

**TRAFFIC STUDY**  
**Neighborhoods at Lugonia Village**  
**City of Redlands**

*Prepared for:*  
*City of Redlands*  
*35 Cajon Street, Suite 15A*  
*Redlands, CA 92373*

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# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

The purpose of the Traffic Study (Study) is to document the traffic analysis findings of the proposed development of the Neighborhoods at Lugonia Village Project (Project) in the City of Redlands (City). Scenarios examined included Existing and Existing with Project. Key analysis measures evaluated included level of service (LOS) and delay. A separate memorandum documents the VMT Screening for this Project.

## 1.2 PROJECT DESCRIPTION

The Project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. The Project plans to have three distinct residential land-uses, each with separate access. For the purposes of this Study, they are referred to as Neighborhoods A1, A2, and B. Neighborhood A1 consists of 430 multi-family dwelling units, Neighborhood A2 consists of 70 townhomes, and Neighborhood B consist of 19 single family dwelling units.

The study analyzed project-related traffic under two scenarios:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan shown later in this report. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would experience different local distribution patterns.

In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

The following study intersections with the City of Redlands and Caltrans jurisdiction were examined as part of this analysis:

1. W San Bernardino Avenue/I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W Lugonia Avenue / Citrus Plaza Drive
8. W Lugonia Avenue / Project Driveway (Future)
9. W Lugonia Avenue / New York Street and Project Driveway
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street

12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

### 1.3 ANALYSIS FINDINGS

The operational analysis findings are as follows:

#### **Existing Condition**

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

#### **Existing With Project (Scenario A)**

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at acceptable overall LOS D or better during both the AM Peak Hour and PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

#### **Existing With Project (Scenario B)**

The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Similar to Scenario A, since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

#### **Vehicle Miles Traveled**

A VMT assessment was prepared for the Neighborhoods at Lugonia Village Project under a separate memorandum.

## 1.4 ROADWAY IMPROVEMENTS

While the LOS analysis indicates that off-site roadway operational improvements are not required, the proposed Project would construct roadway network improvements associated with the development operations including:

- Half-width construction along W Lugonia Avenue Project frontage.
- Half-width construction along Pennsylvania Avenue Project frontage. The length of this improvement would vary between Scenario A and B since Scenario A ends at a cul-de-sac west of Karon Street while Scenario B extends all the way to Karon Street.
- Half-width construction along Karon Street Project frontage.
- Construct one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue (#3). East leg of intersection to be full-width improvement.
- Construct a one-way-stop-controlled driveway to create a new T-intersection along W Lugonia Avenue, west of New York Street (#8).
- Construct a signal-controlled driveway at the intersection of W Lugonia Avenue and New York Street/Project Driveway (#9).
- Modify traffic signal at W Lugonia Avenue and New York Street/Project Driveway (#9) to accommodate new north intersection leg.
- Construct a full-width fourth leg of the stop control intersection of Pennsylvania Avenue and Karon Street (**Scenario B only**). Specifically, construct the west leg of the intersection to connect the newly constructed Pennsylvania Avenue to the existing three-legged intersection.

These improvements were assumed in the Existing With Project scenario traffic operations analysis. As there are no adverse effects at any of the study intersections with the addition of project related traffic; therefore, no other improvements are needed or proposed.

## 2 INTRODUCTION

The purpose of the Traffic Study is to document the traffic analysis findings of the proposed development of the Neighborhoods at Lugonia Village Project in the City of Redlands. Scenarios examined included Existing and Existing with Project. Key analysis measures evaluated included level of service (LOS) and vehicle delay. A separate memorandum documents the VMT Screening for this Project.

### 2.1 PROJECT DESCRIPTION

The Project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. The Project plans to construct each residential land use with varying access. Neighborhood A1, consisting of 430 multi-family dwelling units, will have access via two driveways along W Lugonia Avenue. Neighborhood A2, consisting of 70 townhomes, will have access via a single driveway along the future planned Pennsylvania Street. Neighborhood B, consisting of 19 single family dwelling units, will have access provided via Karon Street. Regionally, the Project site is located within the City of Redlands (City), within the County of San Bernardino (County) as shown in **Exhibit 2-1**. Locally, the Project site location is along on the Northwest quadrant of the intersection of W. Lugonia Avenue and Karon Street, as shown in **Exhibit 2-2**.

