3.5	39.0	0.3	27
Total		67.4	136.0	0.6	16

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	8.0	35.6	0.3	30
Mills Ave	1	69.3	97.7	0.2	9
	24	2.8	13.4	0.1	23
Total		80.1	146.7	0.6	15

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.5	6.6	0.0	27
Nebraska St	3	8.0	16.6	0.1	17
	22	1.8	10.6	0.1	25
Corrine Dr	4	1.3	7.9	0.1	25
	9	0.9	10.6	0.1	28
Total		12.6	52.3	0.3	23

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	1.6	11.5	0.1	26
	22	0.7	7.5	0.1	26
Nebraska St	3	9.0	17.8	0.1	15
	19	1.3	10.6	0.1	26
	13	0.2	6.0	0.0	29
Total		12.8	53.5	0.3	23

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	8.6	15.3	0.1	14
	9	0.7	8.5	0.1	35
Bumby Ave	5	27.0	40.0	0.1	12
Winter Park Rd	6	32.5	67.5	0.3	19
General Rees Ave	7	30.5	69.1	0.4	20
Bennett Rd	8	39.6	86.6	0.4	15
Total		139.0	287.1	1.4	17

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	18.0	25.6	0.1	7
General Rees Ave	7	47.3	83.9	0.4	15
Winter Park Rd	6	49.4	88.9	0.4	16
Bumby Ave	5	12.8	48.0	0.3	26
	9	1.5	17.0	0.1	27
Corrine Dr	4	0.2	13.8	0.1	22
Total		129.2	277.2	1.4	18

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	L	T
Maximum Queue (ft)	149	410	374	235	503	157	185	496	496	249	300	529
Average Queue (ft)	78	226	230	105	303	77	139	386	336	170	254	407
95th Queue (ft)	154	344	336	255	456	133	204	538	507	245	346	595
Link Distance (ft)		366	366		1182	1182		481	481			514
Upstream Blk Time (%)		1	0					4	1			11
Queuing Penalty (veh)		0	0					0	0			0
Storage Bay Dist (ft)	100			185			135			200	200	
Storage Blk Time (%)	5	40			35		19	40		4	14	29
Queuing Penalty (veh)	11	37			31		85	40		25	83	85

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB
Directions Served	TR
Maximum Queue (ft)	529
Average Queue (ft)	359
95th Queue (ft)	554
Link Distance (ft)	514
Upstream Blk Time (%)	4
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	275	288	92	183	133	194	75
Average Queue (ft)	113	130	35	63	45	111	40
95th Queue (ft)	238	255	77	133	102	176	71
Link Distance (ft)	1182	1182		1506	1506	381	408
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)	4			0			
Queuing Penalty (veh)	0			0			

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	417	52	31	290	311	28	164	182
Average Queue (ft)	220	6	5	99	107	1	79	97
95th Queue (ft)	351	28	24	206	209	9	148	160
Link Distance (ft)	402	230		349	349		326	326
Upstream Blk Time (%)	1							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				2			1	
Queuing Penalty (veh)				0			0	

Intersection: 4: Forest Ave & Corrine Dr

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	30	29	50	148	163	94	160
Average Queue (ft)	5	6	4	26	25	14	25
95th Queue (ft)	24	25	23	95	95	60	97
Link Distance (ft)	264	264		233	233	385	385
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	30	423	422	178	172	181	269	31
Average Queue (ft)	2	276	276	97	83	87	170	5
95th Queue (ft)	14	424	423	156	166	152	252	24
Link Distance (ft)		627	627		1769	1769	485	553
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150				
Storage Blk Time (%)		28		1	1			
Queuing Penalty (veh)		2		5	1			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	200	467	472	72	320	374	72	141	238	183
Average Queue (ft)	169	310	288	17	231	234	29	59	91	108
95th Queue (ft)	243	465	444	54	322	332	58	110	164	177
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	8	21			33			1		
Queuing Penalty (veh)	52	48			5			0		

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	275	466	436	289	286	137	116
Average Queue (ft)	239	260	256	156	174	66	57
95th Queue (ft)	325	387	356	243	264	127	99
Link Distance (ft)		1974	1974	1816	1816		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)	12	4					
Queuing Penalty (veh)	61	15					

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	407	381	174	259	194	196
Average Queue (ft)	212	73	110	130	99	78
95th Queue (ft)	368	200	185	244	164	151
Link Distance (ft)	1816	1816		244	1031	1031
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			125			
Storage Blk Time (%)			2	9		
Queuing Penalty (veh)			6	13		

Network Summary

Network wide Queuing Penalty: 606

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	445	100	87	304	205	101	910	153	299	1176	57
Future Volume (veh/h)	93	445	100	87	304	205	101	910	153	299	1176	57
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.99	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	1881	1900	1900	1863	1881	1881	1900	1884	1900	1845	1882	1900
Adj Flow Rate, veh/h	94	449	101	88	307	207	102	919	155	302	1188	58
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	0	0	2	1	1	0	1	1	3	1	1
Cap, veh/h	165	579	129	173	362	305	121	1558	263	346	1882	92
Arrive On Green	0.05	0.20	0.20	0.05	0.19	0.19	0.07	0.51	0.51	0.10	0.54	0.54
Sat Flow, veh/h	1792	2921	652	1774	1881	1587	1810	3058	516	3408	3470	169
Grp Volume(v), veh/h	94	276	274	88	307	207	102	538	536	302	612	634
Grp Sat Flow(s),veh/h/ln	1792	1805	1768	1774	1881	1587	1810	1790	1784	1704	1788	1852
Q Serve(g_s), s	7.5	26.1	26.5	7.1	28.4	21.8	10.0	37.9	37.9	15.7	42.8	42.9
Cycle Q Clear(g_c), s	7.5	26.1	26.5	7.1	28.4	21.8	10.0	37.9	37.9	15.7	42.8	42.9
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.29	1.00		0.09
Lane Grp Cap(c), veh/h	165	358	350	173	362	305	121	912	909	346	970	1004
V/C Ratio(X)	0.57	0.77	0.78	0.51	0.85	0.68	0.84	0.59	0.59	0.87	0.63	0.63
Avail Cap(c_a), veh/h	183	404	396	200	421	355	188	912	909	454	970	1004
HCM Platoon Ratio	1.00	1.00	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	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	68.3	68.5	56.3	70.1	67.5	83.0	30.9	30.9	79.7	28.6	28.7
Incr Delay (d2), s/veh	3.4	8.0	8.8	2.3	13.1	4.1	17.8	2.8	2.8	13.6	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(95%),veh/ln	7.0	19.9	19.9	6.5	22.6	15.0	9.5	26.6	26.5	12.7	29.6	30.5
LnGrp Delay(d),s/veh	60.0	76.3	77.3	58.6	83.3	71.6	100.8	33.7	33.8	93.4	31.8	31.7
LnGrp LOS	E	E	E	E	F	E	F	C	C	F	C	C
Approach Vol, veh/h		644			602			1176			1548	
Approach Delay, s/veh		74.3			75.6			39.6			43.7	
Approach LOS		E			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	18.4	104.0	16.3	41.3	24.3	98.1	15.2	42.4
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	18.7	* 84	* 11	40.3	24.0	* 79	11.8	40.3
Max Q Clear Time (g_c+I1), s	12.0	44.9	9.5	30.4	17.7	39.9	9.1	28.5
Green Ext Time (p_c), s	0.1	6.4	0.0	4.3	0.6	6.4	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	52.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	837	75	60	517	5	72	57	150	11	78	4
Future Volume (veh/h)	3	837	75	60	517	5	72	57	150	11	78	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1900	1883	1900	1900	1881	1900	1900	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	3	854	77	61	528	5	73	58	153	11	80	4
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	1	0	0	0	0	0	0
Cap, veh/h	572	1985	179	384	2174	21	136	96	196	77	387	18
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	884	3311	299	610	3627	34	312	420	855	84	1690	78
Grp Volume(v), veh/h	3	461	470	61	260	273	284	0	0	95	0	0
Grp Sat Flow(s),veh/h/ln	884	1789	1821	610	1787	1874	1587	0	0	1852	0	0
Q Serve(g_s), s	0.1	9.7	9.7	4.2	4.8	4.8	8.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.9	9.7	9.7	13.9	4.8	4.8	11.6	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.02	0.26		0.54	0.12		0.04
Lane Grp Cap(c), veh/h	572	1072	1092	384	1071	1123	428	0	0	482	0	0
V/C Ratio(X)	0.01	0.43	0.43	0.16	0.24	0.24	0.66	0.00	0.00	0.20	0.00	0.00
Avail Cap(c_a), veh/h	572	1072	1092	384	1071	1123	671	0	0	758	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)	0.52	0.52	0.52	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	7.6	7.6	11.3	6.6	6.6	25.2	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.6	0.9	0.5	0.5	2.1	0.0	0.0	0.2	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(95%),veh/ln	0.1	7.6	7.7	1.4	4.4	4.7	9.2	0.0	0.0	2.7	0.0	0.0
LnGrp Delay(d),s/veh	7.7	8.2	8.2	12.2	7.1	7.1	27.3	0.0	0.0	22.1	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C			C		
Approach Vol, veh/h		934			594			284			95	
Approach Delay, s/veh		8.2			7.6			27.3			22.1	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		48.0		22.0		48.0		22.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		31.0		27.0		31.0		27.0
Max Q Clear Time (g_c+I1), s		15.9		13.6		11.7		4.9
Green Ext Time (p_c), s		14.2		2.4		18.0		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	19	7	0	8	0	8	808	4	2	451	271
Future Volume (veh/h)	409	19	7	0	8	0	8	808	4	2	451	271
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		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	1900	1896	1900	1900	1900	1900	1520	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	435	20	7	0	9	0	9	860	4	2	480	288
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	0	0	0	25	1	1	0	1	1
Cap, veh/h	507	19	7	0	594	0	337	2052	10	368	1201	717
Arrive On Green	0.31	0.31	0.31	0.00	0.31	0.00	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1342	62	22	0	1900	0	569	3648	17	650	2135	1274
Grp Volume(v), veh/h	462	0	0	0	9	0	9	421	443	2	401	367
Grp Sat Flow(s),veh/h/ln	1426	0	0	0	1900	0	569	1787	1878	650	1787	1622
Q Serve(g_s), s	24.7	0.0	0.0	0.0	0.3	0.0	0.7	10.8	10.8	0.1	10.1	10.2
Cycle Q Clear(g_c), s	25.0	0.0	0.0	0.0	0.3	0.0	10.9	10.8	10.8	10.9	10.1	10.2
Prop In Lane	0.94		0.02	0.00		0.00	1.00		0.01	1.00		0.79
Lane Grp Cap(c), veh/h	533	0	0	0	594	0	337	1005	1057	368	1005	912
V/C Ratio(X)	0.87	0.00	0.00	0.00	0.02	0.00	0.03	0.42	0.42	0.01	0.40	0.40
Avail Cap(c_a), veh/h	533	0	0	0	594	0	337	1005	1057	368	1005	912
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	0.0	0.0	19.0	0.0	13.0	10.0	10.0	13.1	9.9	9.9
Incr Delay (d2), s/veh	14.1	0.0	0.0	0.0	0.0	0.0	0.1	1.3	1.2	0.0	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(95%),veh/ln	18.0	0.0	0.0	0.0	0.3	0.0	0.2	9.5	9.9	0.0	9.0	8.4
LnGrp Delay(d),s/veh	42.2	0.0	0.0	0.0	19.0	0.0	13.1	11.3	11.2	13.2	11.1	11.2
LnGrp LOS	D				B		B	B	B	B	B	B
Approach Vol, veh/h		462			9			873			770	
Approach Delay, s/veh		42.2			19.0			11.3			11.1	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0		30.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		45.0		25.0		45.0		25.0
Max Q Clear Time (g_c+I1), s		12.9		27.0		12.9		2.3
Green Ext Time (p_c), s		14.0		0.0		14.0		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	4	4	1216	714	3
Future Volume (veh/h)	10	4	4	1216	714	3
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	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	11	4	4	1294	760	3
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1
Cap, veh/h	47	42	175	2849	2264	9
Arrive On Green	0.03	0.03	0.10	0.80	0.62	0.62
Sat Flow, veh/h	1810	1615	1810	3668	3746	14
Grp Volume(v), veh/h	11	4	4	1294	372	391
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1787	1787	1879
Q Serve(g_s), s	0.4	0.2	0.1	7.1	6.2	6.2
Cycle Q Clear(g_c), s	0.4	0.2	0.1	7.1	6.2	6.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	47	42	175	2849	1108	1165
V/C Ratio(X)	0.24	0.10	0.02	0.45	0.34	0.34
Avail Cap(c_a), veh/h	554	494	583	4893	1727	1816
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	29.6	29.5	25.4	2.0	5.7	5.7
Incr Delay (d2), s/veh	2.6	1.0	0.0	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.3	0.1	6.2	5.5	5.8
LnGrp Delay(d),s/veh	32.2	30.5	25.4	2.1	5.9	5.9
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	15			1298	763	
Approach Delay, s/veh	31.8			2.2	5.9	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		54.5		7.6	11.0	43.5		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		85.0		19.0	20.0	60.0		
Max Q Clear Time (g_c+I1), s		9.1		2.4	2.1	8.2		
Green Ext Time (p_c), s		36.5		0.0	0.0	30.3		

Intersection Summary	
HCM 2010 Ctrl Delay	3.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	1286	38	177	711	10	48	4	280	5	4	3
Future Volume (veh/h)	9	1286	38	177	711	10	48	4	280	5	4	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1882	1900	1881	1881	1900	1900	1879	1900	1900	1754	1900
Adj Flow Rate, veh/h	10	1383	41	190	765	11	52	4	301	5	4	3
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	0	25	25	25
Cap, veh/h	451	1793	53	273	2030	29	84	20	337	133	101	61
Arrive On Green	0.01	0.51	0.51	0.14	1.00	1.00	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1810	3546	105	1792	3606	52	169	79	1337	325	400	242
Grp Volume(v), veh/h	10	697	727	190	379	397	357	0	0	12	0	0
Grp Sat Flow(s),veh/h/ln	1810	1788	1863	1792	1787	1871	1585	0	0	967	0	0
Q Serve(g_s), s	0.3	31.6	31.7	5.0	0.0	0.0	15.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	31.6	31.7	5.0	0.0	0.0	21.7	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.03	0.15		0.84	0.42		0.25
Lane Grp Cap(c), veh/h	451	904	942	273	1006	1053	441	0	0	295	0	0
V/C Ratio(X)	0.02	0.77	0.77	0.70	0.38	0.38	0.81	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	659	904	942	376	1006	1053	547	0	0	383	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	20.0	20.0	17.5	0.0	0.0	36.0	0.0	0.0	28.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.3	6.1	2.7	0.9	0.8	7.3	0.0	0.0	0.1	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(95%),veh/ln	0.2	23.8	24.7	4.9	0.4	0.4	15.7	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	11.7	26.3	26.2	20.2	0.9	0.8	43.3	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	B	C	C	C	A	A	D			C		
Approach Vol, veh/h		1434			966			357			12	
Approach Delay, s/veh		26.1			4.7			43.3			28.2	
Approach LOS		C			A			D			C	

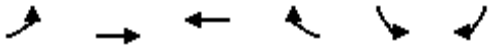
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	62.3		30.2	13.2	56.6		30.2
Change Period (Y+Rc), s	6.3	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	12.7	38.0		32.0	13.0	38.0		32.0
Max Q Clear Time (g_c+I1), s	2.3	2.0		23.7	7.0	33.7		2.5
Green Ext Time (p_c), s	0.0	27.4		1.5	0.2	4.1		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	1266	29	16	676	128	38	57	36	180	61	163
Future Volume (veh/h)	231	1266	29	16	676	128	38	57	36	180	61	163
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	0.99		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	1881	1880	1900	1792	1881	1900	1900	1856	1900	1881	1886	1900
Adj Flow Rate, veh/h	254	1391	32	18	743	141	42	63	40	198	67	179
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	6	1	1	0	2	2	1	0	0
Cap, veh/h	304	1657	38	135	1313	249	261	252	160	391	113	302
Arrive On Green	0.03	0.31	0.31	0.02	0.44	0.44	0.03	0.24	0.24	0.04	0.25	0.25
Sat Flow, veh/h	1792	3570	82	1707	2985	566	1810	1052	668	1792	448	1196
Grp Volume(v), veh/h	254	695	728	18	445	439	42	0	103	198	0	246
Grp Sat Flow(s),veh/h/ln	1792	1786	1866	1707	1787	1764	1810	0	1720	1792	0	1644
Q Serve(g_s), s	4.0	36.3	36.4	0.6	18.6	18.6	1.7	0.0	4.8	4.0	0.0	13.2
Cycle Q Clear(g_c), s	4.0	36.3	36.4	0.6	18.6	18.6	1.7	0.0	4.8	4.0	0.0	13.2
Prop In Lane	1.00		0.04	1.00		0.32	1.00		0.39	1.00		0.73
Lane Grp Cap(c), veh/h	304	829	866	135	786	776	261	0	413	391	0	415
V/C Ratio(X)	0.83	0.84	0.84	0.13	0.57	0.57	0.16	0.00	0.25	0.51	0.00	0.59
Avail Cap(c_a), veh/h	304	829	866	177	786	776	283	0	413	391	0	415
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	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	31.0	31.0	21.0	20.9	20.9	28.2	0.0	30.7	32.0	0.0	32.9
Incr Delay (d2), s/veh	7.6	4.0	3.9	0.3	2.3	2.3	0.3	0.0	1.4	1.1	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(95%),veh/ln	8.1	23.2	24.1	0.5	14.1	13.9	1.6	0.0	4.4	5.3	0.0	10.3
LnGrp Delay(d),s/veh	36.6	35.0	34.9	21.4	23.1	23.2	28.5	0.0	32.2	33.1	0.0	35.1
LnGrp LOS	D	C	C	C	C	C	C		C	C		D
Approach Vol, veh/h		1677			902			145			444	
Approach Delay, s/veh		35.2			23.1			31.1			34.2	
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	10.0	50.0	10.0	30.0	7.6	52.4	8.8	31.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	4.0	44.0	4.0	24.0	4.0	44.0	4.0	24.0
Max Q Clear Time (g_c+I1), s	6.0	20.6	6.0	6.8	2.6	38.4	3.7	15.2
Green Ext Time (p_c), s	0.0	19.9	0.0	2.1	0.0	5.3	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	415	1035	555	108	121	260
Future Volume (veh/h)	415	1035	555	108	121	260
Number	5	2	6	16	7	14
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	1900	1881	1878	1900	1863	1900
Adj Flow Rate, veh/h	456	1137	610	119	133	286
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	1	2	0
Cap, veh/h	500	2109	1072	209	514	741
Arrive On Green	0.06	0.19	0.12	0.12	0.29	0.29
Sat Flow, veh/h	1810	3668	3061	577	1774	1615
Grp Volume(v), veh/h	456	1137	366	363	133	286
Grp Sat Flow(s),veh/h/ln	1810	1787	1784	1760	1774	1615
Q Serve(g_s), s	14.2	28.6	19.4	19.5	5.8	11.6
Cycle Q Clear(g_c), s	14.2	28.6	19.4	19.5	5.8	11.6
Prop In Lane	1.00			0.33	1.00	1.00
Lane Grp Cap(c), veh/h	500	2109	645	636	514	741
V/C Ratio(X)	0.91	0.54	0.57	0.57	0.26	0.39
Avail Cap(c_a), veh/h	611	2109	645	636	514	741
HCM Platoon Ratio	0.33	0.33	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.54	0.54	0.87	0.87	1.00	1.00
Uniform Delay (d), s/veh	21.5	28.0	36.7	36.7	27.2	17.8
Incr Delay (d2), s/veh	9.3	0.5	1.3	1.3	1.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	18.3	18.9	14.6	14.5	5.4	18.3
LnGrp Delay(d),s/veh	30.8	28.6	37.9	38.0	28.5	19.3
LnGrp LOS	C	C	D	D	C	B
Approach Vol, veh/h		1593	729		419	
Approach Delay, s/veh		29.2	38.0		22.2	
Approach LOS		C	D		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		65.0		35.0	22.9	42.1		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		59.0		29.0	23.0	30.0		
Max Q Clear Time (g_c+I1), s		30.6		13.6	16.2	21.5		
Green Ext Time (p_c), s		20.1		1.9	0.7	7.3		

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	380	709	147	297	378	121
Future Volume (veh/h)	380	709	147	297	378	121
Number	6	16	5	2	7	14
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	1881	1881	1845	1863	1881	1900
Adj Flow Rate, veh/h	404	754	156	316	266	275
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	1046	1217	431	1258	366	330
Arrive On Green	0.93	0.93	0.06	0.68	0.20	0.20
Sat Flow, veh/h	1881	1599	1757	1863	1792	1615
Grp Volume(v), veh/h	404	754	156	316	266	275
Grp Sat Flow(s),veh/h/ln	1881	1599	1757	1863	1792	1615
Q Serve(g_s), s	2.4	8.5	3.6	6.6	13.9	16.3
Cycle Q Clear(g_c), s	2.4	8.5	3.6	6.6	13.9	16.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1046	1217	431	1258	366	330
V/C Ratio(X)	0.39	0.62	0.36	0.25	0.73	0.83
Avail Cap(c_a), veh/h	1046	1217	661	1258	520	468
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	1.7	0.6	7.4	6.3	37.2	38.1
Incr Delay (d2), s/veh	0.3	0.9	0.5	0.5	4.1	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	9.5	3.2	6.3	11.7	20.8
LnGrp Delay(d),s/veh	1.9	1.6	7.9	6.8	41.2	48.4
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	1158			472	541	
Approach Delay, s/veh	1.7			7.2	44.9	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		73.6		26.4	11.9	61.6		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		59.0		29.0	19.0	34.0		
Max Q Clear Time (g_c+I1), s		8.6		18.3	5.6	10.5		
Green Ext Time (p_c), s		17.9		2.1	0.3	12.8		

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
User approved changes to right turn type.

Summary of All Intervals

Run Number	1	2	3	4	5	Future	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	7:10	7:10	7:10	7:10	7:10	7:10	7:10
Total Time (min)	13	13	13	13	13	13	13
Time Recorded (min)	10	10	10	10	10	10	10
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1481	1454	1399	1402	1393	1411	1423
Vehs Exited	1280	1232	1222	1253	1192	1228	1236
Starting Vehs	288	278	289	311	272	327	290
Ending Vehs	489	500	466	460	473	510	480
Travel Distance (mi)	1094	1077	1038	1076	1050	1084	1070
Travel Time (hr)	74.9	76.2	74.8	75.1	68.7	81.1	75.1
Total Delay (hr)	38.6	40.2	40.2	39.3	33.7	44.9	39.5
Total Stops	2201	2304	2151	2077	2148	2468	2227
Fuel Used (gal)	46.7	46.8	44.8	46.5	44.3	47.6	46.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:10
Total Time (min)	10

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Future	Avg
Vehs Entered	1481	1454	1399	1402	1393	1411	1423
Vehs Exited	1280	1232	1222	1253	1192	1228	1236
Starting Vehs	288	278	289	311	272	327	290
Ending Vehs	489	500	466	460	473	510	480
Travel Distance (mi)	1094	1077	1038	1076	1050	1084	1070
Travel Time (hr)	74.9	76.2	74.8	75.1	68.7	81.1	75.1
Total Delay (hr)	38.6	40.2	40.2	39.3	33.7	44.9	39.5
Total Stops	2201	2304	2151	2077	2148	2468	2227
Fuel Used (gal)	46.7	46.8	44.8	46.5	44.3	47.6	46.1

1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	3.4	3.1	5.8	9.4	21.7

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	2.5	1.4	1.0	0.3	5.1

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	0.9	0.0	1.4	1.1	3.4

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Travel Time (hr)	0.0	0.6	0.5	1.1

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	3.9	2.9	2.3	0.0	9.1

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Travel Time (hr)	4.5	3.0	0.3	1.2	9.1

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Travel Time (hr)	4.2	2.4	0.7	7.4

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Travel Time (hr)	3.6	0.7	1.0	5.2

Total Network Performance

Travel Time (hr)	75.1

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	65.8	75.1	0.1	4
Fern Creek Ave	2	12.9	34.9	0.2	25
	13	4.0	36.9	0.3	29
Total		82.6	146.8	0.6	15

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	10.9	36.8	0.3	29
Mills Ave	1	85.1	111.0	0.2	8
	24	2.6	12.9	0.1	24
Total		98.6	160.7	0.6	14

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.8	6.9	0.0	26
Nebraska St	3	14.2	22.6	0.1	12
	22	2.5	11.0	0.1	24
Corrine Dr	4	1.6	8.1	0.1	24
	9	1.4	11.1	0.1	27
Total		20.5	59.6	0.3	20

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	2.2	12.0	0.1	25
	22	1.1	7.9	0.1	25
Nebraska St	3	17.2	25.6	0.1	10
	19	1.9	11.0	0.1	25
	13	0.4	6.1	0.0	29
Total		22.7	62.6	0.3	19

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	5.8	12.8	0.1	17
	9	0.1	1.8	0.1	166
Bumby Ave	5	37.9	51.4	0.1	9
Winter Park Rd	6	17.2	49.8	0.3	25
General Rees Ave	7	13.1	50.5	0.4	28
Bennett Rd	8	23.7	65.0	0.4	20
Total		97.7	231.3	1.4	21

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	16.5	24.1	0.1	8
General Rees Ave	7	27.2	56.3	0.4	23
Winter Park Rd	6	17.9	52.2	0.4	27
Bumby Ave	5	11.7	45.9	0.3	27
	9	2.1	16.9	0.1	28
Corrine Dr	4	1.3	11.6	0.1	26
Total		76.7	206.9	1.4	24

Intersection: 1: Mills Ave & Virginia Dr

Movement	EB	EB	EB	B24	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	R	L	T	TR	L	L
Maximum Queue (ft)	142	411	408	217	234	690	183	180	496	496	250	300
Average Queue (ft)	110	346	355	65	116	432	107	138	491	479	226	289
95th Queue (ft)	175	454	479	233	266	857	220	207	513	540	284	332
Link Distance (ft)		366	366	931		1182	1182		481	481		
Upstream Blk Time (%)		12	10						29	23		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (ft)	100				185			135			200	200
Storage Blk Time (%)	33	53			4	42		31	44		32	53
Queuing Penalty (veh)	99	67			15	49		192	60		252	416

Intersection: 1: Mills Ave & Virginia Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	544	535
Average Queue (ft)	530	505
95th Queue (ft)	564	596
Link Distance (ft)	514	514
Upstream Blk Time (%)	40	20
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	33	
Queuing Penalty (veh)	132	

Intersection: 2: Fern Creek Ave & Virginia Dr

Movement	EB	EB	EB	WB	WB	WB	B13	NB	SB
Directions Served	L	T	TR	L	T	TR	T	LTR	LTR
Maximum Queue (ft)	15	297	321	82	151	147	8	326	128
Average Queue (ft)	3	186	198	51	80	74	2	227	80
95th Queue (ft)	18	339	357	104	159	158	15	378	150
Link Distance (ft)		1182	1182		1506	1506	196	381	408
Upstream Blk Time (%)								2	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	150			150					
Storage Blk Time (%)		13			1				
Queuing Penalty (veh)		1			1				

Intersection: 3: Forest Ave & Nebraska St

Movement	EB	WB	NB	NB	NB	B19	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	T	L	T	TR
Maximum Queue (ft)	298	20	36	248	275	6	5	256	295
Average Queue (ft)	221	6	13	178	197	1	1	148	191
95th Queue (ft)	331	26	44	284	320	12	10	280	322
Link Distance (ft)	402	230		349	349	196		326	326
Upstream Blk Time (%)	0				0			0	0
Queuing Penalty (veh)	0				0			0	2
Storage Bay Dist (ft)			150				150		
Storage Blk Time (%)				10				9	
Queuing Penalty (veh)				1				0	