EXHIBIT 2-1: PROJECT LOCATION





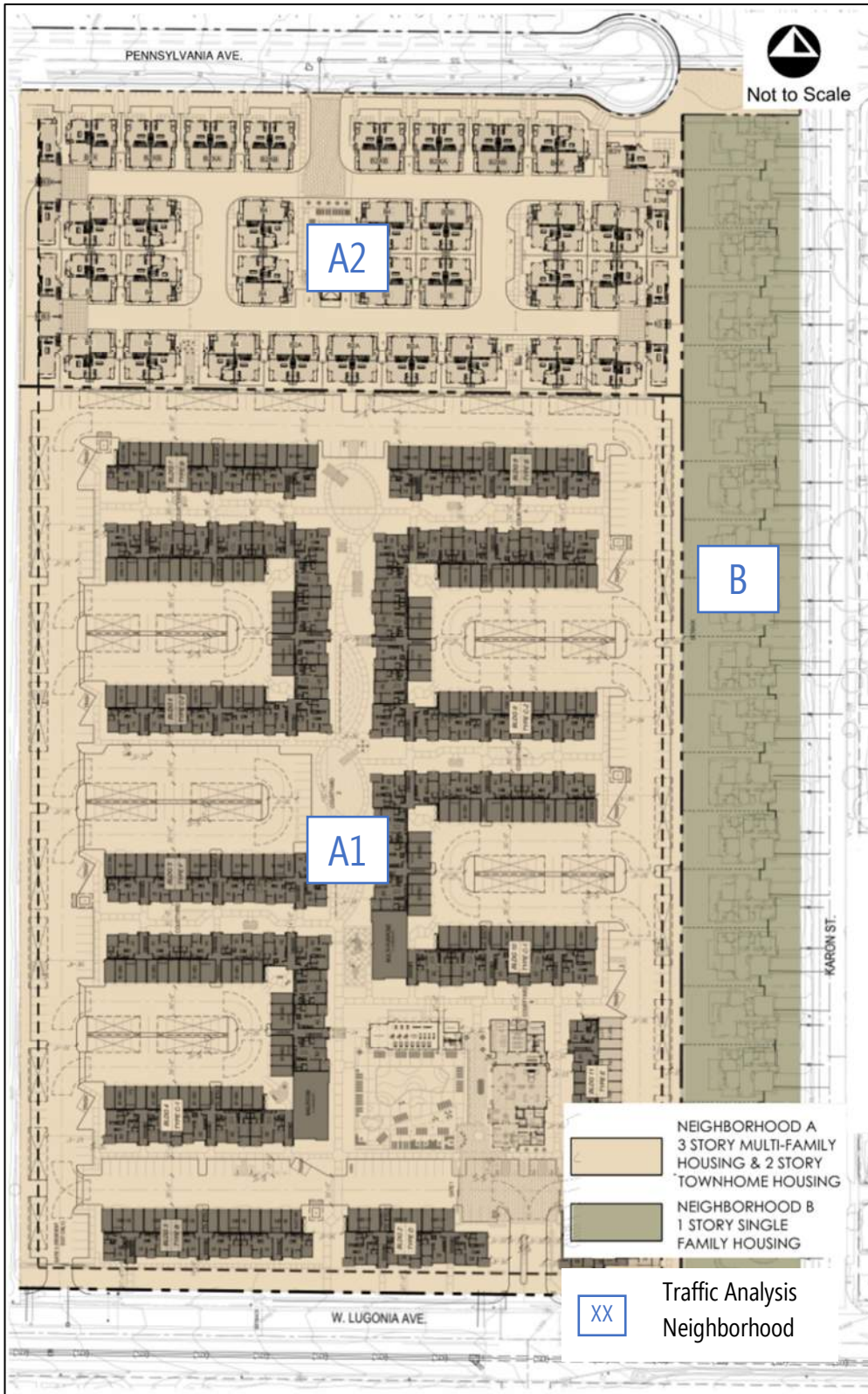
EXHIBIT 2-2: PROJECT SITE LOCATION



2.2 SITE PLAN

The Project condition site plan is shown in **Exhibit 2-3**. A total of 519 residences are expected: 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. Neighborhood A1’s access is along W Lugonia Avenue via two site driveways including one full access driveway and one exit only access driveway. Neighborhood A2’s access is along Pennsylvania Avenue via one full access driveway. Neighborhood B’s access is along Karon Street via individual residential driveways.

EXHIBIT 2-3: PROJECT SITE PLAN



Note:

- 1) Sourced from Architects Orange, Angeleno Associates Inc., and Archi2Group. Traffic Analysis Neighborhood labels added by MBI.
- 2) Site plan shows the Scenario A condition with a cul-de-sac on Pennsylvania Avenue.
- 3) Site plan depicts full-width construction on Pennsylvania Avenue rather than the recommended half-width construction.

### 2.3 ANALYSIS SCENARIOS

The study analyzed project-related traffic under two roadway network conditions:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

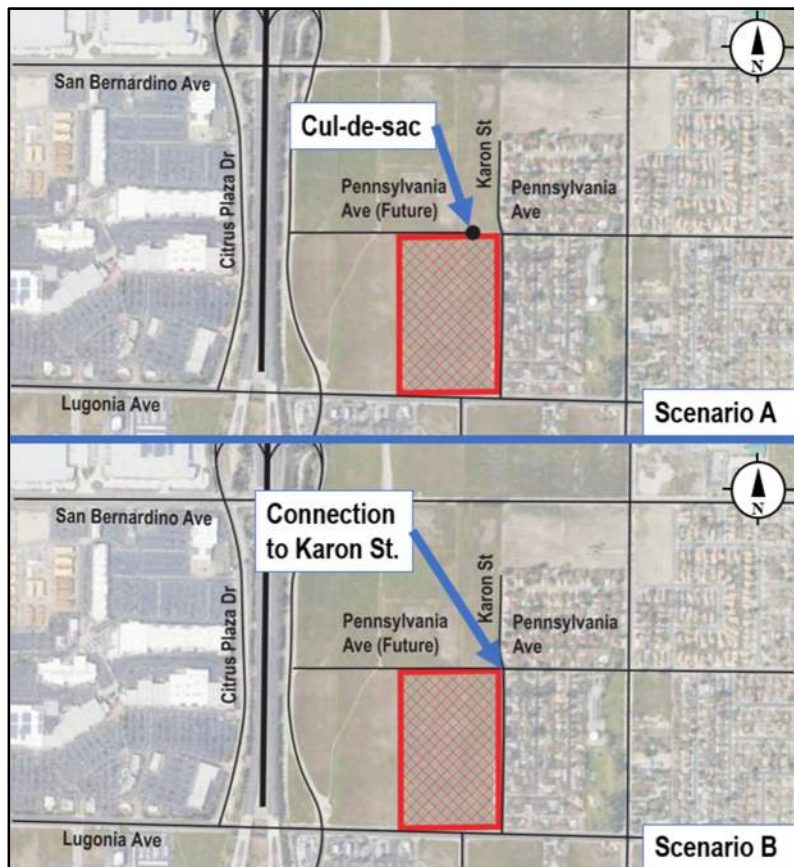
Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would likely experience different local distribution patterns.