Intersection: 4: Forest Ave & Corrine Dr

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	T	T	T	TR
Maximum Queue (ft)	19	24	97	106	106	128
Average Queue (ft)	5	8	29	33	26	39
95th Queue (ft)	23	29	102	110	107	129
Link Distance (ft)	264	264	233	233	385	385
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 5: Bumby Ave & Corrine Dr

Movement	EB	EB	EB	B9	B9	WB	WB	WB	NB	SB
Directions Served	L	T	TR	T	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	62	509	533	7	9	135	145	142	440	30
Average Queue (ft)	23	373	380	1	2	104	71	86	378	11
95th Queue (ft)	104	586	603	13	19	157	153	161	571	41
Link Distance (ft)		627	627	385	385		1769	1769	485	553
Upstream Blk Time (%)		1	2						20	
Queuing Penalty (veh)		10	16						0	
Storage Bay Dist (ft)	150					150				
Storage Blk Time (%)		38				2	0			
Queuing Penalty (veh)		8				8	1			

Intersection: 6: Winter Park Rd & Corrine Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	183	260	250	82	258	266	54	106	154	285
Average Queue (ft)	118	191	181	26	170	185	33	59	104	184
95th Queue (ft)	205	298	286	106	279	296	61	121	160	296
Link Distance (ft)		1769	1769		1974	1974		477	519	519
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150			150			135			
Storage Blk Time (%)	7	13			6			2		
Queuing Penalty (veh)	56	39			1			1		

Intersection: 7: Corrine Dr & General Rees Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	241	251	250	215	234	140	125
Average Queue (ft)	173	134	144	158	177	79	77
95th Queue (ft)	278	325	319	230	255	162	142
Link Distance (ft)		1974	1974	1816	1816		617
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	225					300	
Storage Blk Time (%)	6	2					
Queuing Penalty (veh)	40	11					

Intersection: 8: Bennett Rd & Corrine Dr

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	R	L	T	L	LR
Maximum Queue (ft)	292	267	108	220	142	152
Average Queue (ft)	158	149	77	148	98	86
95th Queue (ft)	318	353	135	243	153	165
Link Distance (ft)	1816	1816		244	1031	1031
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			125			
Storage Blk Time (%)			0	10		
Queuing Penalty (veh)			0	18		

Network Summary

Network wide Queuing Penalty: 1497

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

07/10/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Future Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.99	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	1881	1900	1900	1863	1881	1881	1900	1884	1900	1845	1882	1900
Adj Flow Rate, veh/h	126	605	136	118	413	279	137	1236	208	406	1598	78
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	0	0	2	1	1	0	1	1	3	1	1
Cap, veh/h	138	689	155	148	434	366	155	1372	229	439	1698	83
Arrive On Green	0.05	0.24	0.24	0.05	0.23	0.23	0.09	0.45	0.45	0.13	0.49	0.49
Sat Flow, veh/h	1792	2919	655	1774	1881	1589	1810	3063	512	3408	3471	169
Grp Volume(v), veh/h	126	374	367	118	413	279	137	719	725	406	820	856
Grp Sat Flow(s),veh/h/ln	1792	1805	1769	1774	1881	1589	1810	1790	1785	1704	1788	1852
Q Serve(g_s), s	8.8	35.9	36.1	8.4	39.0	29.5	13.5	66.7	68.1	21.2	77.9	79.1
Cycle Q Clear(g_c), s	8.8	35.9	36.1	8.4	39.0	29.5	13.5	66.7	68.1	21.2	77.9	79.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.29	1.00		0.09
Lane Grp Cap(c), veh/h	138	426	418	148	434	366	155	801	799	439	874	906
V/C Ratio(X)	0.91	0.88	0.88	0.80	0.95	0.76	0.88	0.90	0.91	0.92	0.94	0.95
Avail Cap(c_a), veh/h	138	434	425	148	442	373	158	801	799	439	874	906
HCM Platoon Ratio	1.00	1.00	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	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	66.2	66.3	57.2	68.3	64.6	81.4	45.9	46.2	77.5	43.4	43.7
Incr Delay (d2), s/veh	50.8	17.8	18.5	24.2	29.8	8.4	39.2	14.8	16.0	25.3	18.6	19.3
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(95%),veh/ln	6.9	27.4	27.1	9.2	31.7	19.8	13.2	46.1	47.0	17.1	53.8	56.3
LnGrp Delay(d),s/veh	108.8	84.0	84.8	81.5	98.0	73.0	120.6	60.6	62.2	102.8	62.0	63.0
LnGrp LOS	F	F	F	F	F	E	F	E	E	F	E	E
Approach Vol, veh/h		867			810			1581			2082	
Approach Delay, s/veh		87.9			87.0			66.6			70.3	
Approach LOS		F			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	21.8	94.4	15.6	48.2	29.2	87.0	14.6	49.2
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	15.7	* 87	* 8.8	42.3	23.2	* 80	8.4	43.3
Max Q Clear Time (g_c+I1), s	15.5	81.1	10.8	41.0	23.2	70.1	10.4	38.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.5	0.0	2.9	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	74.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Future Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1900	1883	1900	1900	1881	1900	1900	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	4	1149	103	83	709	7	99	79	206	15	107	5
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	1	0	0	0	0	0	0
Cap, veh/h	458	2026	181	254	2217	22	141	102	229	69	427	19
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	746	3314	297	451	3626	36	355	380	851	108	1589	70
Grp Volume(v), veh/h	4	619	633	83	349	367	384	0	0	127	0	0
Grp Sat Flow(s),veh/h/ln	746	1789	1822	451	1787	1874	1586	0	0	1766	0	0
Q Serve(g_s), s	0.3	20.6	20.7	13.4	9.4	9.4	18.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	20.6	20.7	34.1	9.4	9.4	23.2	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.02	0.26		0.54	0.12		0.04
Lane Grp Cap(c), veh/h	458	1094	1114	254	1093	1146	471	0	0	515	0	0
V/C Ratio(X)	0.01	0.57	0.57	0.33	0.32	0.32	0.81	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	458	1094	1114	254	1093	1146	551	0	0	604	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)	0.32	0.32	0.32	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	11.6	11.6	21.7	9.4	9.4	35.0	0.0	0.0	28.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	3.4	0.8	0.7	8.4	0.0	0.0	0.3	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(95%),veh/ln	0.1	13.1	13.6	3.4	8.5	8.8	16.9	0.0	0.0	5.0	0.0	0.0
LnGrp Delay(d),s/veh	11.7	12.2	12.2	25.1	10.2	10.1	43.4	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	B	B	B	C	B	B	D			C		
Approach Vol, veh/h		1256			799			384			127	
Approach Delay, s/veh		12.2			11.7			43.4			29.0	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		67.1		32.9		67.1		32.9
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		56.0		32.0		56.0		32.0
Max Q Clear Time (g_c+I1), s		36.1		25.2		22.7		7.3
Green Ext Time (p_c), s		13.8		1.6		28.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
Future Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
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		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	1900	1896	1900	1900	1900	1900	1520	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	585	28	10	0	12	0	12	1156	5	3	646	387
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	0	0	0	25	1	1	0	1	1
Cap, veh/h	705	30	11	0	892	0	154	1541	7	154	900	539
Arrive On Green	0.47	0.47	0.47	0.00	0.47	0.00	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1341	64	23	0	1900	0	444	3650	16	491	2131	1276
Grp Volume(v), veh/h	623	0	0	0	12	0	12	566	595	3	542	491
Grp Sat Flow(s),veh/h/ln	1428	0	0	0	1900	0	444	1787	1878	491	1787	1620
Q Serve(g_s), s	37.7	0.0	0.0	0.0	0.3	0.0	2.1	24.7	24.7	0.5	23.2	23.2
Cycle Q Clear(g_c), s	38.0	0.0	0.0	0.0	0.3	0.0	25.3	24.7	24.7	25.2	23.2	23.2
Prop In Lane	0.94		0.02	0.00		0.00	1.00		0.01	1.00		0.79
Lane Grp Cap(c), veh/h	746	0	0	0	892	0	154	755	793	154	755	684
V/C Ratio(X)	0.84	0.00	0.00	0.00	0.01	0.00	0.08	0.75	0.75	0.02	0.72	0.72
Avail Cap(c_a), veh/h	865	0	0	0	1049	0	154	755	793	154	755	684
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	0.0	13.1	0.0	32.6	22.6	22.6	33.2	22.1	22.1
Incr Delay (d2), s/veh	6.3	0.0	0.0	0.0	0.0	0.0	1.0	6.7	6.4	0.2	5.8	6.4
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(95%),veh/ln	22.8	0.0	0.0	0.0	0.3	0.0	0.5	19.6	20.3	0.1	18.5	17.2
LnGrp Delay(d),s/veh	29.5	0.0	0.0	0.0	13.1	0.0	33.6	29.3	29.0	33.4	27.9	28.5
LnGrp LOS	C				B		C	C	C	C	C	C
Approach Vol, veh/h		623			12			1173			1036	
Approach Delay, s/veh		29.5			13.1			29.2			28.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.0		48.3		44.0		48.3
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0		51.0		39.0		51.0
Max Q Clear Time (g_c+I1), s		27.3		40.0		27.2		2.3
Green Ext Time (p_c), s		6.0		3.4		5.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	13	5	1636	960	4
Future Volume (veh/h)	5	13	5	1636	960	4
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	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	14	5	1740	1021	4
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1
Cap, veh/h	58	52	193	2763	2110	8
Arrive On Green	0.03	0.03	0.11	0.77	0.58	0.58
Sat Flow, veh/h	1810	1615	1810	3668	3746	14
Grp Volume(v), veh/h	5	14	5	1740	500	525
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1787	1787	1879
Q Serve(g_s), s	0.2	0.5	0.1	12.1	9.2	9.2
Cycle Q Clear(g_c), s	0.2	0.5	0.1	12.1	9.2	9.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	58	52	193	2763	1033	1086
V/C Ratio(X)	0.09	0.27	0.03	0.63	0.48	0.48
Avail Cap(c_a), veh/h	610	544	193	4437	1870	1966
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	26.5	26.7	22.6	2.8	7.0	7.0
Incr Delay (d2), s/veh	0.6	2.8	0.0	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.8	0.1	9.9	8.1	8.4
LnGrp Delay(d),s/veh	27.1	29.4	22.6	3.1	7.4	7.4
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	19			1745	1025	
Approach Delay, s/veh	28.8			3.2	7.4	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.6		7.8	11.0	37.6		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		14.1		2.5	2.1	11.2		
Green Ext Time (p_c), s		29.4		0.0	0.0	10.7		

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Future Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1882	1900	1881	1881	1900	1900	1877	1900	1900	1754	1900
Adj Flow Rate, veh/h	23	1755	118	234	968	13	124	5	370	6	5	4
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	0	25	25	25
Cap, veh/h	289	1634	109	179	1853	25	147	15	334	141	113	74
Arrive On Green	0.02	0.48	0.48	0.04	0.34	0.34	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1810	3403	227	1792	3610	48	352	51	1153	314	388	255
Grp Volume(v), veh/h	23	914	959	234	479	502	499	0	0	15	0	0
Grp Sat Flow(s),veh/h/ln	1810	1788	1842	1792	1787	1871	1555	0	0	957	0	0
Q Serve(g_s), s	0.6	48.0	48.0	6.0	21.4	21.4	26.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	48.0	48.0	6.0	21.4	21.4	29.0	0.0	0.0	0.6	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.03	0.25		0.74	0.40		0.27
Lane Grp Cap(c), veh/h	289	858	884	179	918	961	496	0	0	328	0	0
V/C Ratio(X)	0.08	1.06	1.08	1.30	0.52	0.52	1.01	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	337	858	884	179	918	961	496	0	0	328	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.47	0.47	0.47	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.2	26.0	26.0	28.3	23.0	23.0	36.7	0.0	0.0	25.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	49.5	55.9	154.5	1.0	1.0	41.9	0.0	0.0	0.1	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(95%),veh/ln	0.6	63.7	68.5	22.8	14.5	15.1	34.9	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	14.3	75.5	81.9	182.9	24.0	24.0	78.7	0.0	0.0	25.5	0.0	0.0
LnGrp LOS	B	F	F	F	C	C	F			C		
Approach Vol, veh/h		1896			1215			499			15	
Approach Delay, s/veh		78.0			54.6			78.7			25.5	
Approach LOS		E			D			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	8.7	57.3		34.0	12.0	54.0		34.0
Change Period (Y+Rc), s	6.3	6.0		5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s	5.0	48.7		29.0	6.0	48.0		29.0
Max Q Clear Time (g_c+I1), s	2.6	23.4		31.0	8.0	50.0		2.6
Green Ext Time (p_c), s	0.0	9.5		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	70.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Future Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.99		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	1881	1880	1900	1792	1881	1900	1900	1856	1900	1881	1886	1900
Adj Flow Rate, veh/h	335	1722	66	22	913	173	55	77	48	243	82	242
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	6	1	1	0	2	2	1	0	0
Cap, veh/h	383	1795	68	203	1174	222	135	191	119	308	81	238
Arrive On Green	0.27	1.00	1.00	0.02	0.39	0.39	0.03	0.18	0.18	0.05	0.20	0.20
Sat Flow, veh/h	1792	3508	134	1707	2986	565	1810	1059	660	1792	414	1220
Grp Volume(v), veh/h	335	873	915	22	546	540	55	0	125	243	0	324
Grp Sat Flow(s),veh/h/ln	1792	1786	1856	1707	1787	1764	1810	0	1719	1792	0	1634
Q Serve(g_s), s	11.3	0.0	0.0	0.8	26.7	26.8	2.5	0.0	6.4	5.0	0.0	19.5
Cycle Q Clear(g_c), s	11.3	0.0	0.0	0.8	26.7	26.8	2.5	0.0	6.4	5.0	0.0	19.5
Prop In Lane	1.00		0.07	1.00		0.32	1.00		0.38	1.00		0.75
Lane Grp Cap(c), veh/h	383	914	950	203	703	693	135	0	309	308	0	319
V/C Ratio(X)	0.88	0.96	0.96	0.11	0.78	0.78	0.41	0.00	0.40	0.79	0.00	1.02
Avail Cap(c_a), veh/h	442	914	950	240	703	693	144	0	309	308	0	319
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)	0.09	0.09	0.09	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	0.0	17.5	26.5	26.5	33.4	0.0	36.3	39.0	0.0	40.2
Incr Delay (d2), s/veh	1.8	3.2	3.7	0.2	5.9	6.0	2.0	0.0	3.9	13.0	0.0	54.7
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	0.1
%ile BackOfQ(95%),veh/ln	6.8	1.3	1.5	0.7	19.3	19.3	2.3	0.0	6.1	10.7	0.0	24.5
LnGrp Delay(d),s/veh	18.4	3.2	3.7	17.7	32.4	32.5	35.4	0.0	40.1	51.9	0.0	95.0
LnGrp LOS	B	A	A	B	C	C	D		D	D		F
Approach Vol, veh/h		2123			1108			180			567	
Approach Delay, s/veh		5.8			32.1			38.7			76.5	
Approach LOS		A			C			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	19.7	45.3	11.0	24.0	7.8	57.2	9.5	25.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	36.0	5.0	18.0	4.0	49.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	13.3	28.8	7.0	8.4	2.8	2.0	4.5	21.5
Green Ext Time (p_c), s	0.4	4.7	0.0	0.4	0.0	30.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	510	1273	683	133	149	320
Future Volume (veh/h)	510	1273	683	133	149	320
Number	5	2	6	16	7	14
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	1900	1881	1878	1900	1863	1900
Adj Flow Rate, veh/h	560	1399	751	146	164	352
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	1	2	0
Cap, veh/h	592	2502	1227	238	319	657
Arrive On Green	0.45	1.00	0.14	0.14	0.18	0.18
Sat Flow, veh/h	1810	3668	3062	577	1774	1615
Grp Volume(v), veh/h	560	1399	451	446	164	352
Grp Sat Flow(s),veh/h/ln	1810	1787	1784	1760	1774	1615
Q Serve(g_s), s	19.5	0.0	23.8	23.8	8.4	16.5
Cycle Q Clear(g_c), s	19.5	0.0	23.8	23.8	8.4	16.5
Prop In Lane	1.00			0.33	1.00	1.00
Lane Grp Cap(c), veh/h	592	2502	738	728	319	657
V/C Ratio(X)	0.95	0.56	0.61	0.61	0.51	0.54
Avail Cap(c_a), veh/h	797	2502	738	728	319	657
HCM Platoon Ratio	2.00	2.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.32	0.32	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	35.6	35.6	37.0	22.5
Incr Delay (d2), s/veh	6.6	0.3	1.6	1.6	5.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.2	0.2	17.5	17.3	8.1	22.6
LnGrp Delay(d),s/veh	18.0	0.3	37.2	37.2	42.8	25.6
LnGrp LOS	B	A	D	D	D	C
Approach Vol, veh/h		1959	897		516	
Approach Delay, s/veh		5.3	37.2		31.1	
Approach LOS		A	D		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.0		24.0	28.7	47.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	34.0	30.0		
Max Q Clear Time (g_c+I1), s		2.0		18.5	21.5	25.8		
Green Ext Time (p_c), s		24.8		0.0	1.1	2.5		

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	872	181	365	465	149
Future Volume (veh/h)	467	872	181	365	465	149
Number	6	16	5	2	7	14
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	1881	1881	1845	1863	1881	1900
Adj Flow Rate, veh/h	497	928	193	388	327	339
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	935	1196	352	1171	451	406
Arrive On Green	0.83	0.83	0.07	0.63	0.25	0.25
Sat Flow, veh/h	1881	1597	1757	1863	1792	1615
Grp Volume(v), veh/h	497	928	193	388	327	339
Grp Sat Flow(s),veh/h/ln	1881	1597	1757	1863	1792	1615
Q Serve(g_s), s	8.0	49.7	5.1	9.8	16.7	19.9
Cycle Q Clear(g_c), s	8.0	49.7	5.1	9.8	16.7	19.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	935	1196	352	1171	451	406
V/C Ratio(X)	0.53	0.78	0.55	0.33	0.73	0.83
Avail Cap(c_a), veh/h	935	1196	385	1171	681	614
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.0	3.2	10.6	8.7	34.3	35.5
Incr Delay (d2), s/veh	0.6	2.8	1.3	0.8	3.2	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	33.8	4.6	8.9	13.5	24.1
LnGrp Delay(d),s/veh	5.6	6.0	11.9	9.5	37.4	43.2
LnGrp LOS	A	A	B	A	D	D
Approach Vol, veh/h	1425			581	666	
Approach Delay, s/veh	5.9			10.3	40.4	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		68.8		31.2	13.1	55.7		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		50.0		38.0	9.0	35.0		
Max Q Clear Time (g_c+I1), s		11.8		21.9	7.1	51.7		
Green Ext Time (p_c), s		4.1		3.3	0.1	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	48.8	58.3	0.1	5
Fern Creek Ave	2	7.6	32.7	0.2	26
	13	2.6	37.8	0.3	28
Total		58.9	128.8	0.6	17

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	5.6	34.5	0.3	31
Mills Ave	1	54.4	81.3	0.2	11
	24	2.6	13.4	0.1	23
Total		62.6	129.1	0.6	17

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.4	6.5	0.0	27
Nebraska St	3	4.4	12.7	0.1	22
	22	1.3	10.0	0.1	26
Corrine Dr	4	1.1	7.0	0.1	28
	9	0.6	10.3	0.1	29
Total		7.8	46.5	0.3	26

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	2.6	11.6	0.1	26
	22	0.9	7.6	0.1	26
Nebraska St	3	5.4	13.0	0.1	20
	19	1.1	10.4	0.1	27
	13	0.2	6.0	0.0	29
Total		10.3	48.7	0.3	25

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	13.0	21.2	0.1	10
	9	0.9	13.1	0.1	23
Bumby Ave	5	34.5	46.4	0.1	10
Winter Park Rd	6	9.2	43.7	0.3	29
General Rees Ave	7	10.2	46.6	0.4	30
Bennett Rd	8	10.8	57.5	0.4	23
Total		78.6	228.4	1.4	22

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	7.3	14.4	0.1	13
General Rees Ave	7	33.3	66.4	0.4	20
Winter Park Rd	6	15.1	49.0	0.4	28
Bumby Ave	5	11.6	46.4	0.3	27
	9	2.2	17.9	0.1	26
Corrine Dr	4	3.4	16.3	0.1	19
Total		72.9	210.4	1.4	23

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

10/04/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	465	190	110	378	83	149	872	82	102	898	73
Future Volume (veh/h)	171	465	190	110	378	83	149	872	82	102	898	73
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.98
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	1881	1887	1900	1863	1900	1881	1863	1881	1900	1900	1880	1900
Adj Flow Rate, veh/h	188	511	209	121	415	91	164	958	90	112	987	80
Adj No. of Lanes	1	2	0	1	1	1	1	2	0	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	0	1	2	1	1	0	1	1
Cap, veh/h	220	661	269	206	447	369	385	1610	151	150	1040	84
Arrive On Green	0.09	0.27	0.27	0.06	0.24	0.24	0.22	0.49	0.49	0.04	0.31	0.31
Sat Flow, veh/h	1792	2484	1011	1774	1900	1569	1774	3299	310	3510	3339	271
Grp Volume(v), veh/h	188	368	352	121	415	91	164	519	529	112	528	539
Grp Sat Flow(s),veh/h/ln	1792	1792	1703	1774	1900	1569	1774	1787	1821	1755	1786	1824
Q Serve(g_s), s	14.2	34.1	34.4	9.2	38.5	8.5	14.4	37.7	37.7	5.7	52.0	52.0
Cycle Q Clear(g_c), s	14.2	34.1	34.4	9.2	38.5	8.5	14.4	37.7	37.7	5.7	52.0	52.0
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.17	1.00		0.15
Lane Grp Cap(c), veh/h	220	477	453	206	447	369	385	872	889	150	556	568
V/C Ratio(X)	0.85	0.77	0.78	0.59	0.93	0.25	0.43	0.59	0.60	0.75	0.95	0.95
Avail Cap(c_a), veh/h	221	531	504	221	520	430	385	872	889	195	651	665
HCM Platoon Ratio	1.00	1.00	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	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	61.0	61.1	50.4	67.3	55.8	60.8	33.2	33.2	85.2	60.6	60.6
Incr Delay (d2), s/veh	26.1	6.3	6.8	3.5	20.9	0.3	0.7	3.0	2.9	10.6	27.4	27.1
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(95%),veh/ln	13.3	24.7	23.9	8.2	30.5	6.7	11.5	26.5	27.0	5.4	38.9	39.5
LnGrp Delay(d),s/veh	76.3	67.3	68.0	53.9	88.2	56.2	61.5	36.2	36.2	95.8	88.0	87.7
LnGrp LOS	E	E	E	D	F	E	E	D	D	F	F	F
Approach Vol, veh/h		908			627			1212			1179	
Approach Delay, s/veh		69.4			76.9			39.6			88.6	
Approach LOS		E			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	45.5	62.5	23.0	49.1	13.7	94.3	17.5	54.6
Change Period (Y+Rc), s	* 6.4	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	* 23	* 66	* 16	49.3	10.0	* 79	12.8	53.3
Max Q Clear Time (g_c+I1), s	16.4	54.0	16.2	40.5	7.7	39.7	11.2	36.4
Green Ext Time (p_c), s	0.2	2.0	0.0	1.9	0.1	2.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	612	5	5	560	42	4	31	1	61	30	34
Future Volume (veh/h)	52	612	5	5	560	42	4	31	1	61	30	34
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1863	1900	1900	1848	1900	1900	1900	1900	1900	1878	1900
Adj Flow Rate, veh/h	58	680	6	6	622	47	4	34	1	68	33	38
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	0	3	3	0	0	0	5	5	5
Cap, veh/h	626	2750	24	617	2528	191	48	202	6	132	53	50
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	780	3595	32	768	3305	249	69	1753	48	680	464	430
Grp Volume(v), veh/h	58	335	351	6	330	339	39	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	780	1770	1857	768	1756	1798	1870	0	0	1574	0	0
Q Serve(g_s), s	2.3	5.5	5.5	0.2	5.4	5.5	0.0	0.0	0.0	6.6	0.0	0.0
Cycle Q Clear(g_c), s	7.8	5.5	5.5	5.7	5.4	5.5	1.9	0.0	0.0	8.5	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.14	0.10		0.03	0.49		0.27
Lane Grp Cap(c), veh/h	626	1354	1420	617	1343	1375	255	0	0	235	0	0
V/C Ratio(X)	0.09	0.25	0.25	0.01	0.25	0.25	0.15	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	626	1354	1420	617	1343	1375	663	0	0	579	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)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.5	3.4	3.4	4.2	3.4	3.4	40.0	0.0	0.0	42.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.2	0.0	0.4	0.4	0.3	0.0	0.0	2.9	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(95%),veh/ln	1.0	4.8	5.0	0.1	4.9	5.0	1.8	0.0	0.0	7.0	0.0	0.0
LnGrp Delay(d),s/veh	4.7	3.7	3.7	4.3	3.8	3.8	40.3	0.0	0.0	45.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D			D		
Approach Vol, veh/h		744			675			39			139	
Approach Delay, s/veh		3.7			3.8			40.3			45.6	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		82.5		17.5		82.5		17.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		54.0		34.0		54.0		34.0
Max Q Clear Time (g_c+I1), s		7.7		3.9		9.8		10.5
Green Ext Time (p_c), s		19.5		0.2		21.1		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	16	4	0	5	0	1	499	1	1	527	208
Future Volume (veh/h)	183	16	4	0	5	0	1	499	1	1	527	208
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)	0.99		0.98	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	1900	1883	1900	1900	1900	1900	1900	1881	1900	1900	1871	1900
Adj Flow Rate, veh/h	193	17	4	0	5	0	1	525	1	1	555	219
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	1
Cap, veh/h	336	22	5	0	363	0	508	2476	5	650	1676	659
Arrive On Green	0.19	0.19	0.19	0.00	0.19	0.00	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1285	113	27	0	1900	0	707	3660	7	890	2477	974
Grp Volume(v), veh/h	214	0	0	0	5	0	1	256	270	1	398	376
Grp Sat Flow(s),veh/h/ln	1425	0	0	0	1900	0	707	1787	1880	890	1777	1674
Q Serve(g_s), s	10.7	0.0	0.0	0.0	0.2	0.0	0.0	4.1	4.1	0.0	7.0	7.1
Cycle Q Clear(g_c), s	10.8	0.0	0.0	0.0	0.2	0.0	7.1	4.1	4.1	4.1	7.0	7.1
Prop In Lane	0.90		0.02	0.00		0.00	1.00		0.00	1.00		0.58
Lane Grp Cap(c), veh/h	363	0	0	0	363	0	508	1209	1272	650	1202	1132
V/C Ratio(X)	0.59	0.00	0.00	0.00	0.01	0.00	0.00	0.21	0.21	0.00	0.33	0.33
Avail Cap(c_a), veh/h	833	0	0	0	983	0	508	1209	1272	650	1202	1132
HCM Platoon Ratio	1.00	1.00	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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	0.0	0.0	24.7	0.0	6.6	4.6	4.6	5.4	5.1	5.1
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	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(95%),veh/ln	7.8	0.0	0.0	0.0	0.2	0.0	0.0	3.8	4.0	0.0	6.6	6.3
LnGrp Delay(d),s/veh	30.7	0.0	0.0	0.0	24.8	0.0	6.6	5.0	5.0	5.4	5.8	5.9
LnGrp LOS	C				C		A	A	A	A	A	A
Approach Vol, veh/h		214			5			527			775	
Approach Delay, s/veh		30.7			24.8			5.0			5.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		56.0		19.4		56.0		19.4
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		51.0		39.0		51.0		39.0
Max Q Clear Time (g_c+I1), s		9.1		12.8		9.1		2.2
Green Ext Time (p_c), s		3.5		1.3		5.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	12	22	486	551	29
Future Volume (veh/h)	24	12	22	486	551	29
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	25	13	23	512	580	31
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	109	98	275	2383	1328	71
Arrive On Green	0.06	0.06	0.15	0.66	0.38	0.38
Sat Flow, veh/h	1810	1615	1810	3705	3581	186
Grp Volume(v), veh/h	25	13	23	512	300	311
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1805	1805	1867
Q Serve(g_s), s	0.5	0.3	0.4	2.2	4.9	4.9
Cycle Q Clear(g_c), s	0.5	0.3	0.4	2.2	4.9	4.9
Prop In Lane	1.00	1.00	1.00			0.10
Lane Grp Cap(c), veh/h	109	98	275	2383	688	712
V/C Ratio(X)	0.23	0.13	0.08	0.21	0.44	0.44
Avail Cap(c_a), veh/h	1057	944	598	6053	2201	2277
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	17.6	17.5	14.3	2.6	9.0	9.0
Incr Delay (d2), s/veh	1.0	0.6	0.0	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.5	0.4	2.0	4.5	4.7
LnGrp Delay(d),s/veh	18.7	18.1	14.4	2.7	9.6	9.6
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	38			535	611	
Approach Delay, s/veh	18.5			3.2	9.6	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		31.0		8.4	11.0	20.0		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		66.0		23.0	13.0	48.0		
Max Q Clear Time (g_c+I1), s		4.2		2.5	2.4	6.9		
Green Ext Time (p_c), s		4.8		0.1	0.0	5.2		