**Exhibit 2-4** shows the difference along Pennsylvania Avenue between Scenario A and Scenario B. In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

Michael Baker International (Michael Baker) coordinated with City staff on the study assumptions such as trip generation, trip distribution, study locations, scenarios, and study methodology. The approved scoping letter can be found in **Appendix A**.

**EXHIBIT 2-4: SCENARIO A AND B COMPARISON**



## 2.4 STUDY INTERSECTIONS

The following study intersections were examined as part of this analysis:

1. W San Bernardino Avenue/I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W Lugonia Avenue / Citrus Plaza Drive
8. W Lugonia Avenue / Project Driveway (Future)
9. W Lugonia Avenue / New York Street and Project Driveway
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street
12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

These thirteen (13) intersections have been identified in coordination with City staff as potential locations impacted by the proposed Project. It should be noted that Intersections #3 and #8 do not exist without the Project and were not analyzed under the Existing condition.

### 3 ANALYSIS METHODOLOGY

#### 3.1 LEVEL OF SERVICE ANALYSIS METHODOLOGIES

As required by City of Redlands, this traffic study has been prepared in accordance with the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020), the *City of Redlands Measure U Growth Management Initiative*, and the *County of San Bernardino Transportation Impact Study Guidelines* (July 9, 2019). The key measures of effectiveness for this study are level of service (LOS) and average vehicle delay in average seconds per vehicle.

LOS is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection. The *Highway Capacity Manual* (HCM) 6<sup>th</sup> Edition published by the Transportation Research Board in 2016 was utilized in this analysis to determine the operating LOS at each of the study intersections. LOS can range from LOS A (free-flow conditions) to LOS F (severely congested conditions). Delay in average seconds per vehicle (sec/veh) passing through the intersection, is the primary measure of effectiveness for signalized, stop-controlled, and roundabout intersections. The corresponding average stopped delay experienced per vehicle by LOS is shown in **Table 3-1**.

**TABLE 3-1: HCM INTERSECTION LEVEL OF SERVICE THRESHOLDS**

Level of Service	Signalized Intersection Average Delay (seconds/vehicle)	Two-Way Stop-Controlled, All-Way Stop-Controlled, and Roundabout Control Delay (seconds/vehicle)
LOS A	$x \leq 10$	$x \leq 10$
LOS B	$10 < x \leq 20$	$10 < x \leq 15$
LOS C	$20 < x \leq 35$	$15 < x \leq 25$
LOS D	$35 < x \leq 55$	$25 < x \leq 35$
LOS E	$55 < x \leq 80$	$35 < x \leq 50$
LOS F	$80 < x$	$50 < x$

**Notes:**

- 1) If the volume-to-capacity ratio (v/c) > 1.0, LOS = F.
- 2) Sourced from *Highway Capacity Manual*, 6<sup>th</sup> Edition.

LOS is reported for the average stopped delay per vehicle for the overall intersection (all movements) for signalized intersections, all-way stop-controlled, and roundabout intersections. For one-way or two-way stop-controlled intersections, LOS is reported for the worst stop-controlled approach. LOS and delay for the intersection analysis was conducted with Synchro (version 11) software and HCM 6<sup>th</sup> Edition results were reported.

### 3.2 MEASURE U

Measure U is a local growth management initiative and contains policies for traffic LOS within the City of Redlands. As stated in Measure U, the City of Redlands has adopted LOS “C” or better as acceptable operating conditions for intersections during the peak hour. In accordance with the Measure U, the following guiding policies are used for level of service standards for traffic operations:

- “5.20a – Maintain LOS C or better as the standard at all intersections presently operating at LOS C or better.”
- “5.20b – Within the area identified in GP Figure 5-1, including the unincorporated County area identified on GP Figure 5-1 as the “donut hole”, maintain LOS C or better; however, accept a reduced LOS on a case-by-case basis upon approval by four-fifths (4/5ths) vote of the total authorized membership of the City Council.”
- “5.20c – Where the current LOS at a location within the City of Redlands is below the LOS C standard, no development project shall be approved that cannot be mitigated so that it does not reduce the existing level of service at the location except as provided in Section 5.20b.”

The Project is not located in the unincorporated County area known as the “donut hole” therefore 5.20b does not apply. Only 5.20a and 5.20c were considered for this Project.

### 3.3 CALTRANS FACILITIES

Within the study area, several study intersections are identified under Caltrans jurisdiction. These include the intersections of: W San Bernardino Avenue & I-210 Southbound Ramps (#1), W San Bernardino Avenue / I-210 Northbound Ramps (#2), Tennessee Street / I-10 Westbound Ramps (#5), and Tennessee Street / I-10 Eastbound Ramps (#6).

### 3.4 PERFORMANCE CRITERIA

The various performance criteria are summarized in **Table 3-2**.