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	637	30	178	686	6	80	1	175	4	5	4
Future Volume (veh/h)	7	637	30	178	686	6	80	1	175	4	5	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1862	1900	1863	1860	1900	1900	1875	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	692	33	193	746	7	87	1	190	4	5	4
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	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, %	0	2	2	2	2	2	0	0	0	0	0	0
Cap, veh/h	471	1919	91	513	2455	23	133	15	217	0	199	160
Arrive On Green	0.56	0.56	0.56	0.04	0.46	0.46	0.21	0.21	0.21	0.00	0.21	0.21
Sat Flow, veh/h	720	3433	164	1774	3586	34	417	71	1055	0	970	776
Grp Volume(v), veh/h	8	356	369	193	368	385	278	0	0	0	0	9
Grp Sat Flow(s),veh/h/ln	720	1769	1828	1774	1767	1853	1544	0	0	0	0	1747
Q Serve(g_s), s	0.5	11.1	11.1	4.3	13.1	13.1	14.8	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	1.0	11.1	11.1	4.3	13.1	13.1	17.4	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		0.09	1.00		0.02	0.31		0.68	0.00		0.44
Lane Grp Cap(c), veh/h	471	989	1022	513	1209	1268	364	0	0	0	0	359
V/C Ratio(X)	0.02	0.36	0.36	0.38	0.30	0.30	0.76	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	471	989	1022	662	1209	1268	493	0	0	0	0	699
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	12.2	12.2	8.5	12.1	12.1	38.4	0.0	0.0	0.0	0.0	31.7
Incr Delay (d2), s/veh	0.1	1.0	1.0	0.3	0.4	0.4	4.8	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(95%),veh/ln	0.2	9.6	9.9	3.8	10.0	10.4	12.5	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	10.1	13.2	13.2	8.8	12.5	12.5	43.2	0.0	0.0	0.0	0.0	31.8
LnGrp LOS	B	B	B	A	B	B	D					C
Approach Vol, veh/h		733			946			278			9	
Approach Delay, s/veh		13.2			11.8			43.2			31.8	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		74.5	0.0	25.5	12.6	61.9		25.5
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s		49.0	5.0	29.0	15.0	28.0		40.0
Max Q Clear Time (g_c+I1), s		15.1	0.0	19.4	6.3	13.1		2.4
Green Ext Time (p_c), s		7.5	0.0	1.1	0.3	5.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	674	30	26	668	96	47	37	33	144	49	140
Future Volume (veh/h)	139	674	30	26	668	96	47	37	33	144	49	140
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.99		0.99	0.98		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	1881	1879	1900	1900	1863	1900	1900	1900	1900	1863	1875	1900
Adj Flow Rate, veh/h	146	709	32	27	703	101	49	39	35	152	52	147
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	2	2	0	0	0	2	5	5
Cap, veh/h	387	1735	78	341	1417	203	263	183	165	295	66	186
Arrive On Green	0.02	0.16	0.16	0.02	0.46	0.46	0.09	0.20	0.20	0.04	0.15	0.15
Sat Flow, veh/h	1792	3473	157	1810	3092	444	1810	917	823	1774	427	1207
Grp Volume(v), veh/h	146	364	377	27	402	402	49	0	74	152	0	199
Grp Sat Flow(s),veh/h/ln	1792	1785	1845	1810	1770	1766	1810	0	1740	1774	0	1634
Q Serve(g_s), s	4.2	18.3	18.3	0.8	15.9	16.0	0.0	0.0	3.6	0.0	0.0	11.7
Cycle Q Clear(g_c), s	4.2	18.3	18.3	0.8	15.9	16.0	0.0	0.0	3.6	0.0	0.0	11.7
Prop In Lane	1.00		0.08	1.00		0.25	1.00		0.47	1.00		0.74
Lane Grp Cap(c), veh/h	387	891	921	341	811	809	263	0	348	295	0	251
V/C Ratio(X)	0.38	0.41	0.41	0.08	0.50	0.50	0.19	0.00	0.21	0.51	0.00	0.79
Avail Cap(c_a), veh/h	473	891	921	375	811	809	263	0	348	350	0	376
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	28.5	28.5	14.8	19.0	19.0	40.7	0.0	33.4	40.2	0.0	40.8
Incr Delay (d2), s/veh	0.5	1.2	1.2	0.1	1.9	1.9	0.3	0.0	1.4	1.4	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(95%),veh/ln	3.7	14.0	14.4	0.7	12.5	12.5	2.3	0.0	3.3	7.4	0.0	9.7
LnGrp Delay(d),s/veh	15.3	29.7	29.7	14.9	20.9	20.9	41.0	0.0	34.8	41.6	0.0	47.5
LnGrp LOS	B	C	C	B	C	C	D		C	D		D
Approach Vol, veh/h		887			831			123			351	
Approach Delay, s/veh		27.3			20.7			37.3			44.9	
Approach LOS		C			C			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	12.2	51.8	9.9	26.0	8.1	55.9	14.6	21.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	38.0	7.0	20.0	4.0	45.0	4.0	23.0
Max Q Clear Time (g_c+I1), s	6.2	18.0	2.0	5.6	2.8	20.3	2.0	13.7
Green Ext Time (p_c), s	0.1	6.9	0.2	0.3	0.0	6.7	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	550	485	101	122	111
Future Volume (veh/h)	220	550	485	101	122	111
Number	5	2	6	16	7	14
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	1881	1881	1863	1900	1863	1881
Adj Flow Rate, veh/h	232	579	511	106	128	117
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	2	2	2	1
Cap, veh/h	497	2288	1446	298	426	517
Arrive On Green	0.08	0.64	0.16	0.16	0.24	0.24
Sat Flow, veh/h	1792	3668	3003	601	1774	1599
Grp Volume(v), veh/h	232	579	310	307	128	117
Grp Sat Flow(s),veh/h/ln	1792	1787	1770	1741	1774	1599
Q Serve(g_s), s	6.0	7.0	15.5	15.7	5.9	5.3
Cycle Q Clear(g_c), s	6.0	7.0	15.5	15.7	5.9	5.3
Prop In Lane	1.00			0.34	1.00	1.00
Lane Grp Cap(c), veh/h	497	2288	879	865	426	517
V/C Ratio(X)	0.47	0.25	0.35	0.36	0.30	0.23
Avail Cap(c_a), veh/h	724	2288	879	865	426	517
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	11.4	7.7	27.5	27.6	31.1	24.7
Incr Delay (d2), s/veh	0.4	0.2	0.3	0.3	1.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	6.2	12.0	12.0	5.6	9.4
LnGrp Delay(d),s/veh	11.8	8.0	27.8	27.9	32.9	25.7
LnGrp LOS	B	A	C	C	C	C
Approach Vol, veh/h		811	617		245	
Approach Delay, s/veh		9.1	27.9		29.5	
Approach LOS		A	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		70.0		30.0	14.3	55.7		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		64.0		24.0	21.0	37.0		
Max Q Clear Time (g_c+I1), s		9.0		7.9	8.0	17.7		
Green Ext Time (p_c), s		6.4		1.0	0.4	5.0		

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	194	434	81	214	338	58
Future Volume (veh/h)	194	434	81	214	338	58
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1881	1845	1863	1884	1900
Adj Flow Rate, veh/h	204	457	85	225	413	0
Adj No. of Lanes	1	1	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	1121	1203	621	1323	610	275
Arrive On Green	0.99	0.99	0.05	0.71	0.17	0.00
Sat Flow, veh/h	1881	1564	1757	1863	3588	1615
Grp Volume(v), veh/h	204	457	85	225	413	0
Grp Sat Flow(s),veh/h/ln	1881	1564	1757	1863	1794	1615
Q Serve(g_s), s	0.1	0.2	1.7	4.0	10.8	0.0
Cycle Q Clear(g_c), s	0.1	0.2	1.7	4.0	10.8	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1121	1203	621	1323	610	275
V/C Ratio(X)	0.18	0.38	0.14	0.17	0.68	0.00
Avail Cap(c_a), veh/h	1121	1203	702	1323	1399	630
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	5.7	4.8	38.9	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.1	0.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.6	1.5	3.8	9.3	0.0
LnGrp Delay(d),s/veh	0.5	0.9	5.8	5.1	40.8	0.0
LnGrp LOS	A	A	A	A	D	
Approach Vol, veh/h	661			310	413	
Approach Delay, s/veh	0.8			5.3	40.8	
Approach LOS	A			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		77.0		23.0	11.4	65.6		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		49.0		39.0	10.0	33.0		
Max Q Clear Time (g_c+I1), s		6.0		12.8	3.7	2.2		
Green Ext Time (p_c), s		2.2		2.4	0.1	5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

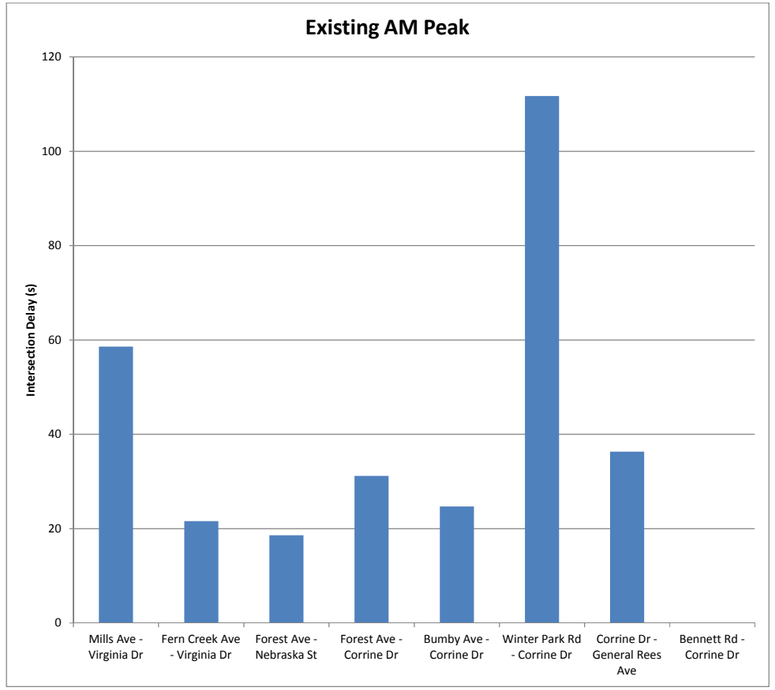
Notes
User approved volume balancing among the lanes for turning movement.

3-Lane Concept and Variation

AM Peak (7:30-8:30am)

Existing (2017)

		EB	WB	NB	SB	INT	Takeaway
Mills Ave - Virginia Dr	**LOS**	D	E	D	E	E	
	Delay	54.8	58.8	38.6	79.8	58.6	
	Queue	11.3	35.7	25.7	36.8	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Fern Creek Ave - Virginia Dr	**LOS**	A	C	D	C	C	
	Delay	8.2	20.3	47.0	31.3	21.6	
	Queue	9.8	34.0	14.4	1.1	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Nebraska St	**LOS**	D	D	A	B	B	
	Delay	49.8	38.1	9.9	15.7	18.6	
	Queue	10.5	0.8	8.8	22.9	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Corrine Dr	**LOS**	D	-	A	D	C	
	Delay	51.0	-	1.6	44.7	31.2	
	Queue	0.1	-	5.3	77.1	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bumby Ave - Corrine Dr	**LOS**	B	C	D	D	C	
	Delay	14.0	25.7	51.8	36.4	24.7	
	Queue	17.8	18.9	10.9	0.7	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Winter Park Rd - Corrine Dr	**LOS**	D	F	C	D	F	
	Delay	45.9	171.6	34.0	37.6	111.7	
	Queue	25.9	122.1	2.6	8.2	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Corrine Dr - General Rees Ave	**LOS**	A	B	-	F	D	
	Delay	4.6	12.7	-	118.0	36.3	
	Queue	4.7	22.0	-	53.9	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bennett Rd - Corrine Dr	**LOS**	A	B	D	-	B	
	Delay	4.6	12.9	37.6	-	19.9	
	Queue	7.5	7.6	21.6	-	-	
Corridor Total Travel Time	**EB = 6.4 Minutes**						Takeaway
	WB = 29.8 minutes						

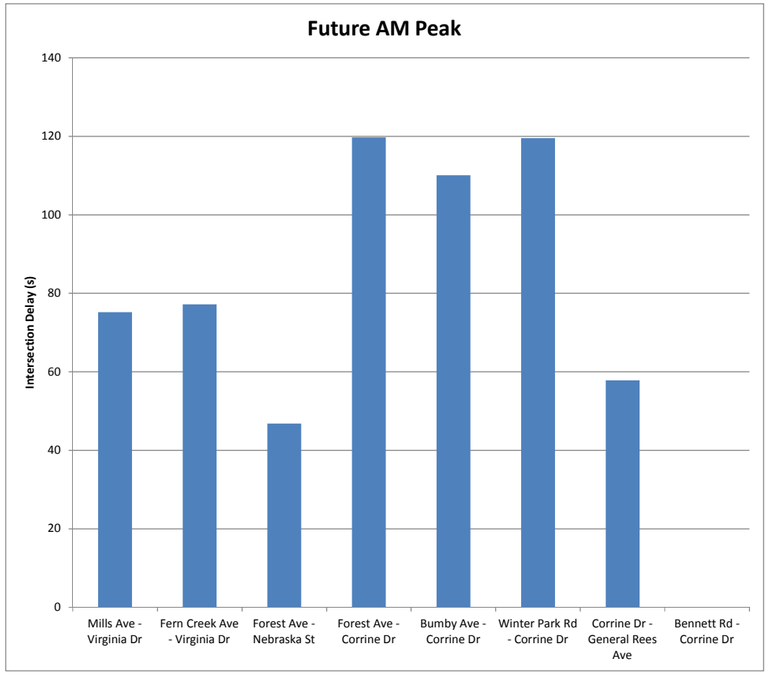


	Travel Time Existing	Future (20
EB		
Mills	61.7	64.6
Fern Creek	38.7	41.5
Nebraska	60.7	63.3
Leu Gardens	17.4	17.7
Bumby	43.6	69.0
Winter Park	49.2	62.0
General Rees	46.4	49.0
Bennett	66.4	65.5
Total (seconds)	**384.1**	**432.6**
Total (minutes)	**6.4**	**7.2**
WB		
Bennett	164.7	502.4
General Rees	968.0	1377.9
Winter Park	306.3	344.1
Bumby	145.6	683.1
Leu Gardens	32.2	32.5
Nebraska	24.9	27.4
Fern Creek	59.2	312.1
Mills	88.0	154.0
Total (seconds)	**1788.9**	**3433.5**
Total (minutes)	**29.8**	**57.2**

AM Peak (7:30-8:30am)

Future Year (2040)

		EB	WB	NB	SB	INT	Takeaway
Mills Ave - Virginia Dr	**LOS**	E	F	E	E	E	
	Delay	71.1	86.2	71.9	69.1	75.2	
	Queue	15.5	78.6	43.7	47.7	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Fern Creek Ave - Virginia Dr	**LOS**	B	F	E	C	E	
	Delay	10.9	107.3	73.0	29.6	77.2	
	Queue	14.3	118.2	22.1	1.4	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Nebraska St	**LOS**	F	D	B	D	D	
	Delay	97.8	39.3	13.3	48.4	46.8	
	Queue	22.1	1.1	13.1	72.9	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Corrine Dr	**LOS**	D	-	A	F	F	
	Delay	51.0	-	2.0	174.9	119.7	
	Queue	0.1	-	8.7	167.2	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bumby Ave - Corrine Dr	**LOS**	C	F	E	C	F	
	Delay	22.4	156.4	75.1	33.4	110.1	
	Queue	27.7	157.5	17.2	1.1	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Winter Park Rd - Corrine Dr	**LOS**	B	F	D	E	F	
	Delay	10.8	205.1	46.7	74.0	119.5	
	Queue	17.3	144.2	10.5	14.4	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Corrine Dr - General Rees Ave	**LOS**	B	D	-	F	E	
	Delay	10.3	39.7	-	157.9	57.8	
	Queue	11.7	21.7	-	70.1	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bennett Rd - Corrine Dr	**LOS**	B	C	D	-	C	
	Delay	18.8	21.1	36.4	-	26.2	
	Queue	17.9	10.8	26.2	-	-	
Corridor Total Travel Time	**EB = 7.2 Minutes**						Takeaway
	WB = 57.2 Minutes						



1: Mills Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.1	0.3	0.2	0.5
Total Delay (hr)	4.6	11.5	12.6	14.6	43.2
Travel Time (hr)	5.6	14.7	15.9	18.0	54.2
Avg Speed (mph)	5	6	6	6	6

2: Fern Creek Ave & Virginia Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.2	0.0	0.0	0.2
Total Delay (hr)	1.1	3.9	3.1	0.2	8.3
Travel Time (hr)	3.0	10.7	4.0	0.3	17.9
Avg Speed (mph)	21	21	5	8	17

3: Forest Ave & Nebraska St Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.9	0.2	1.0	1.9	5.0
Travel Time (hr)	2.6	0.2	2.1	4.6	9.5
Avg Speed (mph)	6	3	16	15	13

4: Forest Ave & Corrine Dr Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.1	0.5	0.5
Travel Time (hr)	0.0	1.2	3.4	4.6
Avg Speed (mph)	12	27	26	26

5: Bumby Ave & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	8.2	0.0	0.3	8.6
Total Delay (hr)	3.5	28.2	1.6	16.8	50.0
Travel Time (hr)	5.8	48.0	2.4	17.1	73.3
Avg Speed (mph)	13	10	8	0	8

6: Winter Park Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	15.2	0.1	0.2	15.4
Total Delay (hr)	3.6	58.0	0.8	2.6	65.0
Travel Time (hr)	11.2	84.8	1.2	4.1	101.4
Avg Speed (mph)	23	6	7	7	8

7: Corrine Dr & General Rees Ave Performance by approach

Approach	EB	WB	SB	All
Denied Delay (hr)	0.0	60.6	0.2	60.8
Total Delay (hr)	2.4	59.9	6.7	69.0
Travel Time (hr)	10.5	127.3	9.3	147.1
Avg Speed (mph)	26	3	7	6

8: Bennett Rd & Corrine Dr Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	6.3	15.6	21.9
Total Delay (hr)	2.0	6.8	27.6	36.4
Travel Time (hr)	10.4	13.7	46.5	70.6
Avg Speed (mph)	19	2	3	7

Total Network Performance

Denied Delay (hr)	107.5
Total Delay (hr)	284.9
Travel Time (hr)	536.5
Avg Speed (mph)	10

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	52.1	61.7	0.1	5
	29	4.1	14.9	0.1	23
Fern Creek Ave	2	9.3	23.8	0.1	22
	13	3.4	38.7	0.3	28
Total		68.9	139.1	0.6	16

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	15.3	41.8	0.3	26
	29	8.9	26.1	0.1	20
Mills Ave	1	51.0	61.9	0.1	6
	24	2.2	13.1	0.1	23
Total		77.4	142.9	0.6	16

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.6	6.6	0.0	27
Nebraska St	3	7.1	15.4	0.1	18
	22	1.5	10.3	0.1	25
Corrine Dr	4	0.5	7.1	0.1	28
	9	0.7	10.5	0.1	29
Total		10.4	49.9	0.3	24

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	1.5	11.4	0.1	26
	22	1.1	7.8	0.1	25
Nebraska St	3	8.6	17.1	0.1	15
	19	1.7	11.1	0.1	25
	13	0.4	6.3	0.0	28
Total		13.3	53.7	0.3	23

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	6.8	15.4	0.1	14
	9	0.2	3.5	0.1	85
Bumby Ave	5	20.1	33.2	0.1	14
Winter Park Rd	6	14.5	49.2	0.3	25
General Rees Ave	7	7.8	46.4	0.4	30
Bennett Rd	8	20.4	66.4	0.4	20
Total		69.9	214.2	1.4	23

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	87.2	164.7	0.1	2
General Rees Ave	7	260.2	968.0	0.4	4
Winter Park Rd	6	184.0	306.3	0.4	6
Bumby Ave	5	81.9	145.6	0.3	11
	9	3.4	19.0	0.1	25
Corrine Dr	4	0.4	13.2	0.1	23
Total		617.1	1616.8	1.4	7