**TABLE 3-2: PERFORMANCE CRITERIA**

Jurisdiction	Acceptable Performance Criteria	Source
City of Redlands	Preferred: LOS C or better Minimum: Maintain existing LOS (if below LOS C)	City of Redlands Measure U Growth Management Initiative (December 1997)
County of San Bernardino	LOS D or better	San Bernardino County Transportation Impact Study Guidelines (July 2019)
Caltrans	Preferred: LOS C or better Minimum: LOS D or better (Maintain existing LOS if below LOS D)	Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002)

For the purpose of this evaluation, LOS D has been established as the minimum acceptable conditions for Caltrans facilities. For City facilities, the following thresholds would require improvements:

- If the addition of project related traffic causes an intersection’s peak hour LOS to worsen from acceptable (LOS C or better) to unacceptable (LOS D, E, or F), the project shall identify improvements to improve operations to LOS C or better; or
- Where the current LOS is below the LOS C standard (LOS D, E, or F) without the project and the addition of project related traffic worsens the pre-project level of service grade, the project shall identify improvements to maintain the pre-project level of service grade.

## 4 EXISTING CONDITION

### 4.1 ROADWAY NETWORK

The analysis study area roadway network is described below.

**W Lugonia Avenue** west of Tennessee Street is generally a 4-lane undivided roadway in the City of Redlands. East of Tennessee Street, W Lugonia Avenue is generally a 4-lane undivided roadway with one travel lane in the westbound direction and 2 travel lanes in the eastbound direction. Regionally, it travels east-west from west of Research Drive to Wabash Avenue in the East. The City of Redlands General Plan dated December 2017 (Redlands General Plan) identifies the section of W Lugonia Ave along the Project site frontage as a Major Arterial. To the west of the Project area, E. 7<sup>th</sup> Street is classified as a Minor Arterial. The posted speed limit on W Lugonia Avenue within the Project vicinity is 35 miles per hour (mph).

**W San Bernardino Ave** west of Citrus Plaza Drive is a four-lane divided roadway in the City of Redlands. East of Tennessee Avenue, W San Bernardino Avenue is a 2-lane undivided roadway. Regionally, it travels east-west from Tippecanoe Avenue in the west to Crafton Ave in the east. Within the City, the roadway has an interchange with I-210. The Redlands General Plan identifies W San Bernardino Avenue as a Major Arterial. The current posted speed limit on W San Bernardino Avenue is 45 mph.

**Tennessee Street** north of W Lugonia Ave is a two-lane divided roadway in the City of Redlands. South of W Lugonia Avenue, Tennessee Street is a four-lane undivided roadway. Regionally it travels north-south from W San Bernardino Avenue in the north to Brookside Avenue in the south. Within the City, the roadway has an interchange with I-10. The Redlands General Plan identifies Tennessee Street as a Minor Arterial.

**New York Street** is a two-lane undivided roadway in the City of Redlands. Regionally, it travels north-south from W Lugonia Avenue in the north to Texas Street in the south. The Redlands General Plan identifies New York Street as a Collector. The current posted speed limit on New York Street is 40 mph.

**Karon Street** is a two-lane undivided roadway in the City of Redlands. It travels north-south from near Elise Drive in the north to W Lugonia Avenue in the south. The Redlands General Plan identifies Karon Street as a Local Road. The prima facie speed limit is 25 mph.

**Pennsylvania Avenue** is a two-lane undivided roadway within the Project limits in the City of Redlands. It travels east-west from Judson Street in the east to Karon Street in the west. Pennsylvania Avenue does not currently exist between Tennessee Street and Karon Street. While Pennsylvania Avenue between Tennessee Street and Karon Street is not included in the Redlands General Plan, it identifies Pennsylvania Avenue east of Karon Street as a Local Road. The posted speed limit is 30 mph.

**Texas Street** is a two-lane undivided roadway within the Project limits in the City of Redlands. South of W Colton Avenue, it is a four-lane undivided roadway. It travels north-south from near Domestic Avenue in the north to W Redlands Boulevard in the south. The Redlands General Plan identifies Pennsylvania Avenue within the Project limits as a Minor Arterial. The posted speed limit is 40 mph.

**Exhibit 4-1** shows the Existing study intersection lane geometry. **Exhibit 4-2** shows the Redlands General Plan Circulation Element Roadway Classifications.

EXHIBIT 4-1: EXISTING LANE GEOMETRY

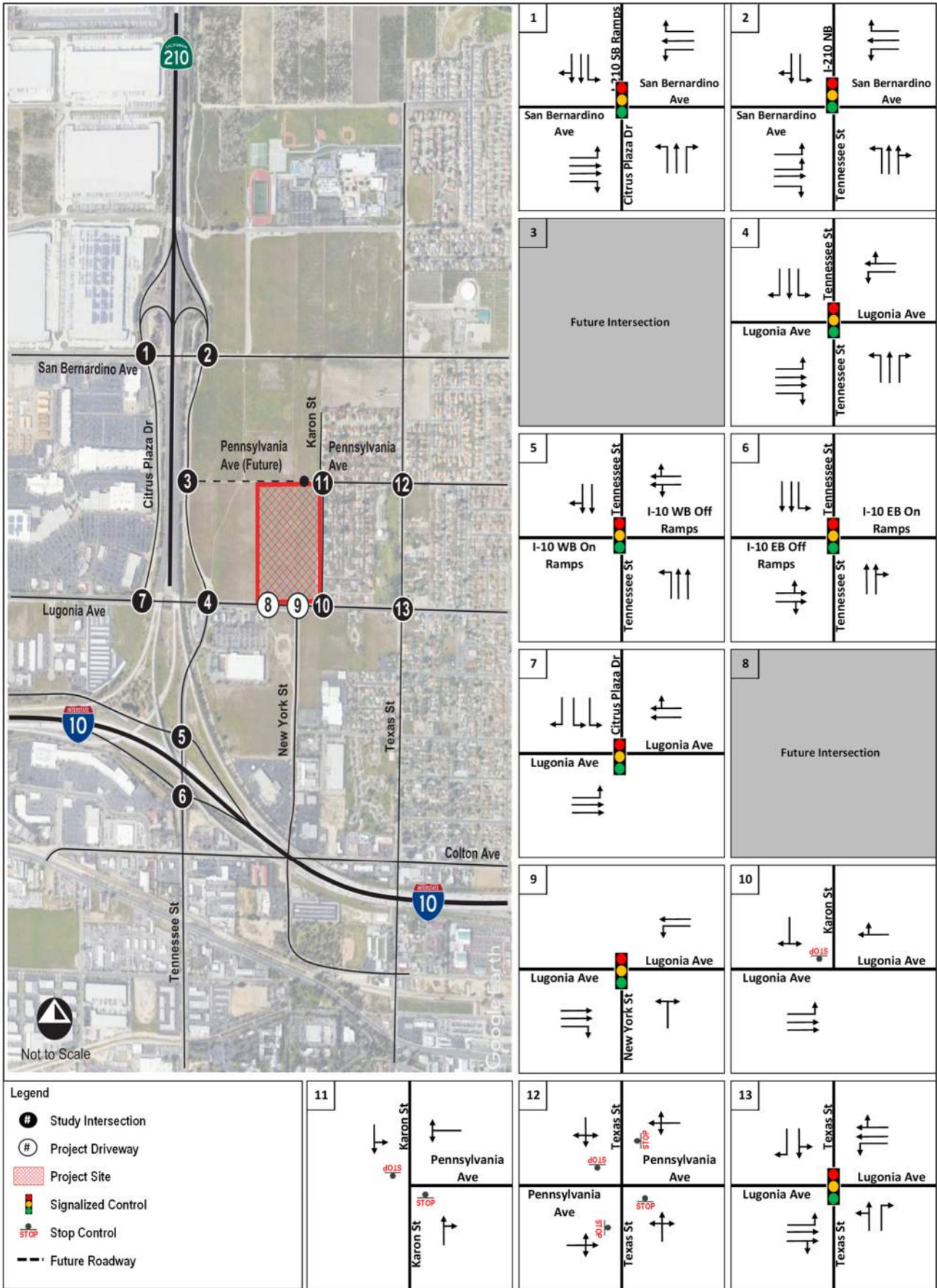
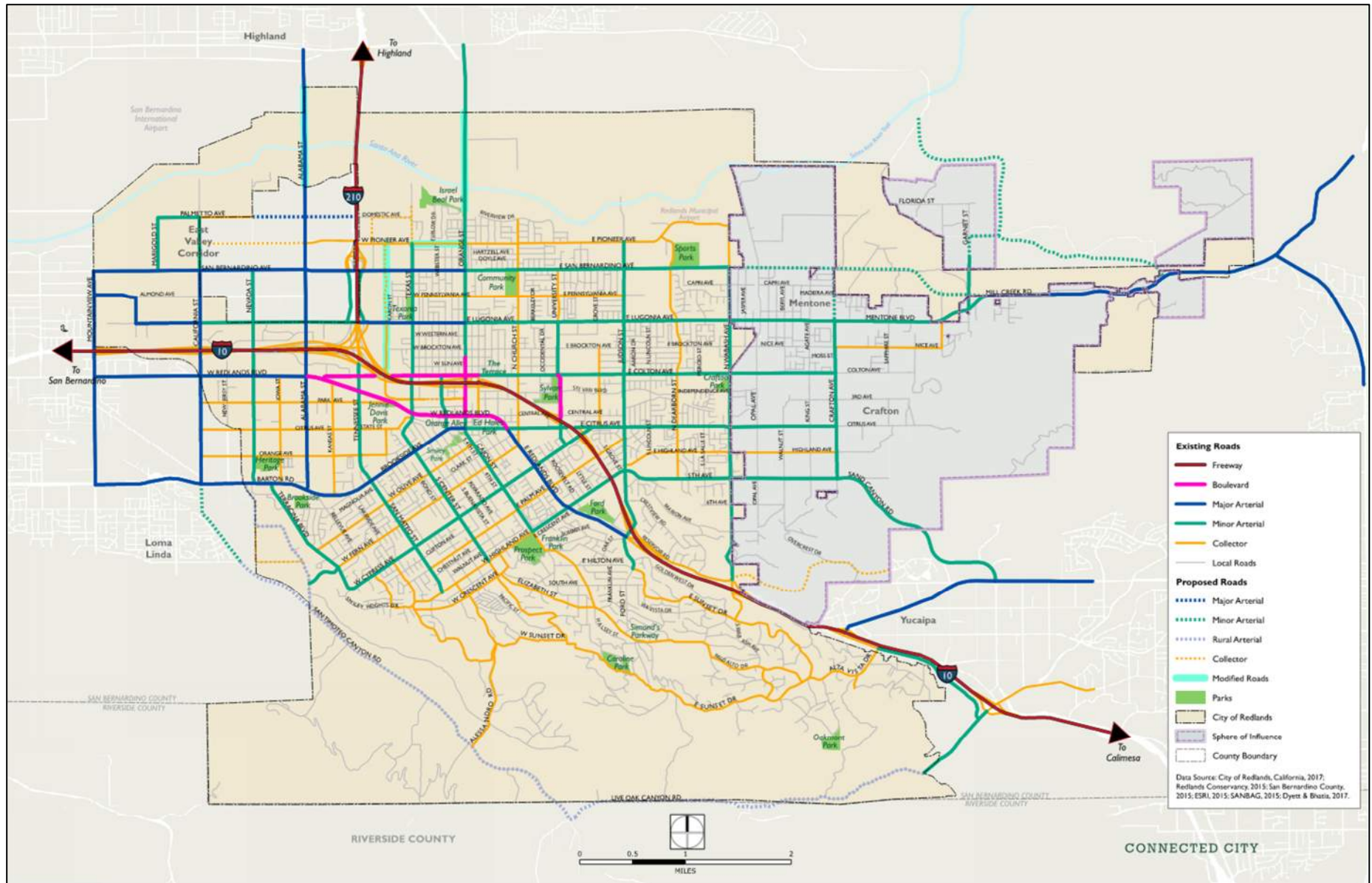