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

09/28/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	248	71	248	502	342	84	920	90	113	895	80
Future Volume (veh/h)	54	248	71	248	502	342	84	920	90	113	895	80
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.97
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	1900	1859	1900	1863	1881	1863	1792	1863	1863	1900	1848	1900
Adj Flow Rate, veh/h	61	279	80	279	564	384	94	1034	101	127	1006	90
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	1	2	6	2	2	0	3	3
Cap, veh/h	113	605	170	412	609	510	271	1556	685	170	1062	95
Arrive On Green	0.03	0.22	0.22	0.13	0.32	0.32	0.16	0.44	0.44	0.05	0.33	0.33
Sat Flow, veh/h	1810	2719	764	1774	1881	1576	1707	3539	1558	3510	3251	291
Grp Volume(v), veh/h	61	179	180	279	564	384	94	1034	101	127	543	553
Grp Sat Flow(s),veh/h/ln	1810	1766	1718	1774	1881	1576	1707	1770	1558	1755	1755	1786
Q Serve(g_s), s	4.2	14.1	14.5	18.9	46.3	34.8	7.8	37.0	6.2	5.7	48.3	48.3
Cycle Q Clear(g_c), s	4.2	14.1	14.5	18.9	46.3	34.8	7.8	37.0	6.2	5.7	48.3	48.3
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	113	393	382	412	609	510	271	1556	685	170	573	584
V/C Ratio(X)	0.54	0.46	0.47	0.68	0.93	0.75	0.35	0.66	0.15	0.75	0.95	0.95
Avail Cap(c_a), veh/h	113	439	427	426	674	564	271	1556	685	206	654	665
HCM Platoon Ratio	1.00	1.00	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	49.9	53.8	54.0	39.3	52.2	48.3	59.9	35.5	26.9	75.2	52.5	52.5
Incr Delay (d2), s/veh	5.0	0.8	0.9	4.1	17.9	5.1	0.8	2.3	0.5	11.4	26.6	26.3
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(95%),veh/ln	4.0	11.3	11.3	14.8	35.7	22.4	6.8	25.7	5.0	5.5	36.2	36.8
LnGrp Delay(d),s/veh	54.9	54.7	54.9	43.4	70.1	53.5	60.7	37.8	27.3	86.5	79.1	78.9
LnGrp LOS	D	D	D	D	E	D	E	D	C	F	E	E
Approach Vol, veh/h		420			1227			1229			1223	
Approach Delay, s/veh		54.8			58.8			38.6			79.8	
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	31.8	58.7	11.0	58.5	13.7	76.7	27.2	42.3
Change Period (Y+Rc), s	* 6.4	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	* 13	* 60	* 4.2	57.3	9.4	* 63	22.3	39.8
Max Q Clear Time (g_c+I1), s	9.8	50.3	6.2	48.3	7.7	39.0	20.9	16.5
Green Ext Time (p_c), s	0.0	2.0	0.0	3.5	0.1	2.9	0.1	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	58.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	404	40	108	934	21	121	91	65	4	15	5
Future Volume (veh/h)	2	404	40	108	934	21	121	91	65	4	15	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1267	1881	1900	1900	1882	1900	1900	1892	1900	1900	1819	1900
Adj Flow Rate, veh/h	2	454	45	121	1049	24	136	102	73	4	17	6
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	50	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	148	1249	1049	580	1216	28	195	121	81	71	253	81
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	356	1881	1581	913	1832	42	660	557	373	135	1168	372
Grp Volume(v), veh/h	2	454	45	121	0	1073	311	0	0	27	0	0
Grp Sat Flow(s),veh/h/ln	356	1881	1581	913	0	1874	1591	0	0	1676	0	0
Q Serve(g_s), s	0.4	10.7	1.0	6.8	0.0	45.0	17.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	45.5	10.7	1.0	17.5	0.0	45.0	19.0	0.0	0.0	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.44		0.23	0.15		0.22
Lane Grp Cap(c), veh/h	148	1249	1049	580	0	1244	396	0	0	404	0	0
V/C Ratio(X)	0.01	0.36	0.04	0.21	0.00	0.86	0.79	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	148	1249	1049	580	0	1244	433	0	0	442	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.1	7.5	5.8	11.3	0.0	13.2	38.1	0.0	0.0	31.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.8	0.1	0.8	0.0	8.0	8.9	0.0	0.0	0.1	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(95%),veh/ln	0.1	9.8	0.8	3.3	0.0	34.0	14.4	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	31.3	8.3	5.9	12.1	0.0	21.3	47.0	0.0	0.0	31.3	0.0	0.0
LnGrp LOS	C	A	A	B		C	D			C		
Approach Vol, veh/h		501			1194			311			27	
Approach Delay, s/veh		8.2			20.3			47.0			31.3	
Approach LOS		A			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.4		27.6		72.4		27.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		64.0		24.0		64.0		24.0
Max Q Clear Time (g_c+I1), s		47.0		21.0		47.5		3.2
Green Ext Time (p_c), s		15.8		0.6		8.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	4	1	1	16	1	7	378	1	1	799	497
Future Volume (veh/h)	211	4	1	1	16	1	7	378	1	1	799	497
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	0.99		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	1900	1900	1900	1900	1900	1900	1863	1900	1900	1881	1881
Adj Flow Rate, veh/h	229	4	1	1	17	1	8	411	1	1	868	540
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	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	0	0	0	0	0	0	2	2	0	1	1
Cap, veh/h	269	412	103	48	94	5	185	1112	3	565	1126	956
Arrive On Green	0.15	0.28	0.28	0.05	0.05	0.05	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1774	1460	365	50	1717	98	388	1857	5	989	1881	1598
Grp Volume(v), veh/h	229	0	5	19	0	0	8	0	412	1	868	540
Grp Sat Flow(s),veh/h/ln	1774	0	1825	1865	0	0	388	0	1862	989	1881	1598
Q Serve(g_s), s	10.5	0.0	0.2	0.0	0.0	0.0	1.3	0.0	9.5	0.0	28.7	17.1
Cycle Q Clear(g_c), s	10.5	0.0	0.2	0.8	0.0	0.0	30.0	0.0	9.5	9.6	28.7	17.1
Prop In Lane	1.00		0.20	0.05		0.05	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	514	148	0	0	185	0	1114	565	1126	956
V/C Ratio(X)	0.85	0.00	0.01	0.13	0.00	0.00	0.04	0.00	0.37	0.00	0.77	0.56
Avail Cap(c_a), veh/h	333	0	874	445	0	0	185	0	1114	565	1126	956
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	21.6	37.7	0.0	0.0	23.7	0.0	8.6	11.1	12.5	10.2
Incr Delay (d2), s/veh	15.9	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.9	0.0	5.1	2.4
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(95%),veh/ln	10.5	0.0	0.2	0.8	0.0	0.0	0.3	0.0	8.8	0.0	22.9	12.7
LnGrp Delay(d),s/veh	50.4	0.0	21.6	38.1	0.0	0.0	24.1	0.0	9.6	11.1	17.6	12.6
LnGrp LOS	D		C	D			C		A	B	B	B
Approach Vol, veh/h		234			19			420			1409	
Approach Delay, s/veh		49.8			38.1			9.9			15.7	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		55.0		28.5		55.0	18.9	9.6
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		50.0		40.0		50.0	15.7	18.0
Max Q Clear Time (g_c+I1), s		32.0		2.2		30.7	12.5	2.8
Green Ext Time (p_c), s		2.5		0.0		8.9	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	1	4	591	1299	6
Future Volume (veh/h)	1	1	4	591	1299	6
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	1	4	649	1427	7
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	7	6	134	1636	1379	1172
Arrive On Green	0.00	0.00	0.07	0.86	0.73	0.73
Sat Flow, veh/h	1810	1615	1810	1900	1900	1615
Grp Volume(v), veh/h	1	1	4	649	1427	7
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1900	1900	1615
Q Serve(g_s), s	0.0	0.1	0.2	5.9	59.0	0.1
Cycle Q Clear(g_c), s	0.0	0.1	0.2	5.9	59.0	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	7	6	134	1636	1379	1172
V/C Ratio(X)	0.15	0.16	0.03	0.40	1.04	0.01
Avail Cap(c_a), veh/h	423	377	134	1636	1379	1172
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	40.4	40.4	35.0	1.2	11.2	3.1
Incr Delay (d2), s/veh	9.4	11.9	0.0	0.2	33.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.2	5.3	77.1	0.4
LnGrp Delay(d),s/veh	49.8	52.3	35.0	1.4	44.9	3.1
LnGrp LOS	D	D	C	A	F	A
Approach Vol, veh/h	2			653	1434	
Approach Delay, s/veh	51.0			1.6	44.7	
Approach LOS	D			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		75.0		6.3	11.0	64.0		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		7.9		2.1	2.2	61.0		
Green Ext Time (p_c), s		6.7		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	619	20	152	1316	1	50	0	144	11	3	13
Future Volume (veh/h)	1	619	20	152	1316	1	50	0	144	11	3	13
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.99		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	1900	1863	1900	1792	1881	1900	1900	1823	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	680	22	167	1446	1	55	0	158	12	3	14
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	6	1	1	0	0	0	0	0	0
Cap, veh/h	72	1140	967	445	1368	1	95	13	181	0	44	207
Arrive On Green	0.61	0.61	0.61	0.11	1.00	1.00	0.16	0.00	0.16	0.00	0.15	0.15
Sat Flow, veh/h	374	1863	1580	1707	1880	1	309	80	1120	0	291	1359
Grp Volume(v), veh/h	1	680	22	167	0	1447	213	0	0	0	0	17
Grp Sat Flow(s),veh/h/ln	374	1863	1580	1707	0	1881	1509	0	0	0	0	1650
Q Serve(g_s), s	0.0	22.3	0.5	3.6	0.0	72.8	10.9	0.0	0.0	0.0	0.0	0.9
Cycle Q Clear(g_c), s	61.2	22.3	0.5	3.6	0.0	72.8	13.9	0.0	0.0	0.0	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.00	0.26		0.74	0.00		0.82
Lane Grp Cap(c), veh/h	72	1140	967	445	0	1369	275	0	0	0	0	251
V/C Ratio(X)	0.01	0.60	0.02	0.38	0.00	1.06	0.77	0.00	0.00	0.00	0.00	0.07
Avail Cap(c_a), veh/h	72	1140	967	469	0	1369	301	0	0	0	0	478
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.0	11.8	7.6	8.7	0.0	0.0	40.8	0.0	0.0	0.0	0.0	36.3
Incr Delay (d2), s/veh	0.4	2.3	0.0	0.0	0.0	27.6	11.0	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.1	17.8	0.4	2.2	0.0	18.9	10.9	0.0	0.0	0.0	0.0	0.7
LnGrp Delay(d),s/veh	50.4	14.1	7.7	8.7	0.0	27.6	51.8	0.0	0.0	0.0	0.0	36.4
LnGrp LOS	D	B	A	A		F	D					D
Approach Vol, veh/h		703			1614			213			17	
Approach Delay, s/veh		14.0			25.7			51.8			36.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		78.8	0.0	21.2	11.6	67.2		21.2
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		60.0	5.0	18.0	7.0	47.0		* 29
Max Q Clear Time (g_c+I1), s		74.8	0.0	15.9	5.6	63.2		2.9
Green Ext Time (p_c), s		0.0	0.0	0.2	0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	627	25	13	1177	124	49	42	11	101	24	163
Future Volume (veh/h)	100	627	25	13	1177	124	49	42	11	101	24	163
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1810	1881	1638	1759	1863	1863	1667	1900	1900	1900	1900	1881
Adj Flow Rate, veh/h	108	674	27	14	1266	133	53	45	12	109	26	175
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	1	16	8	2	2	14	0	0	0	0	1
Cap, veh/h	141	791	573	308	931	774	311	259	69	354	349	293
Arrive On Green	0.01	0.14	0.14	0.12	0.50	0.50	0.04	0.18	0.18	0.04	0.18	0.18
Sat Flow, veh/h	1723	1881	1362	1675	1863	1549	1587	1438	383	1810	1900	1595
Grp Volume(v), veh/h	108	674	27	14	1266	133	53	0	57	109	26	175
Grp Sat Flow(s),veh/h/ln	1723	1881	1362	1675	1863	1549	1587	0	1821	1810	1900	1595
Q Serve(g_s), s	4.0	35.0	1.3	0.0	50.0	4.7	2.7	0.0	2.6	4.0	1.1	10.1
Cycle Q Clear(g_c), s	4.0	35.0	1.3	0.0	50.0	4.7	2.7	0.0	2.6	4.0	1.1	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	141	791	573	308	931	774	311	0	328	354	349	293
V/C Ratio(X)	0.77	0.85	0.05	0.05	1.36	0.17	0.17	0.00	0.17	0.31	0.07	0.60
Avail Cap(c_a), veh/h	141	941	681	308	931	774	317	0	328	354	349	293
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.42	0.42	0.42	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	40.0	13.7	35.1	25.0	13.7	31.8	0.0	34.7	32.9	33.8	37.4
Incr Delay (d2), s/veh	15.2	7.7	0.1	0.0	164.7	0.2	0.3	0.0	1.2	0.5	0.1	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(95%),veh/ln	4.5	25.9	0.9	0.6	122.1	3.6	2.2	0.0	2.6	1.2	1.1	8.2
LnGrp Delay(d),s/veh	42.6	47.7	13.8	35.2	189.7	13.9	32.0	0.0	35.9	33.4	33.9	40.7
LnGrp LOS	D	D	B	D	F	B	C		D	C	C	D
Approach Vol, veh/h		809			1413			110			310	
Approach Delay, s/veh		45.9			171.6			34.0			37.6	
Approach LOS		D			F			C			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	10.0	56.0	10.0	24.0	17.9	48.1	9.6	24.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	4.0	50.0	4.0	18.0	4.0	50.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	6.0	52.0	6.0	4.6	2.0	37.0	4.7	12.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	5.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	111.7
HCM 2010 LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	203	511	841	68	98	443
Future Volume (veh/h)	203	511	841	68	98	443
Number	5	2	6	16	7	14
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	1881	1881	1863	1845	1810	1863
Adj Flow Rate, veh/h	211	532	876	71	102	461
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	2	3	5	2
Cap, veh/h	356	1317	1061	893	310	396
Arrive On Green	0.14	1.00	0.76	0.76	0.18	0.18
Sat Flow, veh/h	1792	1881	1863	1568	1723	1583
Grp Volume(v), veh/h	211	532	876	71	102	461
Grp Sat Flow(s),veh/h/ln	1792	1881	1863	1568	1723	1583
Q Serve(g_s), s	4.8	0.0	30.4	1.2	5.2	18.0
Cycle Q Clear(g_c), s	4.8	0.0	30.4	1.2	5.2	18.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	356	1317	1061	893	310	396
V/C Ratio(X)	0.59	0.40	0.83	0.08	0.33	1.16
Avail Cap(c_a), veh/h	445	1317	1061	893	310	396
HCM Platoon Ratio	2.00	2.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.76	0.76	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	8.9	5.3	35.7	37.5
Incr Delay (d2), s/veh	0.9	0.7	4.4	0.0	2.8	98.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.5	22.0	0.9	4.9	53.9
LnGrp Delay(d),s/veh	14.2	0.7	13.3	5.4	38.6	135.5
LnGrp LOS	B	A	B	A	D	F
Approach Vol, veh/h		743	947		563	
Approach Delay, s/veh		4.6	12.7		118.0	
Approach LOS		A	B		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.0		24.0	13.0	63.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	12.0	52.0		
Max Q Clear Time (g_c+I1), s		2.0		20.0	6.8	32.4		
Green Ext Time (p_c), s		5.8		0.0	0.2	9.2		

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	225	336	79	263	502	119
Future Volume (veh/h)	225	336	79	263	502	119
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1863	1900	1900	1845	1845
Adj Flow Rate, veh/h	234	350	82	274	523	124
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	0	0	3	3
Cap, veh/h	810	1198	496	1034	590	526
Arrive On Green	0.72	0.72	0.05	0.54	0.34	0.34
Sat Flow, veh/h	1881	1549	1810	1900	1757	1568
Grp Volume(v), veh/h	234	350	82	274	523	124
Grp Sat Flow(s),veh/h/ln	1881	1549	1810	1900	1757	1568
Q Serve(g_s), s	4.4	4.2	2.4	7.7	28.2	5.7
Cycle Q Clear(g_c), s	4.4	4.2	2.4	7.7	28.2	5.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	810	1198	496	1034	590	526
V/C Ratio(X)	0.29	0.29	0.17	0.26	0.89	0.24
Avail Cap(c_a), veh/h	810	1198	507	1034	861	768
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	1.6	13.1	12.1	31.4	24.0
Incr Delay (d2), s/veh	0.3	0.2	0.2	0.6	9.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	7.5	2.1	7.6	21.6	9.7
LnGrp Delay(d),s/veh	8.9	1.8	13.2	12.8	40.7	24.3
LnGrp LOS	A	A	B	B	D	C
Approach Vol, veh/h	584			356	647	
Approach Delay, s/veh	4.6			12.9	37.6	
Approach LOS	A			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		60.4		39.6	11.4	49.1		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		39.0		49.0	6.0	27.0		
Max Q Clear Time (g_c+I1), s		9.7		30.2	4.4	6.4		
Green Ext Time (p_c), s		2.5		3.4	0.0	4.1		

Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	55.2	64.6	0.1	5
	29	4.9	15.8	0.1	22
Fern Creek Ave	2	11.1	25.7	0.1	20
	13	4.0	39.8	0.3	27
Total		75.3	146.0	0.6	15

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	100.4	294.4	0.3	8
	29	59.2	76.2	0.1	7
Mills Ave	1	66.2	77.8	0.1	5
	24	2.3	13.1	0.1	23
Total		228.2	461.4	0.6	8

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	0.8	6.8	0.0	26
Nebraska St	3	8.3	16.7	0.1	17
	22	1.7	10.5	0.1	25
Corrine Dr	4	0.7	7.2	0.1	27
	9	1.8	11.6	0.1	26
Total		13.3	52.8	0.3	23

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	1.7	11.7	0.1	26
	22	1.3	7.9	0.1	25
Nebraska St	3	10.9	19.5	0.1	13
	19	1.9	11.3	0.1	25
	13	0.5	6.4	0.0	28
Total		16.3	56.8	0.3	21

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	-	-	0.1	-
	9	-	-	0.1	-
Bumby Ave	5	41.8	57.4	0.1	8
Winter Park Rd	6	27.5	62.0	0.3	20
General Rees Ave	7	10.4	49.0	0.4	28
Bennett Rd	8	20.0	65.5	0.4	20
Total		99.7	233.9	1.4	21

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	113.9	502.4	0.1	2
General Rees Ave	7	360.0	1377.9	0.4	3
Winter Park Rd	6	180.0	344.1	0.4	6
Bumby Ave	5	120.5	683.1	0.3	8
	9	3.5	19.0	0.1	24
Corrine Dr	4	1.2	13.5	0.1	22
Total		779.0	2940.1	1.4	5

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

09/28/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Future Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.97
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	1900	1859	1900	1863	1881	1863	1792	1863	1863	1900	1848	1900
Adj Flow Rate, veh/h	82	375	107	375	758	517	127	1390	136	171	1353	121
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	1	2	6	2	2	0	3	3
Cap, veh/h	90	575	162	432	674	565	114	1420	625	339	1405	125
Arrive On Green	0.03	0.21	0.21	0.18	0.36	0.36	0.07	0.40	0.40	0.10	0.43	0.43
Sat Flow, veh/h	1810	2717	766	1774	1881	1577	1707	3539	1558	3510	3253	290
Grp Volume(v), veh/h	82	242	240	375	758	517	127	1390	136	171	727	747
Grp Sat Flow(s),veh/h/ln	1810	1766	1717	1774	1881	1577	1707	1770	1558	1755	1755	1787
Q Serve(g_s), s	4.0	20.0	20.5	25.8	57.3	39.7	10.7	61.9	6.0	7.4	64.3	65.3
Cycle Q Clear(g_c), s	4.0	20.0	20.5	25.8	57.3	39.7	10.7	61.9	6.0	7.4	64.3	65.3
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	90	373	363	432	674	565	114	1420	625	339	758	772
V/C Ratio(X)	0.91	0.65	0.66	0.87	1.13	0.92	1.11	0.98	0.22	0.50	0.96	0.97
Avail Cap(c_a), veh/h	90	373	363	453	674	565	114	1425	627	339	758	772
HCM Platoon Ratio	1.00	1.00	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	60.2	57.6	57.8	39.3	51.3	30.8	74.7	47.2	13.3	68.6	44.1	44.4
Incr Delay (d2), s/veh	65.5	3.9	4.4	15.8	74.5	19.7	117.7	19.3	0.8	1.2	24.2	25.4
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(95%),veh/ln	5.9	15.5	15.4	20.7	78.6	27.8	15.8	43.7	4.8	6.6	46.1	47.7
LnGrp Delay(d),s/veh	125.8	61.5	62.2	55.1	125.8	50.6	192.3	66.5	14.1	69.8	68.3	69.8
LnGrp LOS	F	E	E	E	F	D	F	E	B	E	E	E
Approach Vol, veh/h		564			1650			1653			1645	
Approach Delay, s/veh		71.2			86.2			71.9			69.1	
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	17.0	75.7	10.8	64.0	22.1	70.6	34.3	40.5
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	* 6.4	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	10.7	* 62	* 4	57.3	* 8.4	* 64	30.0	31.9
Max Q Clear Time (g_c+I1), s	12.7	67.3	6.0	59.3	9.4	63.9	27.8	22.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Future Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1267	1881	1900	1900	1882	1900	1900	1892	1900	1900	1819	1900
Adj Flow Rate, veh/h	3	610	61	163	1411	31	183	137	98	6	22	8
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	50	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	72	1204	1012	436	1174	26	217	127	89	81	263	86
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	251	1881	1581	779	1834	40	690	528	373	162	1094	359
Grp Volume(v), veh/h	3	610	61	163	0	1442	418	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	251	1881	1581	779	0	1874	1591	0	0	1615	0	0
Q Serve(g_s), s	0.0	17.3	1.4	14.1	0.0	64.0	22.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	64.0	17.3	1.4	31.4	0.0	64.0	24.0	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.44		0.23	0.17		0.22
Lane Grp Cap(c), veh/h	72	1204	1012	436	0	1200	433	0	0	430	0	0
V/C Ratio(X)	0.04	0.51	0.06	0.37	0.00	1.20	0.96	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	72	1204	1012	436	0	1200	433	0	0	430	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.0	9.6	6.7	17.9	0.0	18.0	38.9	0.0	0.0	29.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	1.5	0.1	2.4	0.0	99.1	34.0	0.0	0.0	0.1	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(95%),veh/ln	0.2	14.3	1.2	6.0	0.0	118.2	22.1	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	51.1	11.1	6.9	20.4	0.0	117.1	73.0	0.0	0.0	29.6	0.0	0.0
LnGrp LOS	D	B	A	C		F	E			C		
Approach Vol, veh/h		674			1605			418			36	
Approach Delay, s/veh		10.9			107.3			73.0			29.6	
Approach LOS		B			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		64.0		24.0		64.0		24.0
Max Q Clear Time (g_c+I1), s		66.0		26.0		66.0		3.6
Green Ext Time (p_c), s		0.0		0.0		0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	77.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
Future Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
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	0.99		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	1900	1900	1900	1900	1900	1900	1863	1900	1900	1881	1881
Adj Flow Rate, veh/h	309	5	1	1	24	1	10	552	1	1	1168	726
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	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	0	0	0	0	0	0	2	2	0	1	1
Cap, veh/h	297	466	93	45	116	5	82	1081	2	433	1094	929
Arrive On Green	0.17	0.30	0.30	0.07	0.07	0.07	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	1774	1531	306	31	1774	72	243	1859	3	869	1881	1598
Grp Volume(v), veh/h	309	0	6	26	0	0	10	0	553	1	1168	726
Grp Sat Flow(s),veh/h/ln	1774	0	1838	1877	0	0	243	0	1862	869	1881	1598
Q Serve(g_s), s	14.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	15.5	0.1	51.0	30.6
Cycle Q Clear(g_c), s	14.7	0.0	0.2	1.1	0.0	0.0	51.0	0.0	15.5	15.6	51.0	30.6
Prop In Lane	1.00		0.17	0.04		0.04	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	0	560	165	0	0	82	0	1083	433	1094	929
V/C Ratio(X)	1.04	0.00	0.01	0.16	0.00	0.00	0.12	0.00	0.51	0.00	1.07	0.78
Avail Cap(c_a), veh/h	297	0	817	426	0	0	82	0	1083	433	1094	929
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	21.3	38.9	0.0	0.0	43.9	0.0	10.9	15.6	18.4	14.1
Incr Delay (d2), s/veh	62.8	0.0	0.0	0.4	0.0	0.0	3.0	0.0	1.7	0.0	47.3	6.5
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(95%),veh/ln	22.1	0.0	0.2	1.1	0.0	0.0	0.6	0.0	13.1	0.0	72.9	21.3
LnGrp Delay(d),s/veh	99.3	0.0	21.3	39.3	0.0	0.0	46.9	0.0	12.7	15.6	65.7	20.6
LnGrp LOS	F		C	D			D		B	B	F	C
Approach Vol, veh/h		315			26			563			1895	
Approach Delay, s/veh		97.8			39.3			13.3			48.4	
Approach LOS		F			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		56.0		31.7		56.0	21.0	10.7
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		51.0		39.0		51.0	14.7	18.0
Max Q Clear Time (g_c+I1), s		53.0		2.2		53.0	16.7	3.1
Green Ext Time (p_c), s		0.0		0.0		0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	1	5	795	1700	8
Future Volume (veh/h)	1	1	5	795	1700	8
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	1	5	874	1868	9
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	7	6	134	1636	1379	1172
Arrive On Green	0.00	0.00	0.07	0.86	0.73	0.73
Sat Flow, veh/h	1810	1615	1810	1900	1900	1615
Grp Volume(v), veh/h	1	1	5	874	1868	9
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1900	1900	1615
Q Serve(g_s), s	0.0	0.1	0.2	9.6	59.0	0.1
Cycle Q Clear(g_c), s	0.0	0.1	0.2	9.6	59.0	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	7	6	134	1636	1379	1172
V/C Ratio(X)	0.15	0.16	0.04	0.53	1.35	0.01
Avail Cap(c_a), veh/h	423	377	134	1636	1379	1172
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	40.4	40.4	35.0	1.5	11.2	3.1
Incr Delay (d2), s/veh	9.4	11.9	0.0	0.4	164.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.2	8.7	167.2	0.5
LnGrp Delay(d),s/veh	49.8	52.3	35.0	1.8	175.7	3.1
LnGrp LOS	D	D	D	A	F	A
Approach Vol, veh/h	2			879	1877	
Approach Delay, s/veh	51.0			2.0	174.9	
Approach LOS	D			A	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		75.0		6.3	11.0	64.0		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		11.6		2.1	2.2	61.0		
Green Ext Time (p_c), s		11.1		0.0	0.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	119.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Future Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1900	1863	1900	1792	1881	1900	1900	1829	1900	1900	1900	1900
Adj Flow Rate, veh/h	5	852	60	205	1808	1	115	0	195	15	4	22
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	6	1	1	0	0	0	0	0	0
Cap, veh/h	72	1066	904	312	1316	1	146	7	177	0	48	265
Arrive On Green	0.57	0.57	0.57	0.09	0.93	0.93	0.19	0.00	0.19	0.00	0.19	0.19
Sat Flow, veh/h	264	1863	1580	1707	1880	1	511	38	930	0	253	1392
Grp Volume(v), veh/h	5	852	60	205	0	1809	310	0	0	0	0	26
Grp Sat Flow(s),veh/h/ln	264	1863	1580	1707	0	1881	1479	0	0	0	0	1646
Q Serve(g_s), s	0.0	36.1	1.7	4.7	0.0	70.0	17.7	0.0	0.0	0.0	0.0	1.3
Cycle Q Clear(g_c), s	57.2	36.1	1.7	4.7	0.0	70.0	19.0	0.0	0.0	0.0	0.0	1.3
Prop In Lane	1.00		1.00	1.00		0.00	0.37		0.63	0.00		0.85
Lane Grp Cap(c), veh/h	72	1066	904	312	0	1317	330	0	0	0	0	313
V/C Ratio(X)	0.07	0.80	0.07	0.66	0.00	1.37	0.94	0.00	0.00	0.00	0.00	0.08
Avail Cap(c_a), veh/h	72	1066	904	333	0	1317	330	0	0	0	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.0	16.9	9.5	17.2	0.0	3.5	41.3	0.0	0.0	0.0	0.0	33.3
Incr Delay (d2), s/veh	1.9	6.3	0.1	0.4	0.0	168.7	33.8	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.3	27.7	1.4	4.1	0.0	157.5	17.2	0.0	0.0	0.0	0.0	1.1
LnGrp Delay(d),s/veh	51.9	23.2	9.7	17.6	0.0	172.2	75.1	0.0	0.0	0.0	0.0	33.4
LnGrp LOS	D	C	A	B		F	E					C
Approach Vol, veh/h		917			2014			310			26	
Approach Delay, s/veh		22.4			156.4			75.1			33.4	
Approach LOS		C			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		76.0	0.0	24.0	12.8	63.2		24.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		5.0
Max Green Setting (Gmax), s		58.0	6.0	19.0	8.0	44.0		31.0
Max Q Clear Time (g_c+I1), s		72.0	0.0	21.0	6.7	59.2		3.3
Green Ext Time (p_c), s		0.0	0.0	0.0	0.1	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	110.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Future Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1810	1881	1638	1759	1863	1863	1667	1900	1900	1900	1900	1881
Adj Flow Rate, veh/h	116	813	91	183	1398	165	81	56	151	133	32	220
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	1	16	8	2	2	14	0	0	0	0	1
Cap, veh/h	141	842	610	246	933	776	321	80	217	165	259	217
Arrive On Green	0.08	0.90	0.90	0.09	0.50	0.50	0.08	0.18	0.18	0.04	0.14	0.14
Sat Flow, veh/h	1723	1881	1362	1675	1863	1549	1587	447	1205	1810	1900	1593
Grp Volume(v), veh/h	116	813	91	183	1398	165	81	0	207	133	32	220
Grp Sat Flow(s),veh/h/ln	1723	1881	1362	1675	1863	1549	1587	0	1651	1810	1900	1593
Q Serve(g_s), s	4.0	33.3	0.8	5.1	50.1	4.1	0.0	0.0	11.8	2.0	1.5	11.1
Cycle Q Clear(g_c), s	4.0	33.3	0.8	5.1	50.1	4.1	0.0	0.0	11.8	2.0	1.5	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	141	842	610	246	933	776	321	0	297	165	259	217
V/C Ratio(X)	0.82	0.97	0.15	0.74	1.50	0.21	0.25	0.00	0.70	0.81	0.12	1.01
Avail Cap(c_a), veh/h	141	903	654	246	933	776	321	0	297	167	342	287
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)	0.09	0.09	0.09	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	4.6	2.9	42.0	25.0	6.5	34.8	0.0	38.4	46.3	38.0	28.7
Incr Delay (d2), s/veh	3.7	4.2	0.0	1.1	224.7	0.1	0.4	0.0	12.7	24.4	0.2	52.5
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	0.1
%ile BackOfQ(95%),veh/ln	2.9	17.3	0.5	6.0	144.2	2.4	3.5	0.0	10.5	8.3	1.4	14.4
LnGrp Delay(d),s/veh	30.2	8.9	3.0	43.1	249.7	6.5	35.2	0.0	51.1	70.6	38.2	81.3
LnGrp LOS	C	A	A	D	F	A	D		D	E	D	F
Approach Vol, veh/h		1020			1746			288			385	
Approach Delay, s/veh		10.8			205.1			46.7			74.0	
Approach LOS		B			F			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	10.0	56.1	9.9	24.0	16.8	49.3	14.3	19.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	4.0	50.0	4.0	18.0	6.0	48.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	6.0	52.1	4.0	13.8	7.1	35.3	2.0	13.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	6.5	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	119.5
HCM 2010 LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	280	700	1034	84	121	545
Future Volume (veh/h)	280	700	1034	84	121	545
Number	5	2	6	16	7	14
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	1881	1881	1863	1845	1810	1863
Adj Flow Rate, veh/h	292	729	1077	88	126	568
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	2	3	5	2
Cap, veh/h	324	1317	1011	851	310	439
Arrive On Green	0.13	0.93	1.00	1.00	0.18	0.18
Sat Flow, veh/h	1792	1881	1863	1568	1723	1583
Grp Volume(v), veh/h	292	729	1077	88	126	568
Grp Sat Flow(s),veh/h/ln	1792	1881	1863	1568	1723	1583
Q Serve(g_s), s	7.5	5.5	54.3	0.0	6.5	18.0
Cycle Q Clear(g_c), s	7.5	5.5	54.3	0.0	6.5	18.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	324	1317	1011	851	310	439
V/C Ratio(X)	0.90	0.55	1.07	0.10	0.41	1.29
Avail Cap(c_a), veh/h	364	1317	1011	851	310	439
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.67	0.67	1.00	1.00
Uniform Delay (d), s/veh	21.1	1.2	0.0	0.0	36.3	36.1
Incr Delay (d2), s/veh	10.3	0.6	43.0	0.1	3.9	147.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	4.3	21.7	0.0	6.2	70.1
LnGrp Delay(d),s/veh	31.4	1.9	43.0	0.1	40.2	184.0
LnGrp LOS	C	A	F	A	D	F
Approach Vol, veh/h		1021	1165		694	
Approach Delay, s/veh		10.3	39.7		157.9	
Approach LOS		B	D		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.0		24.0	15.7	60.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	12.0	52.0		
Max Q Clear Time (g_c+I1), s		7.5		20.0	9.5	56.3		
Green Ext Time (p_c), s		9.4		0.0	0.2	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	57.8
HCM 2010 LOS	E

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	300	440	97	340	617	146
Future Volume (veh/h)	300	440	97	340	617	146
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1863	1900	1900	1845	1845
Adj Flow Rate, veh/h	312	458	101	354	643	152
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	0	0	3	3
Cap, veh/h	422	985	464	906	708	632
Arrive On Green	0.37	0.37	0.19	0.48	0.40	0.40
Sat Flow, veh/h	1881	1546	1810	1900	1757	1568
Grp Volume(v), veh/h	312	458	101	354	643	152
Grp Sat Flow(s),veh/h/ln	1881	1546	1810	1900	1757	1568
Q Serve(g_s), s	14.3	17.6	0.0	12.0	34.5	6.4
Cycle Q Clear(g_c), s	14.3	17.6	0.0	12.0	34.5	6.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	422	985	464	906	708	632
V/C Ratio(X)	0.74	0.47	0.22	0.39	0.91	0.24
Avail Cap(c_a), veh/h	489	1040	464	906	878	784
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	8.2	31.3	16.8	28.1	19.7
Incr Delay (d2), s/veh	4.8	0.4	0.2	1.3	12.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.1	17.9	4.1	10.8	26.2	11.0
LnGrp Delay(d),s/veh	33.6	8.7	31.5	18.1	40.3	20.0
LnGrp LOS	C	A	C	B	D	C
Approach Vol, veh/h	770			455	795	
Approach Delay, s/veh	18.8			21.1	36.4	
Approach LOS	B			C	D	

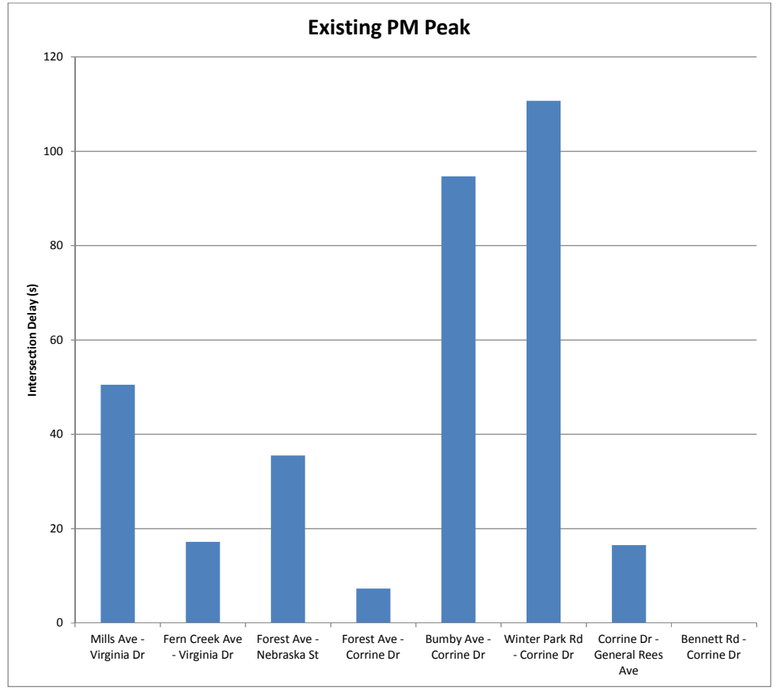
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		53.7		46.3	25.3	28.4		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		38.0		50.0	6.0	26.0		
Max Q Clear Time (g_c+I1), s		14.0		36.5	2.0	19.6		
Green Ext Time (p_c), s		3.2		3.8	0.1	2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

PM Peak (5:00-6:00pm)

Existing (2017)

		EB	WB	NB	SB	INT	Takeaway
Mills Ave - Virginia Dr	**LOS**	F	E	C	D	D	
	Delay	88.1	74.9	31.0	40.2	50.5	
	Queue	20.6	23.2	20.5	28.7	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Fern Creek Ave - Virginia Dr	**LOS**	B	A	D	C	B	
	Delay	11.9	9.6	45.2	33.7	17.2	
	Queue	21.1	11.2	13.0	4.0	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Nebraska St	**LOS**	E	D	D	B	D	
	Delay	56.4	38.4	40.6	17.1	35.5	
	Queue	19.9	0.4	33.0	13.3	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Corrine Dr	**LOS**	C	-	A	A	A	
	Delay	33.2	-	6.8	7.8	7.3	
	Queue	0.4	-	20.7	13.0	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bumby Ave - Corrine Dr	**LOS**	F	C	F	C	F	
	Delay	134.3	27.5	119.2	33.8	94.7	
	Queue	120.1	16.5	29.0	0.3	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Winter Park Rd - Corrine Dr	**LOS**	F	D	D	D	F	
	Delay	172.5	36.3	37.5	52.5	110.7	
	Queue	132.7	28.6	4.9	10.2	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Corrine Dr - General Rees Ave	**LOS**	A	C	-	C	B	
	Delay	5.9	33.9	-	26.6	16.5	
	Queue	9.9	23.3	-	12.9	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bennett Rd - Corrine Dr	**LOS**	C	B	D	-	C	
	Delay	27.4	15.6	41.5	-	28.3	
	Queue	26.6	7.4	17.5	-	-	
							Takeaway
Corridor Total Travel Time	**EB = 23.8 Minutes**						
	WB = 7.1 Minutes						

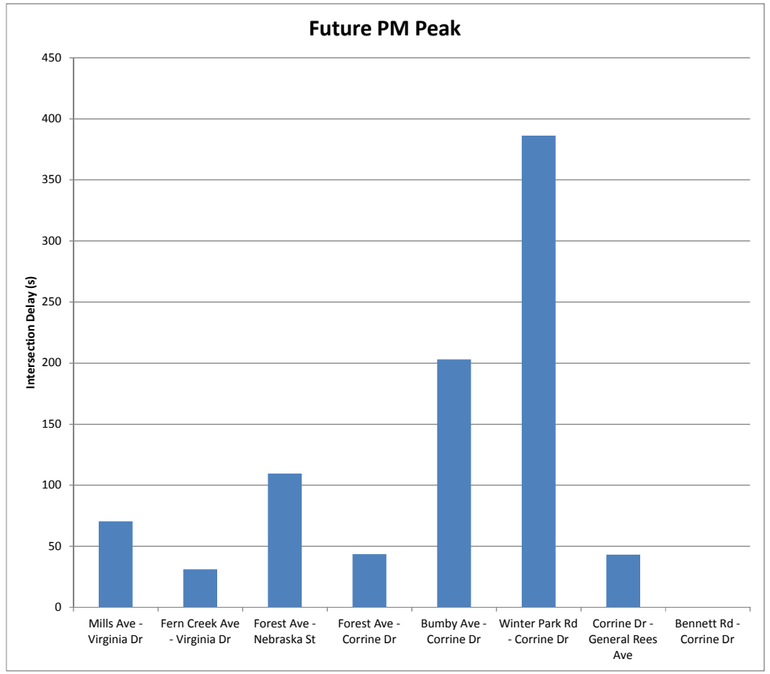


	Travel Time Existing	Future (20
EB		
Mills	142.5	288.0
Fern Creek	206.5	444.7
Nebraska	361.8	592.7
Leu Gardens	107.2	165.2
Bumby	426.0	709.8
Winter Park	59.5	232.9
General Rees	51.9	47.6
Bennett	71.7	68.6
Total (seconds)	**1427.1**	**2549.5**
Total (minutes)	**23.8**	**42.5**
WB		
Bennett	23.8	575.2
General Rees	74.2	354.9
Winter Park	58.7	318.4
Bumby	62.3	46.0
Leu Gardens	32.0	31.2
Nebraska	28.2	27.6
Fern Creek	55.8	57.2
Mills	89.5	73.7
Total (seconds)	**424.5**	**1484.2**
Total (minutes)	**7.1**	**24.7**

PM Peak (5:00-6:00pm)

Future Year (2040)

		EB	WB	NB	SB	INT	Takeaway
Mills Ave - Virginia Dr	**LOS**	F	F	D	E	E	
	Delay	91.3	88.0	51.4	69.4	70.4	
	Queue	28.0	32.3	35.4	56.3	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Fern Creek Ave - Virginia Dr	**LOS**	C	B	F	C	C	
	Delay	24.7	16.4	82.7	33.6	31.2	
	Queue	40.1	16.7	21.5	5.4	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Nebraska St	**LOS**	F	D	F	C	F	
	Delay	188.8	37.9	146.8	20.6	109.5	
	Queue	55.6	0.5	98.3	19.5	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Forest Ave - Corrine Dr	**LOS**	D	-	E	B	D	
	Delay	42.2	-	63.2	10.7	43.7	
	Queue	1.2	-	106.1	22.3	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bumby Ave - Corrine Dr	**LOS**	F	D	F	C	F	
	Delay	302.4	45.1	212.9	31.4	203.0	
	Queue	211.7	24.1	50.6	0.4	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Winter Park Rd - Corrine Dr	**LOS**	F	F	D	E	F	
	Delay	612.3	178.5	38.9	56.0	386.2	
	Queue	245.6	91.4	6.1	13.5	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Corrine Dr - General Rees Ave	**LOS**	D	D	-	C	D	
	Delay	47.6	40.2	-	30.8	43.1	
	Queue	39.2	31.8	-	15.5	-	
		EB	**WB**	**NB**	**SB**	**INT**	Takeaway
Bennett Rd - Corrine Dr	**LOS**	C	C	D	-	C	
	Delay	24.9	20.6	41.0	-	27.9	
	Queue	28.5	10.2	21.4	-	-	
							Takeaway
Corridor Total Travel Time	**EB = 42.5 Minutes**						
	WB = 24.7 Minutes						



Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	133.3	142.5	0.1	2
	29	48.2	58.7	0.1	6
Fern Creek Ave	2	108.3	147.8	0.1	4
	13	199.8	233.4	0.3	5
Total		489.7	582.4	0.6	4

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	11.0	38.5	0.3	28
	29	3.9	21.0	0.1	24
Mills Ave	1	57.7	68.5	0.1	5
	24	2.4	13.3	0.1	23
Total		75.0	141.4	0.6	16

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	44.0	50.0	0.0	4
Nebraska St	3	70.1	78.4	0.1	4
	22	36.9	45.7	0.1	6
Corrine Dr	4	38.7	61.5	0.1	4
	9	49.0	58.6	0.1	5
Total		238.7	294.2	0.3	4

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	2.2	12.1	0.1	25
	22	1.0	7.7	0.1	25
Nebraska St	3	11.9	20.5	0.1	13
	19	1.7	11.1	0.1	25
	13	0.4	6.2	0.0	28
Total		17.3	57.6	0.3	21

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	14.6	22.9	0.1	9
	9	16.8	21.9	0.1	14
Bumby Ave	5	86.7	367.4	0.1	5
Winter Park Rd	6	24.9	59.5	0.3	21
General Rees Ave	7	12.9	51.9	0.4	27
Bennett Rd	8	24.4	71.7	0.4	18
Total		180.3	595.4	1.4	15

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	16.5	23.8	0.1	8
General Rees Ave	7	37.0	74.2	0.4	17
Winter Park Rd	6	19.9	58.7	0.4	24
Bumby Ave	5	27.2	62.3	0.3	20
	9	2.8	18.3	0.1	25
Corrine Dr	4	1.1	13.7	0.1	22
Total		104.6	251.0	1.4	20

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

09/29/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	445	100	87	304	205	101	910	153	299	1176	57
Future Volume (veh/h)	93	445	100	87	304	205	101	910	153	299	1176	57
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.99	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	1881	1900	1900	1863	1881	1881	1900	1881	1900	1845	1882	1900
Adj Flow Rate, veh/h	94	449	101	88	307	207	102	919	155	302	1188	58
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	0	0	2	1	1	0	1	0	3	1	1
Cap, veh/h	113	520	116	126	343	289	121	1933	861	346	1991	97
Arrive On Green	0.03	0.18	0.18	0.04	0.18	0.18	0.07	0.54	0.54	0.10	0.57	0.57
Sat Flow, veh/h	1792	2921	652	1774	1881	1586	1810	3574	1592	3408	3470	169
Grp Volume(v), veh/h	94	276	274	88	307	207	102	919	155	302	612	634
Grp Sat Flow(s),veh/h/ln	1792	1805	1767	1774	1881	1586	1810	1787	1592	1704	1788	1852
Q Serve(g_s), s	3.6	26.7	27.1	2.3	28.7	17.4	10.0	28.6	6.8	15.7	39.9	40.0
Cycle Q Clear(g_c), s	3.6	26.7	27.1	2.3	28.7	17.4	10.0	28.6	6.8	15.7	39.9	40.0
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	113	322	315	126	343	289	121	1933	861	346	1026	1062
V/C Ratio(X)	0.83	0.86	0.87	0.70	0.90	0.72	0.84	0.48	0.18	0.87	0.60	0.60
Avail Cap(c_a), veh/h	152	438	429	160	453	381	188	1933	861	454	1026	1062
HCM Platoon Ratio	1.00	1.00	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	84.8	71.8	71.9	83.3	71.9	43.2	83.0	25.5	12.2	79.7	24.9	24.9
Incr Delay (d2), s/veh	24.0	12.0	13.5	9.0	16.5	4.3	17.8	0.8	0.5	13.6	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(95%),veh/ln	9.2	20.6	20.6	8.1	23.2	12.6	9.5	20.5	5.5	12.7	27.9	28.7
LnGrp Delay(d),s/veh	108.8	83.8	85.4	92.4	88.5	47.5	100.8	26.4	12.7	93.4	27.4	27.3
LnGrp LOS	F	F	F	F	F	D	F	C	B	F	C	C
Approach Vol, veh/h		644			602			1176			1548	
Approach Delay, s/veh		88.1			74.9			31.0			40.2	
Approach LOS		F			E			C			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	18.4	109.7	12.5	39.5	24.3	103.8	13.2	38.8
Change Period (Y+Rc), s	6.3	* 6.4	6.8	* 6.7	6.0	* 6.4	6.8	* 6.7
Max Green Setting (Gmax), s	18.7	* 82	9.6	* 43	24.0	* 77	9.8	* 44
Max Q Clear Time (g_c+I1), s	12.0	42.0	5.6	30.7	17.7	30.6	4.3	29.1
Green Ext Time (p_c), s	0.1	2.9	0.1	2.1	0.6	2.5	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	837	75	60	517	5	72	57	150	11	78	4
Future Volume (veh/h)	3	837	75	60	517	5	72	57	150	11	78	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1881	1900	1900	1881	1900	1900	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	3	854	77	61	528	5	73	58	153	11	80	4
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	556	1271	1066	320	1257	12	114	81	174	60	339	16
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	885	1881	1577	611	1860	18	336	395	853	95	1660	77
Grp Volume(v), veh/h	3	854	77	61	0	533	284	0	0	95	0	0
Grp Sat Flow(s),veh/h/ln	885	1881	1577	611	0	1878	1583	0	0	1832	0	0
Q Serve(g_s), s	0.2	26.9	1.7	6.6	0.0	12.8	13.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.0	26.9	1.7	33.5	0.0	12.8	17.3	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.26		0.54	0.12		0.04
Lane Grp Cap(c), veh/h	556	1271	1066	320	0	1269	368	0	0	414	0	0
V/C Ratio(X)	0.01	0.67	0.07	0.19	0.00	0.42	0.77	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	556	1271	1066	320	0	1269	455	0	0	513	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	9.6	5.5	19.6	0.0	7.3	38.4	0.0	0.0	33.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.8	0.1	1.3	0.0	1.0	6.9	0.0	0.0	0.3	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(95%),veh/ln	0.1	21.1	1.4	2.2	0.0	11.2	13.0	0.0	0.0	4.0	0.0	0.0
LnGrp Delay(d),s/veh	10.3	12.5	5.7	20.9	0.0	8.4	45.2	0.0	0.0	33.7	0.0	0.0
LnGrp LOS	B	B	A	C		A	D			C		
Approach Vol, veh/h		934			594			284			95	
Approach Delay, s/veh		11.9			9.6			45.2			33.7	
Approach LOS		B			A			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		73.6		26.4		73.6		26.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		62.0		26.0		62.0		26.0
Max Q Clear Time (g_c+I1), s		35.5		19.3		28.9		6.2
Green Ext Time (p_c), s		13.6		1.1		24.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	19	7	0	8	0	8	808	4	2	451	271
Future Volume (veh/h)	409	19	7	0	8	0	8	808	4	2	451	271
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		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	1900	1832	1900	1900	1900	1900	1520	1881	1900	1900	1881	1881
Adj Flow Rate, veh/h	435	20	7	0	9	0	9	860	4	2	480	288
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	5	5	0	0	0	25	1	1	0	1	1
Cap, veh/h	464	520	182	0	139	0	258	909	4	113	914	760
Arrive On Green	0.26	0.40	0.40	0.00	0.07	0.00	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1810	1297	454	0	1900	0	569	1871	9	650	1881	1563
Grp Volume(v), veh/h	435	0	27	0	9	0	9	0	864	2	480	288
Grp Sat Flow(s),veh/h/ln	1810	0	1751	0	1900	0	569	0	1880	650	1881	1563
Q Serve(g_s), s	20.8	0.0	0.8	0.0	0.4	0.0	1.0	0.0	38.7	0.3	15.6	10.3
Cycle Q Clear(g_c), s	20.8	0.0	0.8	0.0	0.4	0.0	16.6	0.0	38.7	38.9	15.6	10.3
Prop In Lane	1.00		0.26	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	464	0	702	0	139	0	258	0	914	113	914	760
V/C Ratio(X)	0.94	0.00	0.04	0.00	0.06	0.00	0.03	0.00	0.95	0.02	0.52	0.38
Avail Cap(c_a), veh/h	464	0	930	0	387	0	258	0	914	113	914	760
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	16.1	0.0	38.2	0.0	21.4	0.0	21.6	40.1	15.7	14.3
Incr Delay (d2), s/veh	26.7	0.0	0.0	0.0	0.2	0.0	0.3	0.0	19.2	0.3	2.2	1.4
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(95%),veh/ln	19.9	0.0	0.7	0.0	0.4	0.0	0.3	0.0	33.0	0.1	13.3	8.3
LnGrp Delay(d),s/veh	58.9	0.0	16.1	0.0	38.4	0.0	21.6	0.0	40.8	40.4	17.8	15.8
LnGrp LOS	E		B		D		C		D	D	B	B
Approach Vol, veh/h		462			9			873			770	
Approach Delay, s/veh		56.4			38.4			40.6			17.1	
Approach LOS		E			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		48.0		40.5		48.0	29.0	11.5
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		43.0		47.0		43.0	22.7	18.0
Max Q Clear Time (g_c+I1), s		40.7		2.8		40.9	22.8	2.4
Green Ext Time (p_c), s		1.4		0.1		0.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	4	4	1216	714	3
Future Volume (veh/h)	10	4	4	1216	714	3
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	11	4	4	1294	760	3
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	46	41	167	1530	1208	1027
Arrive On Green	0.03	0.03	0.09	0.81	0.64	0.64
Sat Flow, veh/h	1810	1615	1810	1900	1900	1615
Grp Volume(v), veh/h	11	4	4	1294	760	3
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1900	1900	1615
Q Serve(g_s), s	0.4	0.2	0.1	27.0	15.8	0.0
Cycle Q Clear(g_c), s	0.4	0.2	0.1	27.0	15.8	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	46	41	167	1530	1208	1027
V/C Ratio(X)	0.24	0.10	0.02	0.85	0.63	0.00
Avail Cap(c_a), veh/h	529	473	167	2048	1726	1467
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	31.0	30.9	26.8	3.9	7.2	4.3
Incr Delay (d2), s/veh	2.6	1.0	0.0	2.8	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.3	0.1	20.7	13.0	0.1
LnGrp Delay(d),s/veh	33.6	31.9	26.8	6.7	7.8	4.3
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	15			1298	763	
Approach Delay, s/veh	33.2			6.8	7.8	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		57.3		7.7	11.0	46.3		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		29.0		2.4	2.1	17.8		
Green Ext Time (p_c), s		23.2		0.0	0.0	8.3		

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	1286	38	177	711	10	48	4	280	5	4	3
Future Volume (veh/h)	9	1286	38	177	711	10	48	4	280	5	4	3
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1881	1900	1881	1881	1900	1900	1879	1900	1900	1754	1900
Adj Flow Rate, veh/h	10	1383	41	190	765	11	52	4	301	5	4	3
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	1	1	1	0	0	0	25	25	25
Cap, veh/h	488	1110	951	162	1295	19	75	14	253	0	167	126
Arrive On Green	0.59	0.59	0.59	0.10	1.00	1.00	0.19	0.19	0.19	0.00	0.18	0.18
Sat Flow, veh/h	706	1881	1612	1792	1849	27	176	72	1333	0	931	698
Grp Volume(v), veh/h	10	1383	41	190	0	776	357	0	0	0	0	7
Grp Sat Flow(s),veh/h/ln	706	1881	1612	1792	0	1876	1581	0	0	0	0	1628
Q Serve(g_s), s	0.6	59.0	1.1	5.0	0.0	0.0	13.9	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.6	59.0	1.1	5.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.01	0.15		0.84	0.00		0.43
Lane Grp Cap(c), veh/h	488	1110	951	162	0	1313	326	0	0	0	0	293
V/C Ratio(X)	0.02	1.25	0.04	1.18	0.00	0.59	1.10	0.00	0.00	0.00	0.00	0.02
Avail Cap(c_a), veh/h	488	1110	951	162	0	1313	326	0	0	0	0	489
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.50	0.00	0.50	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	20.5	8.6	28.7	0.0	0.0	41.2	0.0	0.0	0.0	0.0	33.8
Incr Delay (d2), s/veh	0.1	118.4	0.1	106.8	0.0	1.0	78.0	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(95%),veh/ln	0.2	120.1	0.9	16.5	0.0	0.6	29.0	0.0	0.0	0.0	0.0	0.3
LnGrp Delay(d),s/veh	8.6	138.9	8.7	135.6	0.0	1.0	119.2	0.0	0.0	0.0	0.0	33.8
LnGrp LOS	A	F	A	F		A	F					C
Approach Vol, veh/h		1434			966			357			7	
Approach Delay, s/veh		134.3			27.5			119.2			33.8	
Approach LOS		F			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		76.0	0.0	24.0	11.0	65.0		24.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		59.0	5.0	19.0	5.0	48.0		* 30
Max Q Clear Time (g_c+I1), s		2.0	0.0	20.0	7.0	61.0		2.4
Green Ext Time (p_c), s		10.4	0.0	0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	94.7
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	1266	29	16	676	128	38	57	36	180	61	163
Future Volume (veh/h)	231	1266	29	16	676	128	38	57	36	180	61	163
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.98		0.96	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1845	1792	1881	1881	1900	1856	1900	1881	1900	1881
Adj Flow Rate, veh/h	254	1391	32	18	743	141	42	63	40	198	67	179
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	6	1	1	0	2	2	1	0	1
Cap, veh/h	293	987	820	99	809	670	336	188	119	262	276	221
Arrive On Green	0.15	0.70	0.70	0.02	0.43	0.43	0.07	0.18	0.18	0.04	0.15	0.15
Sat Flow, veh/h	1792	1881	1563	1707	1881	1559	1810	1042	662	1792	1900	1521
Grp Volume(v), veh/h	254	1391	32	18	743	141	42	0	103	198	67	179
Grp Sat Flow(s),veh/h/ln	1792	1881	1563	1707	1881	1559	1810	0	1704	1792	1900	1521
Q Serve(g_s), s	8.3	52.4	0.4	0.6	37.2	5.7	0.0	0.0	5.3	0.0	3.1	11.4
Cycle Q Clear(g_c), s	8.3	52.4	0.4	0.6	37.2	5.7	0.0	0.0	5.3	0.0	3.1	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	293	987	820	99	809	670	336	0	307	262	276	221
V/C Ratio(X)	0.87	1.41	0.04	0.18	0.92	0.21	0.12	0.00	0.34	0.76	0.24	0.81
Avail Cap(c_a), veh/h	293	987	820	140	865	717	336	0	307	262	342	274
HCM Platoon Ratio	1.33	1.33	1.33	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	0.71	0.71	0.71	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	15.1	2.5	25.8	26.8	17.9	34.2	0.0	35.8	43.3	37.8	41.4
Incr Delay (d2), s/veh	2.7	185.1	0.0	0.6	13.0	0.5	0.2	0.0	2.9	11.9	0.4	13.6
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(95%),veh/ln	8.3	132.7	0.3	0.6	28.6	4.5	1.8	0.0	4.9	10.2	3.0	9.5
LnGrp Delay(d),s/veh	42.5	200.2	2.6	26.4	39.9	18.4	34.3	0.0	38.7	55.2	38.3	54.9
LnGrp LOS	D	F	A	C	D	B	C		D	E	D	D
Approach Vol, veh/h		1677			902			145			444	
Approach Delay, s/veh		172.5			36.3			37.5			52.5	
Approach LOS		F			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	17.0	49.0	10.0	24.0	7.6	58.4	13.4	20.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	46.0	4.0	18.0	4.0	50.0	4.0	18.0
Max Q Clear Time (g_c+I1), s	10.3	39.2	2.0	7.3	2.6	54.4	2.0	13.4
Green Ext Time (p_c), s	0.0	3.8	0.1	0.3	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	110.7
HCM 2010 LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	415	1035	555	108	121	260
Future Volume (veh/h)	415	1035	555	108	121	260
Number	5	2	6	16	7	14
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	1900	1881	1881	1863	1863	1900
Adj Flow Rate, veh/h	456	1137	610	119	133	286
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	2	2	0
Cap, veh/h	593	1317	703	578	319	721
Arrive On Green	0.53	1.00	0.37	0.37	0.18	0.18
Sat Flow, veh/h	1810	1881	1881	1546	1774	1615
Grp Volume(v), veh/h	456	1137	610	119	133	286
Grp Sat Flow(s),veh/h/ln	1810	1881	1881	1546	1774	1615
Q Serve(g_s), s	11.4	0.0	30.1	5.2	6.6	0.0
Cycle Q Clear(g_c), s	11.4	0.0	30.1	5.2	6.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	593	1317	703	578	319	721
V/C Ratio(X)	0.77	0.86	0.87	0.21	0.42	0.40
Avail Cap(c_a), veh/h	593	1317	884	727	319	721
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.86	0.86	1.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	29.0	21.2	36.3	18.6
Incr Delay (d2), s/veh	0.6	0.8	7.3	0.2	4.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	0.5	23.3	4.0	6.5	12.9
LnGrp Delay(d),s/veh	18.7	0.8	36.3	21.5	40.3	20.3
LnGrp LOS	B	A	D	C	D	C
Approach Vol, veh/h		1593	729		419	
Approach Delay, s/veh		5.9	33.9		26.6	
Approach LOS		A	C		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.0		24.0	32.6	43.4		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	17.0	47.0		
Max Q Clear Time (g_c+I1), s		2.0		8.6	13.4	32.1		
Green Ext Time (p_c), s		24.4		1.5	0.4	5.3		

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	380	709	147	297	378	121
Future Volume (veh/h)	380	709	147	297	378	121
Number	6	16	5	2	7	14
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	1881	1881	1845	1863	1881	1881
Adj Flow Rate, veh/h	404	754	156	316	402	129
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	3	2	1	1
Cap, veh/h	642	959	514	1158	463	413
Arrive On Green	0.11	0.11	0.22	0.62	0.26	0.26
Sat Flow, veh/h	1881	1597	1757	1863	1792	1599
Grp Volume(v), veh/h	404	754	156	316	402	129
Grp Sat Flow(s),veh/h/ln	1881	1597	1757	1863	1792	1599
Q Serve(g_s), s	20.5	30.2	0.0	7.7	21.5	6.5
Cycle Q Clear(g_c), s	20.5	30.2	0.0	7.7	21.5	6.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	642	959	514	1158	463	413
V/C Ratio(X)	0.63	0.79	0.30	0.27	0.87	0.31
Avail Cap(c_a), veh/h	658	972	514	1158	681	608
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	18.9	28.3	8.6	35.4	29.9
Incr Delay (d2), s/veh	1.0	2.1	0.3	0.6	9.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.6	26.6	6.2	7.4	17.5	10.4
LnGrp Delay(d),s/veh	39.3	21.0	28.7	9.2	45.0	30.5
LnGrp LOS	D	C	C	A	D	C
Approach Vol, veh/h	1158			472	531	
Approach Delay, s/veh	27.4			15.6	41.5	
Approach LOS	C			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		68.1		31.9	28.0	40.1		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		50.0		38.0	9.0	35.0		
Max Q Clear Time (g_c+I1), s		9.7		23.5	2.0	32.2		
Green Ext Time (p_c), s		3.2		2.4	0.2	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	28.3
HCM 2010 LOS	C

1: Mills Ave & Virginia Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	13.4	132.0	21.8	173.9	689.3	34.8
Total Delay (hr)	2.8	18.5	1.8	1.3	3.9	1.4	5.3	28.0	3.4	23.5	4.3	0.1
Travel Time (hr)	3.0	19.1	2.0	1.6	4.8	2.1	19.1	162.6	25.8	197.6	694.5	35.0
Avg Speed (mph)	1	1	2	4	5	8	2	3	4	0	6	8