EXHIBIT 4-2: REDLANDS ROADWAY CLASSIFICATION



Note:

1) Sourced from City of Redlands General Plan (December 2017).

## 4.2 STUDY INTERSECTIONS CHARACTERISTICS

**Table 4-1** lists the study intersections examined as part of this analysis. The control type and jurisdiction are also provided.

**TABLE 4-1: STUDY INTERSECTIONS**

ID	Intersection	Control Type	Jurisdiction
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans
3	Tennessee Street / Pennsylvania Avenue (Future)	OWSC	City of Redlands
4	Tennessee Street / W Lugonia Avenue	SIG	City of Redlands
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	City of Redlands
8	W Lugonia Avenue / Project Driveway (Future)	OWSC	City of Redlands
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	City of Redlands
10	W Lugonia Avenue / Karon Street	OWSC	City of Redlands
11	Pennsylvania Avenue / Karon Street	TWSC	City of Redlands
12	Pennsylvania Avenue / Texas Street	AWSC	City of Redlands
13	W Lugonia Avenue / Texas Street	SIG	City of Redlands

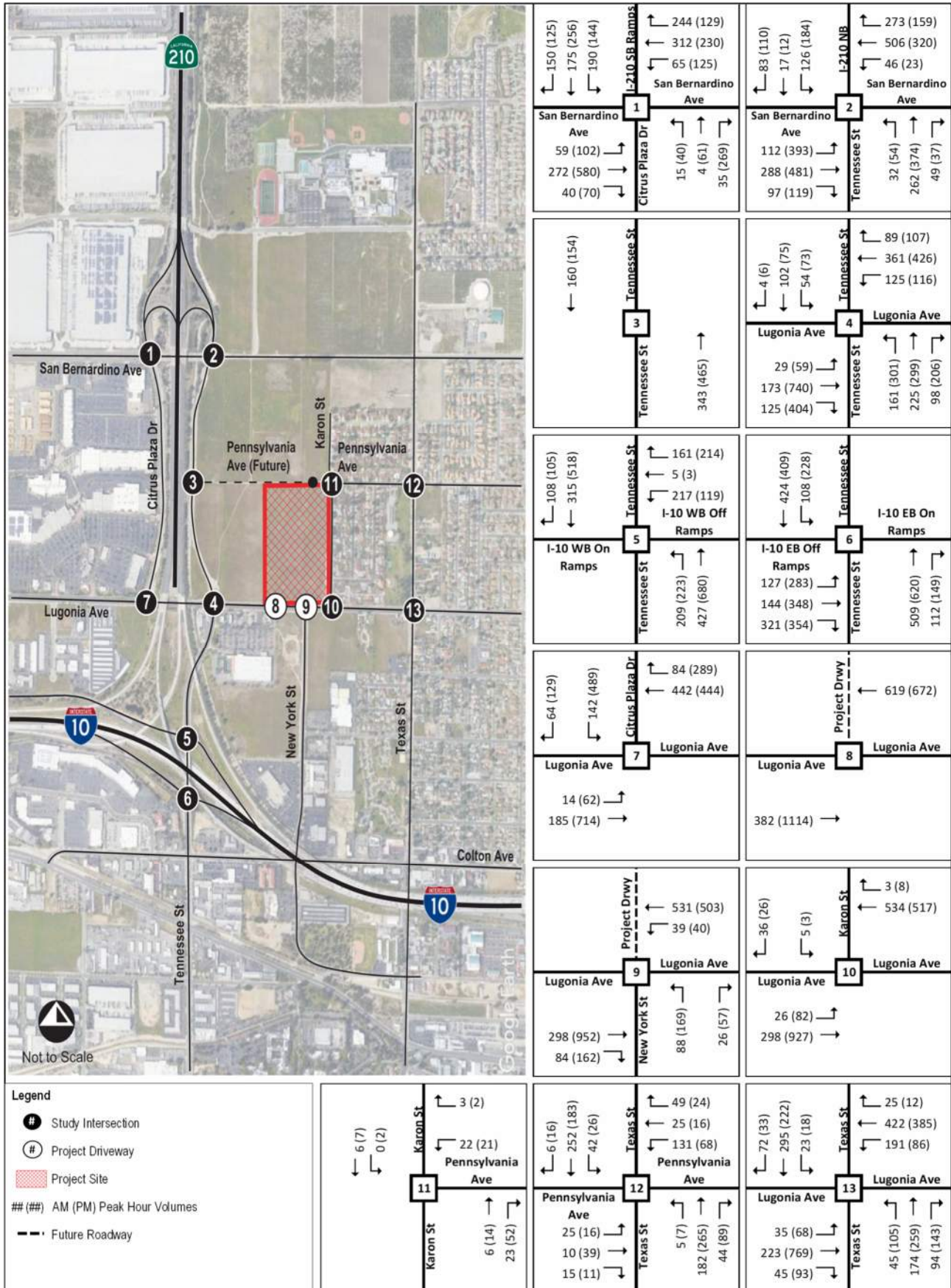
**Notes:**

- 1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.