1: Mills Ave & Virginia Dr Performance by movement

Movement	All
Denied Delay (hr)	1065.4
Total Delay (hr)	94.3
Travel Time (hr)	1167.2
Avg Speed (mph)	2

2: Fern Creek Ave & Virginia Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	9.8	0.4	0.0	0.0	0.0	18.3	14.0	35.5	0.0	0.0	0.0
Total Delay (hr)	0.1	31.4	2.0	0.5	2.2	0.0	3.9	3.6	8.6	0.4	2.2	0.1
Travel Time (hr)	0.1	43.1	2.6	1.1	6.7	0.1	22.4	17.8	44.5	0.5	2.5	0.1
Avg Speed (mph)	3	2	2	18	23	24	1	1	1	2	4	3

2: Fern Creek Ave & Virginia Dr Performance by movement

Movement	All
Denied Delay (hr)	77.9
Total Delay (hr)	55.0
Travel Time (hr)	141.3
Avg Speed (mph)	4

3: Forest Ave & Nebraska St Performance by movement

Movement	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	192.0	8.5	3.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	204.1
Total Delay (hr)	18.8	0.2	0.0	0.1	0.1	15.7	0.1	0.0	1.6	0.3	36.9
Travel Time (hr)	211.4	8.7	3.5	0.1	0.1	17.1	0.1	0.0	2.8	1.3	245.1
Avg Speed (mph)	1	4	5	4	3	2	2	11	13	17	3

4: Forest Ave & Corrine Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	2.9	0.0	0.0	2.9
Total Delay (hr)	0.0	0.1	0.0	11.1	0.6	0.0	11.8
Travel Time (hr)	0.1	0.1	0.0	15.2	2.9	0.0	18.3
Avg Speed (mph)	4	7	3	3	24	21	7

5: Bumby Ave & Corrine Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.8	72.9	6.4	0.0	0.0	0.0	0.6	0.0	2.1	0.0	0.0	0.0
Total Delay (hr)	0.3	24.4	1.2	1.4	2.5	0.0	2.4	0.1	7.6	4.4	2.4	2.1
Travel Time (hr)	1.1	99.3	7.7	3.3	10.1	0.1	3.4	0.2	11.0	4.4	2.4	2.1
Avg Speed (mph)	3	3	4	18	25	26	4	3	4	0	0	0

5: Bumby Ave & Corrine Dr Performance by movement

Movement	All
Denied Delay (hr)	82.8
Total Delay (hr)	48.8
Travel Time (hr)	145.3
Avg Speed (mph)	7

6: Winter Park Rd & Corrine Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.7	0.0	0.0	2.5	0.6	0.1	0.0	0.0	0.8	0.2	0.8
Total Delay (hr)	11.1	45.2	1.6	1.6	55.1	9.6	0.5	0.7	0.3	4.2	1.4	4.7
Travel Time (hr)	12.6	53.4	1.9	1.8	64.8	11.7	0.7	1.0	0.5	5.9	2.0	6.5
Avg Speed (mph)	4	5	5	4	4	4	7	7	9	4	5	4

6: Winter Park Rd & Corrine Dr Performance by movement

Movement	All
Denied Delay (hr)	5.7
Total Delay (hr)	135.9
Travel Time (hr)	162.8
Avg Speed (mph)	4

7: Corrine Dr & General Rees Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	1.5	1.8	53.9	9.3	1.4	1.8	69.7
Travel Time (hr)	4.6	9.8	59.0	10.4	2.2	3.3	89.2
Avg Speed (mph)	22	28	3	3	9	12	7

8: Bennett Rd & Corrine Dr Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	18.8	35.8	19.9	6.3	80.8
Total Delay (hr)	2.1	1.3	1.6	7.0	30.0	1.4	43.5
Travel Time (hr)	6.5	9.0	20.6	43.3	52.1	8.6	140.1
Avg Speed (mph)	16	20	3	2	2	11	7

Total Network Performance

Denied Delay (hr)	1742.1
Total Delay (hr)	641.6
Travel Time (hr)	2524.7
Avg Speed (mph)	5

Arterial Level of Service: EB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Mills Ave	1	279.1	288.0	0.1	1
	29	75.6	84.1	0.1	3
Fern Creek Ave	2	263.2	360.6	0.2	2
	13	361.0	392.4	0.3	3
Total		978.9	1125.0	0.6	2

Arterial Level of Service: WB Virginia Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Fern Creek Ave	2	13.0	39.8	0.3	27
	29	4.6	24.2	0.2	24
Mills Ave	1	40.8	49.5	0.1	6
	24	2.2	13.1	0.1	23
Total		60.6	126.4	0.6	18

Arterial Level of Service: NB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	19	72.8	78.7	0.0	2
Nebraska St	3	111.9	121.6	0.1	2
	22	66.2	74.8	0.1	3
Corrine Dr	4	66.5	90.4	0.1	3
	9	82.5	92.1	0.1	3
Total		399.9	457.7	0.3	3

Arterial Level of Service: SB Forest Ave

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Corrine Dr	4	2.3	12.2	0.1	25
	22	1.0	7.7	0.1	25
Nebraska St	3	11.4	19.9	0.1	13
	19	1.7	11.1	0.1	25
	13	0.4	6.3	0.0	28
Total		16.9	57.2	0.3	21

Arterial Level of Service: EB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Forest Ave	4	35.4	43.3	0.1	5
	9	21.9	25.0	0.1	12
Bumby Ave	5	151.4	617.7	0.1	3
Winter Park Rd	6	196.9	232.9	0.3	5
General Rees Ave	7	8.6	47.6	0.4	29
Bennett Rd	8	22.3	68.6	0.4	19
Total		436.6	1035.2	1.4	9

Arterial Level of Service: WB Corrine Dr

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Bennett Rd	8	93.5	575.2	0.1	2
General Rees Ave	7	325.1	354.9	0.4	4
Winter Park Rd	6	264.6	318.4	0.4	5
Bumby Ave	5	11.1	46.0	0.3	27
	9	2.0	17.6	0.1	26
Corrine Dr	4	1.9	13.6	0.1	22
Total		698.2	1325.8	1.4	6

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

09/28/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Future Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.99	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	1881	1900	1900	1863	1881	1881	1900	1881	1900	1845	1882	1900
Adj Flow Rate, veh/h	126	605	136	118	413	279	137	1236	208	406	1598	78
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	0	0	2	1	1	0	1	0	3	1	1
Cap, veh/h	142	671	150	156	430	363	153	1589	708	445	1698	83
Arrive On Green	0.05	0.23	0.23	0.05	0.23	0.23	0.08	0.44	0.44	0.13	0.49	0.49
Sat Flow, veh/h	1792	2919	655	1774	1881	1589	1810	3574	1592	3408	3471	169
Grp Volume(v), veh/h	126	374	367	118	413	279	137	1236	208	406	820	856
Grp Sat Flow(s),veh/h/ln	1792	1805	1769	1774	1881	1589	1810	1787	1592	1704	1788	1852
Q Serve(g_s), s	9.4	36.2	36.4	9.2	39.1	29.6	13.5	52.9	15.0	21.2	77.9	79.1
Cycle Q Clear(g_c), s	9.4	36.2	36.4	9.2	39.1	29.6	13.5	52.9	15.0	21.2	77.9	79.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	142	415	406	156	430	363	153	1589	708	445	875	906
V/C Ratio(X)	0.88	0.90	0.90	0.75	0.96	0.77	0.90	0.78	0.29	0.91	0.94	0.95
Avail Cap(c_a), veh/h	142	416	408	156	432	364	153	1589	708	481	875	906
HCM Platoon Ratio	1.00	1.00	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	55.9	67.3	67.4	53.8	68.6	65.0	81.6	42.4	31.9	77.2	43.4	43.7
Incr Delay (d2), s/veh	43.3	22.1	23.0	18.6	33.1	9.5	44.0	3.8	1.1	20.7	18.6	19.3
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(95%),veh/ln	6.0	28.0	27.8	9.1	32.3	20.1	13.5	35.4	11.1	16.8	53.8	56.3
LnGrp Delay(d),s/veh	99.2	89.4	90.4	72.4	101.7	74.5	125.6	46.3	33.0	97.9	62.0	63.0
LnGrp LOS	F	F	F	E	F	E	F	D	C	F	E	E
Approach Vol, veh/h		867			810			1581			2082	
Approach Delay, s/veh		91.3			88.0			51.4			69.4	
Approach LOS		F			F			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	21.5	94.4	16.2	47.9	29.5	86.4	16.0	48.1
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	15.2	* 88	* 9.4	41.3	25.4	* 78	9.8	41.5
Max Q Clear Time (g_c+I1), s	15.5	81.1	11.4	41.1	23.2	54.9	11.2	38.4
Green Ext Time (p_c), s	0.0	2.8	0.0	0.1	0.4	3.7	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	70.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Future Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1881	1900	1900	1881	1900	1900	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	4	1149	103	83	709	7	99	79	206	15	107	5
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	416	1253	1050	136	1238	12	124	80	184	61	345	15
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	747	1881	1576	451	1859	18	368	375	860	95	1610	70
Grp Volume(v), veh/h	4	1149	103	83	0	716	384	0	0	127	0	0
Grp Sat Flow(s),veh/h/ln	747	1881	1576	451	0	1878	1603	0	0	1775	0	0
Q Serve(g_s), s	0.3	52.4	2.3	14.2	0.0	20.6	15.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.9	52.4	2.3	66.6	0.0	20.6	21.4	0.0	0.0	5.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.26		0.54	0.12		0.04
Lane Grp Cap(c), veh/h	416	1253	1050	136	0	1251	388	0	0	420	0	0
V/C Ratio(X)	0.01	0.92	0.10	0.61	0.00	0.57	0.99	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	416	1253	1050	136	0	1251	388	0	0	420	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.7	14.3	6.0	44.5	0.0	9.0	40.1	0.0	0.0	33.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	12.0	0.2	18.8	0.0	1.9	42.6	0.0	0.0	0.5	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(95%),veh/ln	0.1	40.1	1.9	5.4	0.0	16.7	21.5	0.0	0.0	5.4	0.0	0.0
LnGrp Delay(d),s/veh	14.7	26.4	6.2	63.3	0.0	10.9	82.7	0.0	0.0	33.6	0.0	0.0
LnGrp LOS	B	C	A	E		B	F			C		
Approach Vol, veh/h		1256			799			384			127	
Approach Delay, s/veh		24.7			16.4			82.7			33.6	
Approach LOS		C			B			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.6		27.4		72.6		27.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		66.6		21.4		66.6		21.4
Max Q Clear Time (g_c+I1), s		68.6		23.4		54.4		7.7
Green Ext Time (p_c), s		0.0		0.0		11.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
Future Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
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		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	1900	1832	1900	1900	1900	1900	1520	1881	1900	1900	1881	1881
Adj Flow Rate, veh/h	585	28	10	0	12	0	12	1156	5	3	646	387
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	5	5	0	0	0	25	1	1	0	1	1
Cap, veh/h	438	513	183	0	162	0	180	919	4	80	923	767
Arrive On Green	0.24	0.40	0.40	0.00	0.09	0.00	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1810	1289	460	0	1900	0	444	1872	8	491	1881	1563
Grp Volume(v), veh/h	585	0	38	0	12	0	12	0	1161	3	646	387
Grp Sat Flow(s),veh/h/ln	1810	0	1750	0	1900	0	444	0	1880	491	1881	1563
Q Serve(g_s), s	21.7	0.0	1.2	0.0	0.5	0.0	1.9	0.0	44.0	0.0	23.9	15.0
Cycle Q Clear(g_c), s	21.7	0.0	1.2	0.0	0.5	0.0	25.8	0.0	44.0	44.0	23.9	15.0
Prop In Lane	1.00		0.26	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	0	696	0	162	0	180	0	923	80	923	767
V/C Ratio(X)	1.34	0.00	0.05	0.00	0.07	0.00	0.07	0.00	1.26	0.04	0.70	0.50
Avail Cap(c_a), veh/h	438	0	898	0	381	0	180	0	923	80	923	767
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	16.6	0.0	37.7	0.0	27.7	0.0	22.8	44.8	17.7	15.5
Incr Delay (d2), s/veh	166.0	0.0	0.0	0.0	0.2	0.0	0.7	0.0	125.2	0.9	4.4	2.4
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(95%),veh/ln	55.6	0.0	1.1	0.0	0.5	0.0	0.5	0.0	98.3	0.2	19.5	11.2
LnGrp Delay(d),s/veh	200.0	0.0	16.7	0.0	37.9	0.0	28.4	0.0	148.0	45.7	22.1	17.8
LnGrp LOS	F		B		D		C		F	D	C	B
Approach Vol, veh/h		623			12			1173			1036	
Approach Delay, s/veh		188.8			37.9			146.8			20.6	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.0		40.7		49.0	28.0	12.7
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		44.0		46.0		44.0	21.7	18.0
Max Q Clear Time (g_c+I1), s		46.0		3.2		46.0	23.7	2.5
Green Ext Time (p_c), s		0.0		0.2		0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		109.5
HCM 2010 LOS		F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	13	5	1636	960	4
Future Volume (veh/h)	5	13	5	1636	960	4
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	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	14	5	1740	1021	4
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	0
Cap, veh/h	54	48	130	1577	1329	1141
Arrive On Green	0.03	0.03	0.07	0.84	0.71	0.71
Sat Flow, veh/h	1810	1615	1810	1881	1881	1615
Grp Volume(v), veh/h	5	14	5	1740	1021	4
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1881	1881	1615
Q Serve(g_s), s	0.2	0.7	0.2	70.0	29.1	0.1
Cycle Q Clear(g_c), s	0.2	0.7	0.2	70.0	29.1	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	54	48	130	1577	1329	1141
V/C Ratio(X)	0.09	0.29	0.04	1.10	0.77	0.00
Avail Cap(c_a), veh/h	412	368	130	1577	1329	1141
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	39.4	39.6	36.1	6.7	7.9	3.6
Incr Delay (d2), s/veh	0.7	3.3	0.0	56.5	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	1.2	0.2	106.1	22.3	0.2
LnGrp Delay(d),s/veh	40.1	42.9	36.1	63.2	10.7	3.6
LnGrp LOS	D	D	D	F	B	A
Approach Vol, veh/h	19			1745	1025	
Approach Delay, s/veh	42.2			63.2	10.7	
Approach LOS	D			E	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		75.0		8.5	11.0	64.0		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		72.0		2.7	2.2	31.1		
Green Ext Time (p_c), s		0.0		0.0	0.0	12.1		

Intersection Summary	
HCM 2010 Ctrl Delay	43.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Future Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1881	1900	1881	1881	1900	1900	1877	1900	1900	1754	1900
Adj Flow Rate, veh/h	23	1755	118	234	968	13	124	5	370	6	5	4
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	0	1	1	1	0	0	0	25	25	25
Cap, veh/h	398	1053	903	162	1240	17	124	9	253	0	190	152
Arrive On Green	0.56	0.56	0.56	0.10	1.00	1.00	0.22	0.22	0.22	0.00	0.21	0.21
Sat Flow, veh/h	582	1881	1612	1792	1851	25	361	40	1150	0	902	722
Grp Volume(v), veh/h	23	1755	118	234	0	981	499	0	0	0	0	9
Grp Sat Flow(s),veh/h/ln	582	1881	1612	1792	0	1876	1550	0	0	0	0	1624
Q Serve(g_s), s	1.8	56.0	3.5	5.0	0.0	0.0	19.8	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	1.8	56.0	3.5	5.0	0.0	0.0	21.0	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.01	0.25		0.74	0.00		0.44
Lane Grp Cap(c), veh/h	398	1053	903	162	0	1257	371	0	0	0	0	341
V/C Ratio(X)	0.06	1.67	0.13	1.45	0.00	0.78	1.35	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	398	1053	903	162	0	1257	371	0	0	0	0	536
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	22.0	10.4	27.4	0.0	0.0	39.8	0.0	0.0	0.0	0.0	31.4
Incr Delay (d2), s/veh	0.3	303.9	0.3	204.9	0.0	0.5	173.0	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(95%),veh/ln	0.6	211.7	2.9	24.1	0.0	0.3	50.6	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	10.4	325.9	10.7	232.3	0.0	0.5	212.9	0.0	0.0	0.0	0.0	31.4
LnGrp LOS	B	F	B	F		A	F					C
Approach Vol, veh/h		1896			1215			499			9	
Approach Delay, s/veh		302.4			45.1			212.9			31.4	
Approach LOS		F			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		73.0	0.0	27.0	11.0	62.0		27.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		56.0	5.0	22.0	5.0	45.0		* 33
Max Q Clear Time (g_c+I1), s		2.0	0.0	23.0	7.0	58.0		2.4
Green Ext Time (p_c), s		16.3	0.0	0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	203.0
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Future Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1845	1792	1881	1881	1900	1856	1900	1881	1900	1881
Adj Flow Rate, veh/h	335	1722	66	22	913	173	55	77	48	243	82	242
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	6	1	1	0	2	2	1	0	1
Cap, veh/h	168	724	602	103	658	545	326	189	118	316	336	270
Arrive On Green	0.04	0.26	0.26	0.02	0.35	0.35	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1792	1881	1562	1707	1881	1557	1810	1051	655	1792	1900	1529
Grp Volume(v), veh/h	335	1722	66	22	913	173	55	0	125	243	82	242
Grp Sat Flow(s),veh/h/ln	1792	1881	1562	1707	1881	1557	1810	0	1705	1792	1900	1529
Q Serve(g_s), s	5.3	38.5	3.2	0.9	35.0	8.1	2.6	0.0	6.5	12.9	3.7	15.5
Cycle Q Clear(g_c), s	5.3	38.5	3.2	0.9	35.0	8.1	2.6	0.0	6.5	12.9	3.7	15.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	168	724	602	103	658	545	326	0	307	316	336	270
V/C Ratio(X)	2.00	2.38	0.11	0.21	1.39	0.32	0.17	0.00	0.41	0.77	0.24	0.90
Avail Cap(c_a), veh/h	168	724	602	140	658	545	326	0	307	322	342	275
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)	0.09	0.09	0.09	0.50	0.50	0.50	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	37.1	24.0	28.4	32.5	23.8	34.7	0.0	36.3	39.2	35.4	40.3
Incr Delay (d2), s/veh	450.9	620.0	0.0	0.5	178.7	0.8	1.1	0.0	4.0	10.5	0.4	28.8
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(95%),veh/ln	44.3	245.6	2.0	0.8	91.4	5.8	2.5	0.0	6.1	11.8	3.6	13.5
LnGrp Delay(d),s/veh	498.0	657.1	24.0	28.9	211.2	24.5	35.8	0.0	40.2	49.7	35.8	69.1
LnGrp LOS	F	F	C	C	F	C	D		D	D	D	E
Approach Vol, veh/h		2123			1108			180			567	
Approach Delay, s/veh		612.3			178.5			38.9			56.0	
Approach LOS		F			F			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	11.3	41.0		24.0	7.8	44.5		23.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	5.0	35.0		18.0	4.0	36.0		18.0
Max Q Clear Time (g_c+I1), s	7.3	37.0		8.5	2.9	40.5		17.5
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	386.2
HCM 2010 LOS	F

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	510	1273	683	133	149	320
Future Volume (veh/h)	510	1273	683	133	149	320
Number	5	2	6	16	7	14
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	1900	1881	1881	1863	1863	1900
Adj Flow Rate, veh/h	560	1399	751	146	164	352
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	2	2	0
Cap, veh/h	490	1317	770	633	319	663
Arrive On Green	0.46	1.00	0.54	0.54	0.18	0.18
Sat Flow, veh/h	1810	1881	1881	1547	1774	1615
Grp Volume(v), veh/h	560	1399	751	146	164	352
Grp Sat Flow(s),veh/h/ln	1810	1881	1881	1547	1774	1615
Q Serve(g_s), s	23.1	0.0	38.8	4.9	8.4	0.0
Cycle Q Clear(g_c), s	23.1	0.0	38.8	4.9	8.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	490	1317	770	633	319	663
V/C Ratio(X)	1.14	1.06	0.98	0.23	0.51	0.53
Avail Cap(c_a), veh/h	490	1317	771	634	319	663
HCM Platoon Ratio	2.00	2.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.78	0.78	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	22.3	14.6	37.0	22.2
Incr Delay (d2), s/veh	66.4	30.0	22.8	0.2	5.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	39.2	19.8	31.8	3.8	8.1	15.5
LnGrp Delay(d),s/veh	91.6	30.0	45.1	14.8	42.8	25.2
LnGrp LOS	F	F	D	B	D	C
Approach Vol, veh/h		1959	897		516	
Approach Delay, s/veh		47.6	40.2		30.8	
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		76.0		24.0	29.1	46.9		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	23.0	41.0		
Max Q Clear Time (g_c+I1), s		2.0		10.4	25.1	40.8		
Green Ext Time (p_c), s		42.3		1.7	0.0	0.2		

Intersection Summary	
HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	872	181	365	465	149
Future Volume (veh/h)	467	872	181	365	465	149
Number	6	16	5	2	7	14
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	1881	1881	1845	1863	1881	1881
Adj Flow Rate, veh/h	497	928	193	388	495	159
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	3	2	1	1
Cap, veh/h	658	1054	381	1062	555	496
Arrive On Green	0.12	0.12	0.16	0.57	0.31	0.31
Sat Flow, veh/h	1881	1597	1757	1863	1792	1599
Grp Volume(v), veh/h	497	928	193	388	495	159
Grp Sat Flow(s),veh/h/ln	1881	1597	1757	1863	1792	1599
Q Serve(g_s), s	25.6	33.3	4.0	11.3	26.3	7.6
Cycle Q Clear(g_c), s	25.6	33.3	4.0	11.3	26.3	7.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	658	1054	381	1062	555	496
V/C Ratio(X)	0.75	0.88	0.51	0.37	0.89	0.32
Avail Cap(c_a), veh/h	658	1054	381	1062	699	624
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	15.6	35.4	11.7	32.9	26.4
Incr Delay (d2), s/veh	0.5	0.9	1.1	1.0	12.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.2	28.5	8.4	10.2	21.4	12.0
LnGrp Delay(d),s/veh	40.6	16.5	36.5	12.6	45.5	27.0
LnGrp LOS	D	B	D	B	D	C
Approach Vol, veh/h	1425			581	654	
Approach Delay, s/veh	24.9			20.6	41.0	
Approach LOS	C			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.0		37.0	22.0	41.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		49.0		39.0	8.0	35.0		
Max Q Clear Time (g_c+I1), s		13.3		28.3	6.0	35.3		
Green Ext Time (p_c), s		4.0		2.7	0.1	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

10/04/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	465	190	110	378	83	149	872	82	102	898	73
Future Volume (veh/h)	171	465	190	110	378	83	149	872	82	102	898	73
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.98
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	1881	1887	1900	1863	1900	1881	1863	1881	1881	1900	1880	1900
Adj Flow Rate, veh/h	188	511	209	121	415	91	164	958	90	112	987	80
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	0	1	2	1	1	0	1	1
Cap, veh/h	221	661	269	206	447	369	385	1744	769	150	1039	84
Arrive On Green	0.09	0.27	0.27	0.06	0.24	0.24	0.22	0.49	0.49	0.04	0.31	0.31
Sat Flow, veh/h	1792	2484	1011	1774	1900	1569	1774	3574	1577	3510	3339	271
Grp Volume(v), veh/h	188	368	352	121	415	91	164	958	90	112	528	539
Grp Sat Flow(s),veh/h/ln	1792	1792	1703	1774	1900	1569	1774	1787	1577	1755	1786	1824
Q Serve(g_s), s	14.1	34.1	34.4	9.2	38.5	8.5	14.4	33.8	5.6	5.7	52.0	52.0
Cycle Q Clear(g_c), s	14.1	34.1	34.4	9.2	38.5	8.5	14.4	33.8	5.6	5.7	52.0	52.0
Prop In Lane	1.00		0.59	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	221	477	453	206	447	369	385	1744	769	150	556	568
V/C Ratio(X)	0.85	0.77	0.78	0.59	0.93	0.25	0.43	0.55	0.12	0.75	0.95	0.95
Avail Cap(c_a), veh/h	231	541	514	221	520	430	385	1744	769	195	641	655
HCM Platoon Ratio	1.00	1.00	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	50.2	61.0	61.1	50.4	67.3	55.8	60.8	32.3	25.0	85.2	60.6	60.6
Incr Delay (d2), s/veh	24.3	6.0	6.6	3.6	21.3	0.3	0.7	1.3	0.3	10.6	27.6	27.2
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(95%),veh/ln	13.2	24.6	23.8	8.3	30.7	6.7	11.5	23.7	4.5	5.4	38.9	39.6
LnGrp Delay(d),s/veh	74.5	67.0	67.6	53.9	88.6	56.2	61.5	33.5	25.3	95.8	88.2	87.9
LnGrp LOS	E	E	E	D	F	E	E	C	C	F	F	F
Approach Vol, veh/h		908			627			1212			1179	
Approach Delay, s/veh		68.8			77.2			36.7			88.8	
Approach LOS		E			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	45.5	62.4	23.0	49.1	13.7	94.2	17.5	54.6
Change Period (Y+Rc), s	* 6.4	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	* 23	* 65	* 17	49.3	10.0	* 78	12.8	54.3
Max Q Clear Time (g_c+I1), s	16.4	54.0	16.1	40.5	7.7	35.8	11.2	36.4
Green Ext Time (p_c), s	0.2	2.0	0.1	1.9	0.1	2.6	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	66.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	612	5	5	560	42	4	31	1	61	30	34
Future Volume (veh/h)	52	612	5	5	560	42	4	31	1	61	30	34
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1863	1900	1900	1848	1900	1900	1900	1900	1900	1878	1900
Adj Flow Rate, veh/h	58	680	6	6	622	47	4	34	1	68	33	38
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0	0	3	3	0	0	0	5	5	5
Cap, veh/h	566	1430	1212	559	1301	98	48	197	5	130	52	48
Arrive On Green	0.77	0.77	0.77	0.77	0.77	0.77	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	780	1863	1579	768	1694	128	70	1753	48	683	461	430
Grp Volume(v), veh/h	58	680	6	6	0	669	39	0	0	139	0	0
Grp Sat Flow(s),veh/h/ln	780	1863	1579	768	0	1822	1871	0	0	1574	0	0
Q Serve(g_s), s	2.9	13.4	0.1	0.3	0.0	13.5	0.0	0.0	0.0	6.6	0.0	0.0
Cycle Q Clear(g_c), s	16.4	13.4	0.1	13.7	0.0	13.5	1.9	0.0	0.0	8.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	0.10		0.03	0.49		0.27
Lane Grp Cap(c), veh/h	566	1430	1212	559	0	1399	250	0	0	231	0	0
V/C Ratio(X)	0.10	0.48	0.00	0.01	0.00	0.48	0.16	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	566	1430	1212	559	0	1399	445	0	0	395	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	4.3	2.7	6.8	0.0	4.3	40.2	0.0	0.0	43.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	1.1	0.0	0.0	0.0	1.2	0.3	0.0	0.0	3.0	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(95%),veh/ln	1.2	11.7	0.1	0.1	0.0	11.5	1.8	0.0	0.0	7.1	0.0	0.0
LnGrp Delay(d),s/veh	7.6	5.4	2.7	6.8	0.0	5.4	40.6	0.0	0.0	46.1	0.0	0.0
LnGrp LOS	A	A	A	A		A	D			D		
Approach Vol, veh/h		744			675			39			139	
Approach Delay, s/veh		5.5			5.5			40.6			46.1	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		82.8		17.2		82.8		17.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		66.0		22.0		66.0		22.0
Max Q Clear Time (g_c+I1), s		15.7		3.9		18.4		10.5
Green Ext Time (p_c), s		23.2		0.1		24.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	16	4	0	5	0	1	499	1	1	527	208
Future Volume (veh/h)	183	16	4	0	5	0	1	499	1	1	527	208
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		0.98
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	1881	1900	1900	1900	1900	1900	1900	1881	1900	1900	1881	1845
Adj Flow Rate, veh/h	193	17	4	0	5	0	1	525	1	1	555	219
Adj No. of Lanes	1	1	0	0	1	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	1	0	1	3
Cap, veh/h	238	423	100	0	140	0	384	1100	2	471	1103	899
Arrive On Green	0.13	0.29	0.29	0.00	0.07	0.00	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1792	1478	348	0	1900	0	707	1877	4	891	1881	1534
Grp Volume(v), veh/h	193	0	21	0	5	0	1	0	526	1	555	219
Grp Sat Flow(s),veh/h/ln	1792	0	1826	0	1900	0	707	0	1881	891	1881	1534
Q Serve(g_s), s	8.2	0.0	0.7	0.0	0.2	0.0	0.1	0.0	12.6	0.1	13.6	5.4
Cycle Q Clear(g_c), s	8.2	0.0	0.7	0.0	0.2	0.0	13.7	0.0	12.6	12.7	13.6	5.4
Prop In Lane	1.00		0.19	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	0	523	0	140	0	384	0	1102	471	1103	899
V/C Ratio(X)	0.81	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.48	0.00	0.50	0.24
Avail Cap(c_a), veh/h	450	0	1024	0	436	0	384	0	1102	471	1103	899
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	20.2	0.0	33.8	0.0	13.5	0.0	9.3	13.0	9.5	7.8
Incr Delay (d2), s/veh	6.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.5	0.0	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(95%),veh/ln	8.0	0.0	0.6	0.0	0.2	0.0	0.0	0.0	11.2	0.0	11.9	4.4
LnGrp Delay(d),s/veh	39.6	0.0	20.2	0.0	33.9	0.0	13.6	0.0	10.8	13.0	11.2	8.5
LnGrp LOS	D		C		C		B		B	B	B	A
Approach Vol, veh/h		214			5			527			775	
Approach Delay, s/veh		37.7			33.9			10.8			10.4	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		51.0		27.5		51.0	16.7	10.8
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		46.0		44.0		46.0	19.7	18.0
Max Q Clear Time (g_c+I1), s		15.7		2.7		15.6	10.2	2.2
Green Ext Time (p_c), s		3.8		0.1		4.9	0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	12	22	486	551	29
Future Volume (veh/h)	24	12	22	486	551	29
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	25	13	23	512	580	31
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	107	96	252	1301	815	693
Arrive On Green	0.06	0.06	0.14	0.68	0.43	0.43
Sat Flow, veh/h	1810	1615	1810	1900	1900	1615
Grp Volume(v), veh/h	25	13	23	512	580	31
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1900	1900	1615
Q Serve(g_s), s	0.6	0.3	0.5	5.0	10.8	0.5
Cycle Q Clear(g_c), s	0.6	0.3	0.5	5.0	10.8	0.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	107	96	252	1301	815	693
V/C Ratio(X)	0.23	0.14	0.09	0.39	0.71	0.04
Avail Cap(c_a), veh/h	842	752	337	3050	2476	2104
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	19.3	19.2	16.1	2.9	10.1	7.1
Incr Delay (d2), s/veh	1.1	0.6	0.1	0.2	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.6	0.4	4.8	9.7	1.0
LnGrp Delay(d),s/veh	20.4	19.8	16.2	3.2	11.5	7.2
LnGrp LOS	C	B	B	A	B	A
Approach Vol, veh/h	38			535	611	
Approach Delay, s/veh	20.2			3.7	11.3	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		34.4		8.6	11.0	23.4		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		69.0		20.0	8.0	56.0		
Max Q Clear Time (g_c+I1), s		7.0		2.6	2.5	12.8		
Green Ext Time (p_c), s		4.7		0.1	0.0	5.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	637	30	178	686	6	80	1	175	4	5	4
Future Volume (veh/h)	7	637	30	178	686	6	80	1	175	4	5	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.99		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	1900	1863	1845	1863	1860	1900	1900	1875	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	692	33	193	746	7	87	1	190	4	5	4
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	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, %	0	2	3	2	2	2	0	0	0	0	0	0
Cap, veh/h	479	1051	862	410	1268	12	131	13	210	0	184	147
Arrive On Green	0.56	0.56	0.56	0.13	1.00	1.00	0.20	0.20	0.20	0.00	0.19	0.19
Sat Flow, veh/h	720	1863	1528	1774	1839	17	420	67	1051	0	964	772
Grp Volume(v), veh/h	8	692	33	193	0	753	278	0	0	0	0	9
Grp Sat Flow(s),veh/h/ln	720	1863	1528	1774	0	1856	1538	0	0	0	0	1736
Q Serve(g_s), s	0.5	25.7	1.0	4.5	0.0	0.0	15.6	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.5	25.7	1.0	4.5	0.0	0.0	17.8	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.01	0.31		0.68	0.00		0.44
Lane Grp Cap(c), veh/h	479	1051	862	410	0	1280	340	0	0	0	0	330
V/C Ratio(X)	0.02	0.66	0.04	0.47	0.00	0.59	0.82	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	479	1051	862	419	0	1280	355	0	0	0	0	556
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.25	0.00	0.25	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	15.1	9.7	11.2	0.0	0.0	39.0	0.0	0.0	0.0	0.0	33.0
Incr Delay (d2), s/veh	0.1	3.2	0.1	0.2	0.0	0.5	13.5	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(95%),veh/ln	0.2	20.2	0.8	3.3	0.0	0.3	13.8	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	9.7	18.3	9.8	11.4	0.0	0.5	52.5	0.0	0.0	0.0	0.0	33.0
LnGrp LOS	A	B	A	B		A	D					C
Approach Vol, veh/h		733			946			278			9	
Approach Delay, s/veh		17.8			2.7			52.5			33.0	
Approach LOS		B			A			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		75.0	0.0	25.0	12.5	62.4		25.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		57.0	5.0	21.0	7.0	44.0		* 32
Max Q Clear Time (g_c+I1), s		2.0	0.0	19.8	6.5	27.7		2.4
Green Ext Time (p_c), s		9.9	0.0	0.2	0.0	6.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	674	30	26	668	96	47	37	33	144	49	140
Future Volume (veh/h)	139	674	30	26	668	96	47	37	33	144	49	140
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.96	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1827	1900	1863	1863	1900	1900	1900	1863	1810	1900
Adj Flow Rate, veh/h	146	709	32	27	703	101	49	39	35	152	52	147
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	4	0	2	2	0	0	0	2	5	0
Cap, veh/h	183	813	647	156	770	630	326	164	147	225	230	197
Arrive On Green	0.01	0.14	0.14	0.02	0.41	0.41	0.18	0.18	0.18	0.13	0.13	0.13
Sat Flow, veh/h	1792	1881	1498	1810	1863	1526	1810	911	817	1774	1810	1551
Grp Volume(v), veh/h	146	709	32	27	703	101	49	0	74	152	52	147
Grp Sat Flow(s),veh/h/ln	1792	1881	1498	1810	1863	1526	1810	0	1728	1774	1810	1551
Q Serve(g_s), s	4.0	36.9	1.8	0.9	35.6	4.2	2.3	0.0	3.7	8.2	2.6	9.1
Cycle Q Clear(g_c), s	4.0	36.9	1.8	0.9	35.6	4.2	2.3	0.0	3.7	8.2	2.6	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	183	813	647	156	770	630	326	0	311	225	230	197
V/C Ratio(X)	0.80	0.87	0.05	0.17	0.91	0.16	0.15	0.00	0.24	0.68	0.23	0.75
Avail Cap(c_a), veh/h	183	813	647	190	770	630	326	0	311	319	326	279
HCM Platoon Ratio	0.33	0.33	0.33	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	0.73	0.73	0.73	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	40.2	25.1	22.6	27.7	18.4	34.6	0.0	35.1	41.7	39.2	42.1
Incr Delay (d2), s/veh	12.7	7.3	0.1	0.4	13.5	0.4	1.0	0.0	1.8	3.5	0.5	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(95%),veh/ln	5.0	26.4	1.4	0.8	27.5	3.3	2.2	0.0	3.4	7.6	2.4	7.7
LnGrp Delay(d),s/veh	40.9	47.5	25.2	23.0	41.1	18.8	35.5	0.0	36.9	45.2	39.7	48.7
LnGrp LOS	D	D	C	C	D	B	D		D	D	D	D
Approach Vol, veh/h		887			831			123			351	
Approach Delay, s/veh		45.6			37.8			36.4			45.9	
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	10.0	47.3		24.0	8.1	49.2		18.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	4.0	36.0		18.0	4.0	36.0		18.0
Max Q Clear Time (g_c+I1), s	6.0	37.6		5.7	2.9	38.9		11.1
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	550	485	101	122	111
Future Volume (veh/h)	220	550	485	101	122	111
Number	5	2	6	16	7	14
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	1881	1881	1863	1863	1863	1881
Adj Flow Rate, veh/h	232	579	511	106	128	117
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	2	2	2	1
Cap, veh/h	650	1279	1011	841	355	443
Arrive On Green	0.10	0.90	1.00	1.00	0.20	0.20
Sat Flow, veh/h	1792	1881	1863	1550	1774	1599
Grp Volume(v), veh/h	232	579	511	106	128	117
Grp Sat Flow(s),veh/h/ln	1792	1881	1863	1550	1774	1599
Q Serve(g_s), s	5.5	5.0	0.0	0.0	6.2	5.7
Cycle Q Clear(g_c), s	5.5	5.0	0.0	0.0	6.2	5.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	650	1279	1011	841	355	443
V/C Ratio(X)	0.36	0.45	0.51	0.13	0.36	0.26
Avail Cap(c_a), veh/h	763	1279	1011	841	355	443
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.85	0.85	1.00	1.00
Uniform Delay (d), s/veh	7.3	1.8	0.0	0.0	34.5	28.2
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.1	2.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	4.4	0.2	0.0	6.0	9.7
LnGrp Delay(d),s/veh	7.4	2.3	0.5	0.1	37.3	29.6
LnGrp LOS	A	A	A	A	D	C
Approach Vol, veh/h		811	617		245	
Approach Delay, s/veh		3.8	0.4		33.6	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		74.0		26.0	13.7	60.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		68.0		20.0	14.0	48.0		
Max Q Clear Time (g_c+I1), s		7.0		8.2	7.5	2.0		
Green Ext Time (p_c), s		6.5		0.9	0.3	6.1		

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	194	434	81	214	338	58
Future Volume (veh/h)	194	434	81	214	338	58
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1881	1881	1845	1863	1881	1900
Adj Flow Rate, veh/h	204	457	85	225	356	61
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	3	2	1	0
Cap, veh/h	1005	1205	518	1208	415	374
Arrive On Green	0.36	0.36	0.05	0.65	0.23	0.23
Sat Flow, veh/h	1881	1564	1757	1863	1792	1615
Grp Volume(v), veh/h	204	457	85	225	356	61
Grp Sat Flow(s),veh/h/ln	1881	1564	1757	1863	1792	1615
Q Serve(g_s), s	7.5	11.7	2.0	4.8	19.1	3.0
Cycle Q Clear(g_c), s	7.5	11.7	2.0	4.8	19.1	3.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1005	1205	518	1208	415	374
V/C Ratio(X)	0.20	0.38	0.16	0.19	0.86	0.16
Avail Cap(c_a), veh/h	1005	1205	598	1208	770	694
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	5.7	8.6	7.0	36.9	30.7
Incr Delay (d2), s/veh	0.1	0.2	0.1	0.3	7.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	15.0	1.7	4.6	15.5	5.4
LnGrp Delay(d),s/veh	17.5	5.9	8.7	7.4	44.2	31.0
LnGrp LOS	B	A	A	A	D	C
Approach Vol, veh/h	661			310	417	
Approach Delay, s/veh	9.5			7.7	42.2	
Approach LOS	A			A	D	

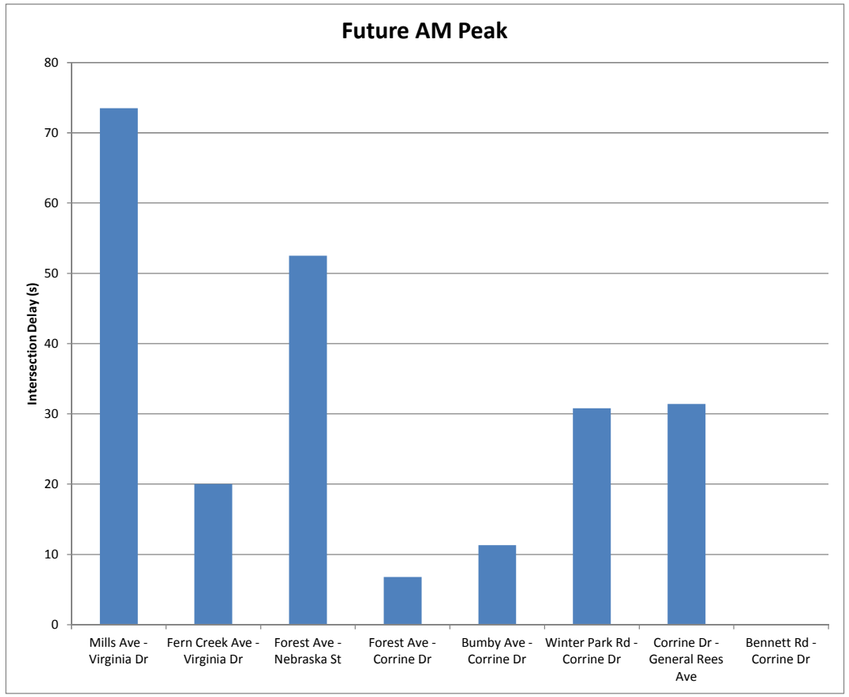
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		70.9		29.1	11.4	59.4		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		45.0		43.0	10.0	29.0		
Max Q Clear Time (g_c+I1), s		6.8		21.1	4.0	13.7		
Green Ext Time (p_c), s		2.1		2.1	0.1	4.0		

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Hybrid Concept and Variation

AM Peak (7:30-8:30am)

Future Year (2040)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	F	E	E	E	
	Delay	71.2	80.2	71.9	69.1	73.5	
	Queue	15.5	76.6	43.7	47.7	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	D	C	B	
	Delay	13.4	18.3	36.8	22.9	20.0	
	Queue	14.4	20.1	16.2	1.2	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	F	C	A	D	D	
	Delay	132.2	34.4	9.6	52.2	52.5	
	Queue	23.9	1.0	5.9	70.4	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	-	A	A	A	
	Delay	43.3	-	1.5	9.2	6.8	
	Queue	0.1	-	3.1	17.9	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	A	D	C	B	
	Delay	16.5	2.7	50.4	28.5	11.3	
	Queue	12.7	4.0	14.4	1.0	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	D	E	C	
	Delay	30.2	24.2	38.3	56.3	30.8	
	Queue	14.1	21.3	9.3	11.0	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	D	-	D	C	
	Delay	24.1	35.1	-	35.9	31.4	
	Queue	20.1	21.7	-	27.4	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	
	LOS	C	C	C	-	C	
	Delay	22.3	20.1	34.3	-	26.5	
	Queue	17.0	10.2	38.2	-	-	
Corridor Travel Time	**EB = 6.5 minutes**						Takeaway
	WB = 13.5 minutes						



Travel Time

	Hybrid (2040)
EB	
Mills	56.9
Fern Creek	48.5
Nebraska	60
Leu Gardens	16.9
Bumby	42.6
Winter Park	44.5
General Rees	50.4
Bennett	70.9
Total	**390.7**
	6.5
WB	
Bennett	28.1
General Rees	65.2
Winter Park	53.7
Bumby	61.1
Leu Gardens	36.2
Nebraska	51.5
Fern Creek	300
Mills	212.7
Total	**808.5**
	13.5

HCM 2010 Signalized Intersection Summary
1: Mills Ave & Virginia Dr

10/10/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Future Volume (veh/h)	73	334	95	334	675	460	113	1237	121	152	1204	108
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.97
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	1900	1859	1900	1863	1881	1863	1792	1863	1863	1900	1848	1900
Adj Flow Rate, veh/h	82	375	107	375	758	517	127	1390	136	171	1353	121
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	1	2	6	2	2	0	3	3
Cap, veh/h	90	575	162	432	674	565	114	1420	625	339	1405	125
Arrive On Green	0.03	0.21	0.21	0.18	0.36	0.36	0.07	0.40	0.40	0.10	0.43	0.43
Sat Flow, veh/h	1810	2717	766	1774	1881	1577	1707	3539	1558	3510	3253	290
Grp Volume(v), veh/h	82	242	240	375	758	517	127	1390	136	171	727	747
Grp Sat Flow(s),veh/h/ln	1810	1766	1717	1774	1881	1577	1707	1770	1558	1755	1755	1787
Q Serve(g_s), s	4.0	20.0	20.5	25.8	57.3	39.7	10.7	61.9	6.0	7.4	64.3	65.3
Cycle Q Clear(g_c), s	4.0	20.0	20.5	25.8	57.3	39.7	10.7	61.9	6.0	7.4	64.3	65.3
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	90	373	363	432	674	565	114	1420	625	339	758	772
V/C Ratio(X)	0.91	0.65	0.66	0.87	1.13	0.92	1.11	0.98	0.22	0.50	0.96	0.97
Avail Cap(c_a), veh/h	90	373	363	453	674	565	114	1425	627	339	758	772
HCM Platoon Ratio	1.00	1.00	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	0.61	0.61	0.61	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	57.6	57.8	39.3	51.3	30.8	74.7	47.2	13.3	68.6	44.1	44.4
Incr Delay (d2), s/veh	65.5	3.9	4.4	10.4	68.4	13.5	117.7	19.3	0.8	1.2	24.2	25.4
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(95%),veh/ln	5.9	15.5	15.4	18.6	76.6	25.1	15.8	43.7	4.8	6.6	46.1	47.7
LnGrp Delay(d),s/veh	125.8	61.5	62.2	49.7	119.7	44.3	192.3	66.5	14.1	69.8	68.3	69.8
LnGrp LOS	F	E	E	D	F	D	F	E	B	E	E	E
Approach Vol, veh/h		564			1650			1653			1645	
Approach Delay, s/veh		71.2			80.2			71.9			69.1	
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	17.0	75.7	10.8	64.0	22.1	70.6	34.3	40.5
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	* 6.4	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	10.7	* 62	* 4	57.3	* 8.4	* 64	30.0	31.9
Max Q Clear Time (g_c+I1), s	12.7	67.3	6.0	59.3	9.4	63.9	27.8	22.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Future Volume (veh/h)	3	543	54	145	1256	28	163	122	87	5	20	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1267	1881	1900	1900	1882	1900	1900	1892	1900	1900	1819	1900
Adj Flow Rate, veh/h	3	610	61	163	1411	31	183	137	98	6	22	8
Adj No. of Lanes	1	1	1	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	50	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	153	1076	904	365	2045	45	255	160	110	97	322	106
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	251	1881	1580	779	3577	79	669	544	372	171	1092	361
Grp Volume(v), veh/h	3	610	61	163	705	737	418	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	251	1881	1580	779	1788	1868	1585	0	0	1624	0	0
Q Serve(g_s), s	0.8	18.5	1.5	15.1	25.1	25.1	21.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.9	18.5	1.5	33.6	25.1	25.1	22.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	0.44		0.23	0.17		0.22
Lane Grp Cap(c), veh/h	153	1076	904	365	1022	1068	525	0	0	525	0	0
V/C Ratio(X)	0.02	0.57	0.07	0.45	0.69	0.69	0.80	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	153	1076	904	365	1022	1068	620	0	0	622	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)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.8	12.2	8.6	22.8	13.6	13.6	30.3	0.0	0.0	22.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.6	0.1	3.9	3.8	3.7	6.5	0.0	0.0	0.1	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(95%),veh/ln	0.1	14.4	1.3	6.5	19.4	20.1	16.2	0.0	0.0	1.2	0.0	0.0
LnGrp Delay(d),s/veh	23.0	13.8	8.7	26.8	17.4	17.3	36.8	0.0	0.0	22.9	0.0	0.0
LnGrp LOS	C	B	A	C	B	B	D			C		
Approach Vol, veh/h		674			1605			418			36	
Approach Delay, s/veh		13.4			18.3			36.8			22.9	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		57.5		32.5		57.5		32.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		46.0		32.0		46.0		32.0
Max Q Clear Time (g_c+I1), s		35.6		24.7		27.9		3.3
Green Ext Time (p_c), s		10.1		1.8		11.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
Future Volume (veh/h)	284	5	1	1	22	1	9	508	1	1	1075	668
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	0.99		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	1900	1900	1900	1900	1900	1900	1863	1900	1900	1881	1881
Adj Flow Rate, veh/h	309	5	1	1	24	1	10	552	1	1	1168	726
Adj No. of Lanes	1	1	0	0	1	0	1	2	0	1	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	0	0	0	0	0	0	2	2	0	1	1
Cap, veh/h	269	461	92	51	120	5	93	2064	4	521	1071	910
Arrive On Green	0.15	0.30	0.30	0.07	0.07	0.07	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1774	1531	306	33	1771	72	243	3625	7	868	1881	1598
Grp Volume(v), veh/h	309	0	6	26	0	0	10	269	284	1	1168	726
Grp Sat Flow(s),veh/h/ln	1774	0	1838	1876	0	0	243	1770	1861	868	1881	1598
Q Serve(g_s), s	11.7	0.0	0.2	0.0	0.0	0.0	0.0	6.0	6.0	0.0	44.0	27.7
Cycle Q Clear(g_c), s	11.7	0.0	0.2	1.0	0.0	0.0	44.0	6.0	6.0	6.0	44.0	27.7
Prop In Lane	1.00		0.17	0.04		0.04	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	553	176	0	0	93	1008	1060	521	1071	910
V/C Ratio(X)	1.15	0.00	0.01	0.15	0.00	0.00	0.11	0.27	0.27	0.00	1.09	0.80
Avail Cap(c_a), veh/h	269	0	856	483	0	0	93	1008	1060	521	1071	910
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	18.9	34.0	0.0	0.0	38.6	8.4	8.4	10.0	16.6	13.1
Incr Delay (d2), s/veh	101.6	0.0	0.0	0.4	0.0	0.0	2.3	0.7	0.6	0.0	55.4	7.2
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(95%),veh/ln	23.9	0.0	0.2	1.0	0.0	0.0	0.5	5.6	5.9	0.0	70.4	19.9
LnGrp Delay(d),s/veh	134.4	0.0	18.9	34.4	0.0	0.0	40.9	9.1	9.1	10.0	72.0	20.3
LnGrp LOS	F		B	C			D	A	A	A	F	C
Approach Vol, veh/h		315			26			563			1895	
Approach Delay, s/veh		132.2			34.4			9.6			52.2	
Approach LOS		F			C			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.0		28.2		49.0	18.0	10.2
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		44.0		36.0		44.0	11.7	18.0
Max Q Clear Time (g_c+I1), s		46.0		2.2		46.0	13.7	3.0
Green Ext Time (p_c), s		0.0		0.0		0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	1	5	795	1700	8
Future Volume (veh/h)	1	1	5	795	1700	8
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	1	5	874	1868	9
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	7	6	165	2994	2392	1070
Arrive On Green	0.00	0.00	0.09	0.83	0.66	0.66
Sat Flow, veh/h	1810	1615	1810	3705	3705	1615
Grp Volume(v), veh/h	1	1	5	874	1868	9
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1805	1805	1615
Q Serve(g_s), s	0.0	0.0	0.2	3.6	23.9	0.1
Cycle Q Clear(g_c), s	0.0	0.0	0.2	3.6	23.9	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	7	6	165	2994	2392	1070
V/C Ratio(X)	0.14	0.16	0.03	0.29	0.78	0.01
Avail Cap(c_a), veh/h	521	465	165	3283	2681	1199
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	32.8	32.8	27.3	1.3	7.8	3.8
Incr Delay (d2), s/veh	9.3	11.8	0.0	0.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.1	0.2	3.1	17.9	0.4
LnGrp Delay(d),s/veh	42.1	44.6	27.4	1.3	9.2	3.8
LnGrp LOS	D	D	C	A	A	A
Approach Vol, veh/h	2			879	1877	
Approach Delay, s/veh	43.3			1.5	9.2	
Approach LOS	D			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		59.7		6.3	11.0	48.7		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		60.0		19.0	6.0	49.0		
Max Q Clear Time (g_c+I1), s		5.6		2.0	2.2	25.9		
Green Ext Time (p_c), s		9.6		0.0	0.0	17.9		