## 4.3 EXISTING TRAFFIC VOLUMES

Traffic counts were collected on Wednesday June 8<sup>th</sup>, 2022 and on Thursday November 17<sup>th</sup>, 2022 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. Data collected included pedestrian, bicycle, passenger cars, and heavy vehicle counts. The counts used in this analysis represent the peak hour of each period (AM Peak Hour and PM Peak Hour). In coordination with City staff, it was determined a COVID-19 pandemic adjustment factor would not be applied to the traffic counts given the easing of pandemic conditions and restrictions at both the state and county levels. **Appendix B** contains detailed volume development information. **Exhibit 4-3** shows the Existing Peak Hour traffic volumes.

EXHIBIT 4-3: EXISTING PEAK HOUR VOLUMES



#### 4.4 EXISTING LOS ANALYSIS

**Table 4-2** summarizes the Existing Year Peak Hour Synchro intersection analysis results. The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- # 4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F during the PM Peak Hour.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour. The Existing Year AM Peak Hour analysis worksheets are contained in **Appendix C** and the Existing Year PM Peak Hour analysis worksheets are contained in **Appendix D**.

**TABLE 4-2: EXISTING INTERSECTION ANALYSIS RESULTS**

ID	Intersection	Control Type	Jurisdiction	Existing Year			
				AM Peak Hour		PM Peak Hour	
				LOS	Delay	LOS	Delay
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4
3	Tennessee Street / Pennsylvania Avenue	--	Redlands	<i>Intersection Does Not Exist Under This Condition</i>			
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	<b>D</b>	<b>44.4</b>
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2
8	W Lugonia Avenue / Project Driveway	--	Redlands	<i>Intersection Does Not Exist Under This Condition</i>			
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	<b>F</b>	<b>138.2</b>

**Notes:**

- 1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
- 2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
- 3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
- 4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
- 5) Delay shown in average seconds per vehicle.

## 5 PROPOSED PROJECT

The Project proposes to construct 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling unit on the Northwest quadrant of the Intersection of W. Lugonia Avenue and Karon Street. The Project is anticipated to be built out by Year 2024. The Project plans to have three distinct residential land-uses, each with separate access. For the purposes of this Study, they are referred to as Neighborhood A1, A2, and B. Neighborhood A1, consisting of 430 multi-family dwelling units, will have a full access driveway at the intersection of W Lugonia Avenue and New York Street and an exit only driveway located along W Lugonia Avenue, west of New York Street. Neighborhood A2, consisting of 70 townhomes, will have a single full access driveway along the future planned Pennsylvania Street. Neighborhood B, consisting of 19 single family dwelling units, will have access provided via Karon Street.

### 5.1 PROJECT FORECAST TRIP GENERATION

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11<sup>th</sup> Edition) was used to calculate the forecast vehicle trips generated by the proposed Project. **Table 5-1** shows the trip generation rates for the three housing types (Single Family Detached, Single Family Attached, and Multifamily Low-Rise). **Table 5-2** summarizes the vehicular trips forecast to be generated by the Project. As shown, the Project is anticipated to generate approximately 3,581 daily trips with 219 AM Peak Hour trips and 277 PM Peak Hour trips.

**TABLE 5-1: TRIP GENERATION RATES**

Land Use	ITE Code	Neighborhood	Daily Trips Rate	AM Peak Hour			PM Peak Hour		
				Rate	In / Out	Rate	In / Out		
Single-Family Detached	210	Neighborhood B	9.43 / DU	0.70	26% / 74%	0.94	63% / 37%		
Single-Family Attached	215	Neighborhood A2	7.2 / DU	0.48	31% / 69%	0.57	57% / 43%		
Multifamily (Low Rise)	220	Neighborhood A1	6.74 / DU	0.40	24% / 76%	0.51	63% / 37%		

**Note:**

- 1) Sourced from ITE *Trip Generation Manual*, 11<sup>th</sup> Edition.
- 2) DU = Dwelling Units.

**TABLE 5-2: ESTIMATED SITE TRIPS**

Land Use	ITE Code	Neighborhood	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
					Volume	In	Out	Volume	In	Out
Single-Family Detached	210	Neighborhood B	19 DU	179	13	3	10	18	11	7
Single-Family Attached	215	Neighborhood A2	70 DU	504	34	11	23	40	23	17
Multifamily (Low Rise)	220	Neighborhood A1	430 DU	2,898	172	41	131	219	138	81
<b>Total</b>			<b>519 DU</b>	<b>3,581</b>	<b>219</b>	<b>55</b>	<b>164</b>	<b>277</b>	<b>172</b>	<b>105</b>

**Notes:**

- 1) DU = Dwelling Units.