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Future Volume (veh/h)	5	775	55	187	1645	1	105	0	177	14	4	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1865	1900	1792	1881	1900	1900	1829	1900	1900	1900	1900
Adj Flow Rate, veh/h	5	852	60	205	1808	1	115	0	195	15	4	22
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	6	1	1	0	0	0	0	0	0
Cap, veh/h	214	1706	120	417	2403	1	166	11	207	0	54	295
Arrive On Green	0.51	0.51	0.51	0.16	1.00	1.00	0.22	0.00	0.22	0.00	0.21	0.21
Sat Flow, veh/h	264	3353	236	1707	3666	2	500	50	933	0	254	1395
Grp Volume(v), veh/h	5	450	462	205	881	928	310	0	0	0	0	26
Grp Sat Flow(s),veh/h/ln	264	1772	1817	1707	1787	1881	1484	0	0	0	0	1649
Q Serve(g_s), s	0.9	15.1	15.1	5.1	0.0	0.0	17.2	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	0.9	15.1	15.1	5.1	0.0	0.0	18.7	0.0	0.0	0.0	0.0	1.1
Prop In Lane	1.00		0.13	1.00		0.00	0.37		0.63	0.00		0.85
Lane Grp Cap(c), veh/h	214	902	925	417	1172	1233	368	0	0	0	0	348
V/C Ratio(X)	0.02	0.50	0.50	0.49	0.75	0.75	0.84	0.00	0.00	0.00	0.00	0.07
Avail Cap(c_a), veh/h	214	902	925	489	1172	1233	368	0	0	0	0	568
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.42	0.42	0.42	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.1	14.6	14.6	9.3	0.0	0.0	34.4	0.0	0.0	0.0	0.0	28.5
Incr Delay (d2), s/veh	0.2	2.0	1.9	0.4	1.9	1.8	16.0	0.0	0.0	0.0	0.0	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(95%),veh/ln	0.1	12.5	12.7	4.0	1.1	1.1	14.4	0.0	0.0	0.0	0.0	1.0
LnGrp Delay(d),s/veh	11.3	16.5	16.5	9.7	1.9	1.8	50.4	0.0	0.0	0.0	0.0	28.5
LnGrp LOS	B	B	B	A	A	A	D					C
Approach Vol, veh/h		917			2014			310			26	
Approach Delay, s/veh		16.5			2.7			50.4			28.5	
Approach LOS		B			A			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		65.0	0.0	25.0	13.2	51.8		25.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		48.0	5.0	20.0	11.0	31.0		* 31
Max Q Clear Time (g_c+I1), s		2.0	0.0	20.7	7.1	17.1		3.1
Green Ext Time (p_c), s		30.5	0.0	0.0	0.2	6.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Future Volume (veh/h)	108	756	85	170	1300	153	75	52	140	124	30	205
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.99	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	1810	1881	1638	1759	1863	1863	1667	1900	1900	1900	1900	1881
Adj Flow Rate, veh/h	116	813	91	183	1398	165	81	56	151	133	32	220
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	1	16	8	2	2	14	0	0	0	0	1
Cap, veh/h	183	1433	546	336	1573	688	355	90	243	190	264	222
Arrive On Green	0.01	0.13	0.13	0.09	0.44	0.44	0.11	0.20	0.20	0.04	0.14	0.14
Sat Flow, veh/h	1723	3574	1361	1675	3539	1549	1587	450	1214	1810	1900	1596
Grp Volume(v), veh/h	116	813	91	183	1398	165	81	0	207	133	32	220
Grp Sat Flow(s),veh/h/ln	1723	1787	1361	1675	1770	1549	1587	0	1665	1810	1900	1596
Q Serve(g_s), s	3.5	19.2	3.2	5.6	32.6	4.1	0.0	0.0	10.2	0.9	1.3	9.8
Cycle Q Clear(g_c), s	3.5	19.2	3.2	5.6	32.6	4.1	0.0	0.0	10.2	0.9	1.3	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	183	1433	546	336	1573	688	355	0	333	190	264	222
V/C Ratio(X)	0.64	0.57	0.17	0.54	0.89	0.24	0.23	0.00	0.62	0.70	0.12	0.99
Avail Cap(c_a), veh/h	183	1433	546	542	1573	688	355	0	333	211	401	337
HCM Platoon Ratio	0.33	0.33	0.33	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	0.49	0.49	0.49	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	31.7	9.3	16.2	23.0	7.2	30.3	0.0	32.9	40.9	33.9	24.4
Incr Delay (d2), s/veh	5.2	1.2	0.5	0.7	4.2	0.4	0.3	0.0	8.5	8.7	0.2	39.2
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(95%),veh/ln	3.5	14.1	2.3	4.5	21.3	3.2	3.2	0.0	9.3	6.5	1.3	11.0
LnGrp Delay(d),s/veh	27.1	32.9	9.8	16.9	27.1	7.6	30.6	0.0	41.4	49.6	34.1	63.6
LnGrp LOS	C	C	A	B	C	A	C		D	D	C	E
Approach Vol, veh/h		1020			1746			288			385	
Approach Delay, s/veh		30.2			24.2			38.3			56.3	
Approach LOS		C			C			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	10.0	46.0	10.0	24.0	13.9	42.1	15.5	18.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	4.0	39.0	5.0	18.0	19.0	24.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	5.5	34.6	2.9	12.2	7.6	21.2	2.0	11.8
Green Ext Time (p_c), s	0.0	3.7	0.1	0.6	0.4	1.8	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	280	700	1034	84	121	545
Future Volume (veh/h)	280	700	1034	84	121	545
Number	5	2	6	16	7	14
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	1881	1881	1861	1900	1810	1863
Adj Flow Rate, veh/h	292	729	1077	88	126	568
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	2	2	5	2
Cap, veh/h	442	1191	1262	103	402	663
Arrive On Green	0.12	0.42	0.38	0.38	0.23	0.23
Sat Flow, veh/h	1792	1881	3405	270	1723	1583
Grp Volume(v), veh/h	292	729	575	590	126	568
Grp Sat Flow(s),veh/h/ln	1792	1881	1768	1814	1723	1583
Q Serve(g_s), s	8.3	27.1	26.8	26.9	5.4	12.6
Cycle Q Clear(g_c), s	8.3	27.1	26.8	26.9	5.4	12.6
Prop In Lane	1.00			0.15	1.00	1.00
Lane Grp Cap(c), veh/h	442	1191	674	691	402	663
V/C Ratio(X)	0.66	0.61	0.85	0.85	0.31	0.86
Avail Cap(c_a), veh/h	442	1191	727	746	402	663
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	17.3	25.5	25.5	28.5	23.7
Incr Delay (d2), s/veh	2.6	1.8	9.6	9.4	2.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	20.1	21.2	21.7	5.1	27.4
LnGrp Delay(d),s/veh	36.5	19.1	35.1	35.0	30.6	37.1
LnGrp LOS	D	B	D	C	C	D
Approach Vol, veh/h		1021	1165		694	
Approach Delay, s/veh		24.1	35.1		35.9	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.0		27.0	22.7	40.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		57.0		21.0	14.0	37.0		
Max Q Clear Time (g_c+I1), s		29.1		14.6	10.3	28.9		
Green Ext Time (p_c), s		8.0		2.2	0.2	5.4		

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

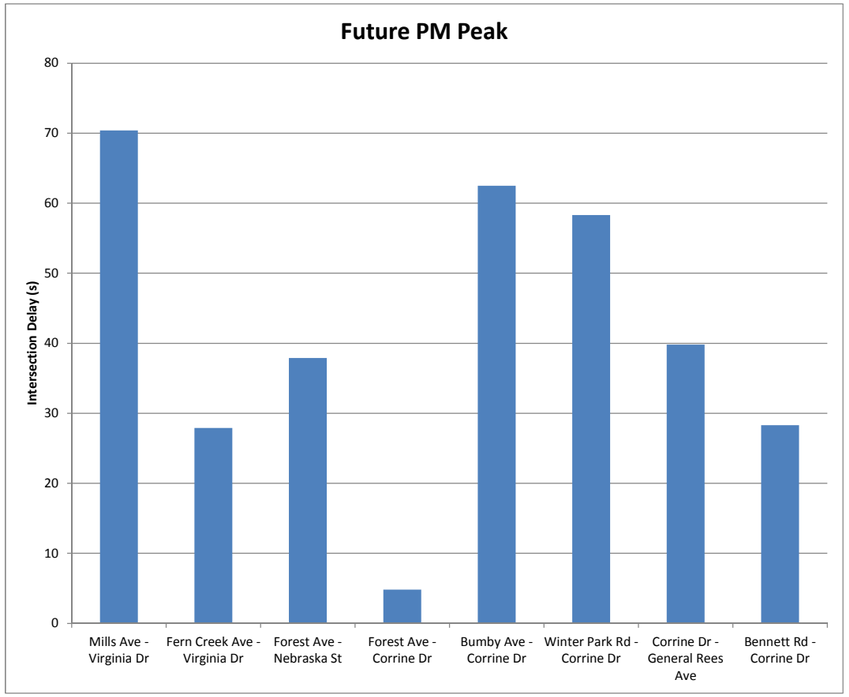
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	300	440	97	340	617	146
Future Volume (veh/h)	300	440	97	340	617	146
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1900	1900	1845	1845
Adj Flow Rate, veh/h	312	458	101	354	643	152
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	0	0	3	3
Cap, veh/h	404	970	435	881	708	632
Arrive On Green	0.21	0.21	0.18	0.46	0.40	0.40
Sat Flow, veh/h	1881	1545	1810	1900	1757	1568
Grp Volume(v), veh/h	312	458	101	354	643	152
Grp Sat Flow(s),veh/h/ln	1881	1545	1810	1900	1757	1568
Q Serve(g_s), s	14.1	14.5	0.0	11.1	31.0	5.8
Cycle Q Clear(g_c), s	14.1	14.5	0.0	11.1	31.0	5.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	404	970	435	881	708	632
V/C Ratio(X)	0.77	0.47	0.23	0.40	0.91	0.24
Avail Cap(c_a), veh/h	481	1033	435	881	839	749
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	33.3	9.3	29.7	15.9	25.3	17.8
Incr Delay (d2), s/veh	7.2	0.5	0.3	1.4	12.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.8	17.0	3.7	10.2	24.4	10.1
LnGrp Delay(d),s/veh	40.5	9.8	30.0	17.3	38.2	18.0
LnGrp LOS	D	A	C	B	D	B
Approach Vol, veh/h	770			455	795	
Approach Delay, s/veh	22.3			20.1	34.3	
Approach LOS	C			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		47.7		42.3	22.4	25.3		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		35.0		43.0	6.0	23.0		
Max Q Clear Time (g_c+I1), s		13.1		33.0	2.0	16.5		
Green Ext Time (p_c), s		3.1		3.3	0.1	2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

PM Peak (5:00-6:00pm)

Future Year (2040)							
Mills Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	F	F	D	E	E	
	Delay	91.3	87.5	51.4	69.4	70.4	
	Queue	28.0	32.1	35.4	56.3	-	
Fern Creek Ave - Virginia Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	B	B	F	C	C	
	Delay	19.8	13.3	82.7	33.6	27.9	
	Queue	35.4	7.8	21.5	5.4	-	
Forest Ave - Nebraska St		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	D	C	D	D	
	Delay	47.4	37.1	34.7	35.7	37.9	
	Queue	24.2	0.5	21.3	24.5	-	
Forest Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	-	A	A	A	
	Delay	28.3	-	3.1	7.2	4.8	
	Queue	0.4	-	9.6	8.1	-	
Bumby Ave - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	E	D	F	C	E	
	Delay	56.6	44.4	129.5	28.3	62.5	
	Queue	62.4	23.2	41.5	0.3	-	
Winter Park Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	C	C	D	F	E	
	Delay	20.7	24.1	52.5	267.8	58.3	
	Queue	26.8	18.4	7.5	29.3	-	
Corrine Dr - General Rees Ave		**EB**	**WB**	**NB**	**SB**	**INT**	Takeaway
	LOS	D	D	-	C	D	
	Delay	42.4	42.7	-	24.8	39.8	
	Queue	85.2	19.1	-	15.2	-	
Bennett Rd - Corrine Dr		**EB**	**WB**	**NB**	**SB**	**INT**	
	LOS	C	C	D	-	C	
	Delay	25.5	20.3	41.7	-	28.3	
	Queue	36.9	10.0	21.5	-	-	
Corridor Travel Time	**EB = 16.7 minutes**						Takeaway
	WB = 7.9 minutes						



Travel Time

Hyrbid (2040)

EB	
Mills	96.5
Fern Creek	92.1
Nebraska	168.6
Leu Gardens	89.6
Bumby	343
Winter Park	58.6
General Rees	71.5
Bennett	80.7
Total	**1000.6**
	16.7
WB	
Bennett	28.3
General Rees	69.5
Winter Park	68.4
Bumby	54.3
Leu Gardens	33.3
Nebraska	42.8
Fern Creek	68
Mills	109.4
Total	**474**
	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Future Volume (veh/h)	125	599	135	117	409	276	136	1224	206	402	1582	77
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.99	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	1881	1900	1900	1863	1881	1881	1900	1881	1900	1845	1882	1900
Adj Flow Rate, veh/h	126	605	136	118	413	279	137	1236	208	406	1598	78
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	2	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	0	0	2	1	1	0	1	0	3	1	1
Cap, veh/h	142	671	150	156	430	363	153	1589	708	445	1698	83
Arrive On Green	0.05	0.23	0.23	0.05	0.23	0.23	0.08	0.44	0.44	0.13	0.49	0.49
Sat Flow, veh/h	1792	2919	655	1774	1881	1589	1810	3574	1592	3408	3471	169
Grp Volume(v), veh/h	126	374	367	118	413	279	137	1236	208	406	820	856
Grp Sat Flow(s),veh/h/ln	1792	1805	1769	1774	1881	1589	1810	1787	1592	1704	1788	1852
Q Serve(g_s), s	9.4	36.2	36.4	9.2	39.1	29.6	13.5	52.9	15.0	21.2	77.9	79.1
Cycle Q Clear(g_c), s	9.4	36.2	36.4	9.2	39.1	29.6	13.5	52.9	15.0	21.2	77.9	79.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	142	415	406	156	430	363	153	1589	708	445	875	906
V/C Ratio(X)	0.88	0.90	0.90	0.75	0.96	0.77	0.90	0.78	0.29	0.91	0.94	0.95
Avail Cap(c_a), veh/h	142	416	408	156	432	364	153	1589	708	481	875	906
HCM Platoon Ratio	1.00	1.00	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	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	67.3	67.4	53.8	68.6	65.0	81.6	42.4	31.9	77.2	43.4	43.7
Incr Delay (d2), s/veh	43.3	22.1	23.0	18.0	32.3	9.2	44.0	3.8	1.1	20.7	18.6	19.3
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(95%),veh/ln	6.0	28.0	27.8	9.0	32.1	19.9	13.5	35.4	11.1	16.8	53.8	56.3
LnGrp Delay(d),s/veh	99.2	89.4	90.4	71.8	100.9	74.1	125.6	46.3	33.0	97.9	62.0	63.0
LnGrp LOS	F	F	F	E	F	E	F	D	C	F	E	E
Approach Vol, veh/h		867			810			1581			2082	
Approach Delay, s/veh		91.3			87.5			51.4			69.4	
Approach LOS		F			F			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	21.5	94.4	16.2	47.9	29.5	86.4	16.0	48.1
Change Period (Y+Rc), s	6.3	* 6.4	* 6.8	6.7	6.0	* 6.4	6.2	6.7
Max Green Setting (Gmax), s	15.2	* 88	* 9.4	41.3	25.4	* 78	9.8	41.5
Max Q Clear Time (g_c+I1), s	15.5	81.1	11.4	41.1	23.2	54.9	11.2	38.4
Green Ext Time (p_c), s	0.0	2.8	0.0	0.1	0.4	3.7	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	70.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Future Volume (veh/h)	4	1126	101	81	695	7	97	77	202	15	105	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		0.98	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	1900	1881	1900	1900	1881	1900	1900	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	4	1149	103	83	709	7	99	79	206	15	107	5
Adj No. of Lanes	1	1	1	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	0	0	0	0
Cap, veh/h	509	1253	1050	136	2415	24	124	80	184	61	345	15
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	746	1881	1576	451	3626	36	368	375	860	95	1611	70
Grp Volume(v), veh/h	4	1149	103	83	349	367	384	0	0	127	0	0
Grp Sat Flow(s),veh/h/ln	746	1881	1576	451	1787	1874	1603	0	0	1775	0	0
Q Serve(g_s), s	0.2	52.4	2.3	14.2	8.1	8.1	15.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.3	52.4	2.3	66.6	8.1	8.1	21.4	0.0	0.0	5.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.26		0.54	0.12		0.04
Lane Grp Cap(c), veh/h	509	1253	1050	136	1190	1248	388	0	0	420	0	0
V/C Ratio(X)	0.01	0.92	0.10	0.61	0.29	0.29	0.99	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	509	1253	1050	136	1190	1248	388	0	0	420	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)	0.50	0.50	0.50	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.7	14.3	6.0	44.5	6.9	6.9	40.1	0.0	0.0	33.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.7	0.1	18.8	0.6	0.6	42.5	0.0	0.0	0.5	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(95%),veh/ln	0.1	35.4	1.9	5.4	7.5	7.8	21.5	0.0	0.0	5.4	0.0	0.0
LnGrp Delay(d),s/veh	8.7	21.1	6.1	63.3	7.6	7.5	82.7	0.0	0.0	33.6	0.0	0.0
LnGrp LOS	A	C	A	E	A	A	F			C		
Approach Vol, veh/h		1256			799			384			127	
Approach Delay, s/veh		19.8			13.3			82.7			33.6	
Approach LOS		B			B			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		72.6		27.4		72.6		27.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		66.6		21.4		66.6		21.4
Max Q Clear Time (g_c+I1), s		68.6		23.4		54.4		7.7
Green Ext Time (p_c), s		0.0		0.0		11.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
Future Volume (veh/h)	550	26	9	0	11	0	11	1087	5	3	607	364
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		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	1900	1832	1900	1900	1900	1900	1520	1881	1900	1900	1881	1881
Adj Flow Rate, veh/h	585	28	10	0	12	0	12	1156	5	3	646	387
Adj No. of Lanes	1	1	0	0	1	0	1	2	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	5	5	0	0	0	25	1	1	0	1	1
Cap, veh/h	620	646	231	0	164	0	110	1407	6	131	725	602
Arrive On Green	0.34	0.50	0.50	0.00	0.09	0.00	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1810	1290	461	0	1900	0	444	3650	16	491	1881	1561
Grp Volume(v), veh/h	585	0	38	0	12	0	12	566	595	3	646	387
Grp Sat Flow(s),veh/h/ln	1810	0	1750	0	1900	0	444	1787	1878	491	1881	1561
Q Serve(g_s), s	27.6	0.0	1.0	0.0	0.5	0.0	2.3	25.0	25.0	0.5	28.3	17.8
Cycle Q Clear(g_c), s	27.6	0.0	1.0	0.0	0.5	0.0	30.5	25.0	25.0	25.5	28.3	17.8
Prop In Lane	1.00		0.26	0.00		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	620	0	876	0	164	0	110	689	724	131	725	602
V/C Ratio(X)	0.94	0.00	0.04	0.00	0.07	0.00	0.11	0.82	0.82	0.02	0.89	0.64
Avail Cap(c_a), veh/h	654	0	1117	0	389	0	110	689	724	131	725	602
HCM Platoon Ratio	1.00	1.00	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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	11.2	0.0	36.9	0.0	39.6	24.3	24.3	35.8	25.3	22.1
Incr Delay (d2), s/veh	21.7	0.0	0.0	0.0	0.2	0.0	2.0	10.6	10.2	0.3	15.4	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(95%),veh/ln	24.2	0.0	0.8	0.0	0.5	0.0	0.6	20.5	21.3	0.1	24.5	13.3
LnGrp Delay(d),s/veh	49.7	0.0	11.2	0.0	37.1	0.0	41.6	34.9	34.5	36.1	40.7	27.3
LnGrp LOS	D		B		D		D	C	C	D	D	C
Approach Vol, veh/h		623			12			1173			1036	
Approach Delay, s/veh		47.4			37.1			34.7			35.7	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		38.9		49.0		38.9	36.4	12.6
Change Period (Y+Rc), s		5.0		5.0		5.0	6.3	5.0
Max Green Setting (Gmax), s		33.9		56.1		33.9	31.8	18.0
Max Q Clear Time (g_c+I1), s		32.5		3.0		30.3	29.6	2.5
Green Ext Time (p_c), s		1.0		0.2		2.0	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	5	5	1636	960	4
Future Volume (veh/h)	13	5	5	1636	960	4
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	14	5	5	1740	1021	4
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	58	52	193	2788	2081	931
Arrive On Green	0.03	0.03	0.11	0.77	0.58	0.58
Sat Flow, veh/h	1810	1615	1810	3705	3705	1615
Grp Volume(v), veh/h	14	5	5	1740	1021	4
Grp Sat Flow(s),veh/h/ln	1810	1615	1810	1805	1805	1615
Q Serve(g_s), s	0.4	0.2	0.1	11.9	9.4	0.1
Cycle Q Clear(g_c), s	0.4	0.2	0.1	11.9	9.4	0.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	58	52	193	2788	2081	931
V/C Ratio(X)	0.24	0.10	0.03	0.62	0.49	0.00
Avail Cap(c_a), veh/h	612	546	193	4499	3792	1696
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	26.5	26.4	22.5	2.8	7.0	5.1
Incr Delay (d2), s/veh	2.1	0.8	0.0	0.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.3	0.1	9.6	8.1	0.2
LnGrp Delay(d),s/veh	28.7	27.2	22.5	3.1	7.2	5.1
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	19			1745	1025	
Approach Delay, s/veh	28.3			3.1	7.2	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.4		7.8	11.0	37.4		
Change Period (Y+Rc), s		5.0		6.0	5.0	5.0		
Max Green Setting (Gmax), s		70.0		19.0	6.0	59.0		
Max Q Clear Time (g_c+I1), s		13.9		2.4	2.1	11.4		
Green Ext Time (p_c), s		29.5		0.0	0.0	11.8		

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Future Volume (veh/h)	21	1632	110	218	900	12	115	5	344	6	5	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
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		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	1900	1882	1900	1881	1881	1900	1900	1877	1900	1900	1754	1900
Adj Flow Rate, veh/h	23	1755	118	234	968	13	124	5	370	6	5	4
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	1	1	1	0	0	0	25	25	25
Cap, veh/h	360	1736	116	179	2275	31	137	12	300	0	226	181
Arrive On Green	0.51	0.51	0.51	0.06	0.63	0.63	0.26	0.26	0.26	0.00	0.25	0.25
Sat Flow, veh/h	582	3403	227	1792	3610	48	356	46	1152	0	903	722
Grp Volume(v), veh/h	23	914	959	234	479	502	499	0	0	0	0	9
Grp Sat Flow(s),veh/h/ln	582	1788	1842	1792	1787	1871	1554	0	0	0	0	1625
Q Serve(g_s), s	2.1	51.0	51.0	6.0	13.6	13.6	23.2	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	3.6	51.0	51.0	6.0	13.6	13.6	25.0	0.0	0.0	0.0	0.0	0.4
Prop In Lane	1.00		0.12	1.00		0.03	0.25		0.74	0.00		0.44
Lane Grp Cap(c), veh/h	360	912	939	179	1126	1179	433	0	0	0	0	406
V/C Ratio(X)	0.06	1.00	1.02	1.30	0.43	0.43	1.15	0.00	0.00	0.00	0.00	0.02
Avail Cap(c_a), veh/h	360	912	939	179	1126	1179	433	0	0	0	0	601
HCM Platoon Ratio	1.00	1.00	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	0.61	0.61	0.61	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	24.5	24.5	29.4	9.4	9.4	37.9	0.0	0.0	0.0	0.0	28.3
Incr Delay (d2), s/veh	0.3	30.3	34.8	159.2	0.7	0.7	91.6	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(95%),veh/ln	0.7	58.5	62.4	23.2	10.2	10.6	41.5	0.0	0.0	0.0	0.0	0.3
LnGrp Delay(d),s/veh	13.6	54.8	59.3	188.5	10.1	10.0	129.5	0.0	0.0	0.0	0.0	28.3
LnGrp LOS	B	F	F	F	B	B	F					C
Approach Vol, veh/h		1896			1215			499			9	
Approach Delay, s/veh		56.6			44.4			129.5			28.3	
Approach LOS		E			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4	5	6		8
Phs Duration (G+Y+Rc), s		69.0	0.0	31.0	12.0	57.0		31.0
Change Period (Y+Rc), s		6.0	6.0	5.0	6.0	6.0		* 6
Max Green Setting (Gmax), s		52.0	5.0	26.0	6.0	40.0		* 37
Max Q Clear Time (g_c+I1), s		15.6	0.0	27.0	8.0	53.0		2.4
Green Ext Time (p_c), s		10.9	0.0	0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Future Volume (veh/h)	305	1567	60	20	831	157	50	70	44	221	75	220
Number	1	6	16	5	2	12	7	4	14	3	8	18
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	0.91		0.97	0.98		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	1881	1880	1900	1792	1881	1900	1900	1856	1900	1881	1900	1881
Adj Flow Rate, veh/h	335	1722	66	22	913	173	55	77	48	243	82	242
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	6	1	1	0	2	2	1	0	1
Cap, veh/h	397	2050	78	136	1470	278	202	161	101	137	237	193
Arrive On Green	0.11	0.58	0.58	0.02	0.49	0.49	0.07	0.15	0.15	0.04	0.12	0.12
Sat Flow, veh/h	1792	3508	134	1707	2986	566	1810	1058	659	1792	1900	1548
Grp Volume(v), veh/h	335	873	915	22	546	540	55	0	125	243	82	242
Grp Sat Flow(s),veh/h/ln	1792	1786	1856	1707	1787	1765	1810	0	1717	1792	1900	1548
Q Serve(g_s), s	10.3	46.9	47.7	0.8	26.4	26.4	0.0	0.0	7.9	5.0	4.7	11.1
Cycle Q Clear(g_c), s	10.3	46.9	47.7	0.8	26.4	26.4	0.0	0.0	7.9	5.0	4.7	11.1
Prop In Lane	1.00		0.07	1.00		0.32	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	397	1043	1084	136	880	868	202	0	262	137	237	193
V/C Ratio(X)	0.84	0.84	0.84	0.16	0.62	0.62	0.27	0.00	0.48	1.77	0.35	1.26
Avail Cap(c_a), veh/h	490	1043	1084	165	880	868	202	0	262	137	306	249
HCM Platoon Ratio	1.00	1.00	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	0.68	0.68	0.68	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	19.9	20.1	20.7	21.9	21.9	50.8	0.0	45.7	54.5	47.3	29.7
Incr Delay (d2), s/veh	1.1	0.8	0.8	0.4	2.2	2.3	3.3	0.0	6.1	376.5	0.9	148.8
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(95%),veh/ln	6.9	25.6	26.8	0.7	18.4	18.4	3.3	0.0	7.5	29.3	4.5	23.0
LnGrp Delay(d),s/veh	20.3	20.7	20.9	21.1	24.2	24.2	54.1	0.0	51.8	430.9	48.1	178.5
LnGrp LOS	C	C	C	C	C	C	D		D	F	D	F
Approach Vol, veh/h		2123			1108			180			567	
Approach Delay, s/veh		20.7			24.1			52.5			267.8	
Approach LOS		C			C			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	18.9	64.1	11.0	24.0	8.1	74.9	14.3	20.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	19.0	52.0	5.0	18.0	4.0	67.0	4.0	19.0
Max Q Clear Time (g_c+I1), s	12.3	28.4	7.0	9.9	2.8	49.7	2.0	13.1
Green Ext Time (p_c), s	0.6	10.6	0.0	0.4	0.0	14.2	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	58.3
HCM 2010 LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	510	1273	683	133	149	320
Future Volume (veh/h)	510	1273	683	133	149	320
Number	5	2	6	16	7	14
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	1900	1881	1878	1900	1863	1900
Adj Flow Rate, veh/h	560	1399	751	146	164	352
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	1	2	0
Cap, veh/h	713	1317	894	174	319	838
Arrive On Green	0.34	0.70	0.30	0.30	0.18	0.18
Sat Flow, veh/h	1810	1881	3061	577	1774	1615
Grp Volume(v), veh/h	560	1399	452	445	164	352
Grp Sat Flow(s),veh/h/ln	1810	1881	1784	1760	1774	1615
Q Serve(g_s), s	21.6	70.0	23.7	23.7	8.4	0.0
Cycle Q Clear(g_c), s	21.6	70.0	23.7	23.7	8.4	0.0
Prop In Lane	1.00			0.33	1.00	1.00
Lane Grp Cap(c), veh/h	713	1317	537	530	319	838
V/C Ratio(X)	0.79	1.06	0.84	0.84	0.51	0.42
Avail Cap(c_a), veh/h	713	1317	607	598	319	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.25	0.25	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	15.0	32.7	32.7	37.0	14.8
Incr Delay (d2), s/veh	1.4	33.0	10.0	10.1	5.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.9	85.2	19.1	18.9	8.1	15.2
LnGrp Delay(d),s/veh	28.4	48.0	42.7	42.8	42.8	16.4
LnGrp LOS	C	F	D	D	D	B
Approach Vol, veh/h		1959	897		516	
Approach Delay, s/veh		42.4	42.7		24.8	
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		76.0		24.0	39.9	36.1		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		70.0		18.0	30.0	34.0		
Max Q Clear Time (g_c+I1), s		72.0		10.4	23.6	25.7		
Green Ext Time (p_c), s		0.0		1.7	0.8	4.4		

Intersection Summary	
HCM 2010 Ctrl Delay	39.8
HCM 2010 LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	467	872	181	365	465	149
Future Volume (veh/h)	467	872	181	365	465	149
Number	6	16	5	2	7	14
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	1881	1881	1845	1863	1881	1881
Adj Flow Rate, veh/h	497	928	193	388	495	159
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	3	2	1	1
Cap, veh/h	658	1053	391	1064	553	494
Arrive On Green	0.35	0.35	0.16	0.57	0.31	0.31
Sat Flow, veh/h	1881	1597	1757	1863	1792	1599
Grp Volume(v), veh/h	497	928	193	388	495	159
Grp Sat Flow(s),veh/h/ln	1881	1597	1757	1863	1792	1599
Q Serve(g_s), s	23.3	35.0	3.5	11.3	26.4	7.6
Cycle Q Clear(g_c), s	23.3	35.0	3.5	11.3	26.4	7.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	658	1053	391	1064	553	494
V/C Ratio(X)	0.75	0.88	0.49	0.36	0.89	0.32
Avail Cap(c_a), veh/h	658	1053	391	1064	681	608
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	28.7	11.8	34.8	11.6	33.0	26.5
Incr Delay (d2), s/veh	5.3	9.1	1.0	1.0	13.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	18.9	36.9	8.4	10.0	21.5	12.0
LnGrp Delay(d),s/veh	34.0	20.9	35.7	12.6	46.4	27.0
LnGrp LOS	C	C	D	B	D	C
Approach Vol, veh/h	1425			581	654	
Approach Delay, s/veh	25.5			20.3	41.7	
Approach LOS	C			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		63.1		36.9	22.1	41.0		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		50.0		38.0	9.0	35.0		
Max Q Clear Time (g_c+I1), s		13.3		28.4	5.5	37.0		
Green Ext Time (p_c), s		4.0		2.5	0.2	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	28.3
HCM 2010 LOS	C