## 5.2 PROJECT SCENARIOS

The study analyzed project-related traffic under two roadway network scenarios:

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

Under Scenario A, the study analyzed the Project assuming a cul-de-sac on Pennsylvania Avenue just west of the existing three-legged intersection of Pennsylvania Avenue and Karon Street as documented in the Project site plan. Thus, the newly constructed Pennsylvania Avenue would only connect to Tennessee Street. Under Scenario B, the study analyzed the Project with an alternative access condition where Pennsylvania Avenue would extend from Karon Street west to Tennessee Street thus creating a complete connection between Tennessee Street and the existing Pennsylvania Avenue east of Karon Street. The intersection of Pennsylvania Avenue and Karon Street would become a four-legged two-way stop-controlled intersection. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods A2 and B would likely experience different local distribution patterns.

**Exhibit 5-1** shows the With Project Scenario A and **Exhibit 5-2** shows the With Project Scenario B lane configurations. Under both Scenario A and Scenario B, half-width construction is proposed along the Project frontage. Along Tennessee Street, the intersection with Pennsylvania Avenue (#3) will be constructed under both Project Scenarios, providing new access to the Neighborhood A2. Along W Lugonia Avenue, the intersection with the Project Driveway (#8) will be constructed under both Project Scenarios, providing exit only access from Neighborhood A1. The intersection of W Lugonia Avenue and New York Street/Project Driveway (#9) will also be modified under both Project Scenarios, providing full access to Neighborhood A1. Additionally, along W Lugonia Avenue, an additional westbound through lane is provided due to half-width improvements along the Project frontage. Under Scenario B only, the stop-controlled intersection of Pennsylvania Avenue and Karon Street will be constructed, providing additional access choices to Neighborhood A2 and Neighborhood B.

EXHIBIT 5-1: SCENARIO A LANE CONFIGURATION

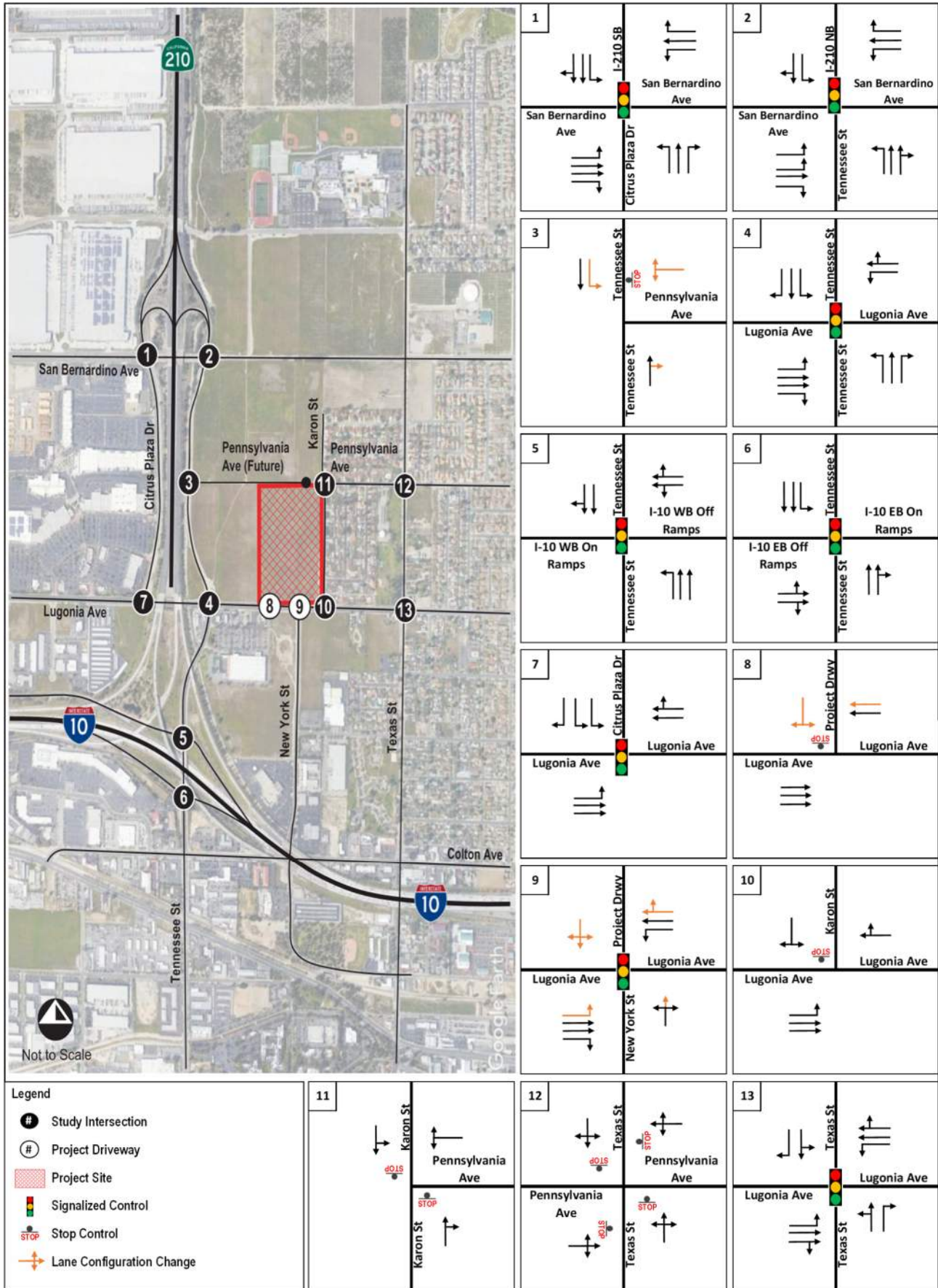
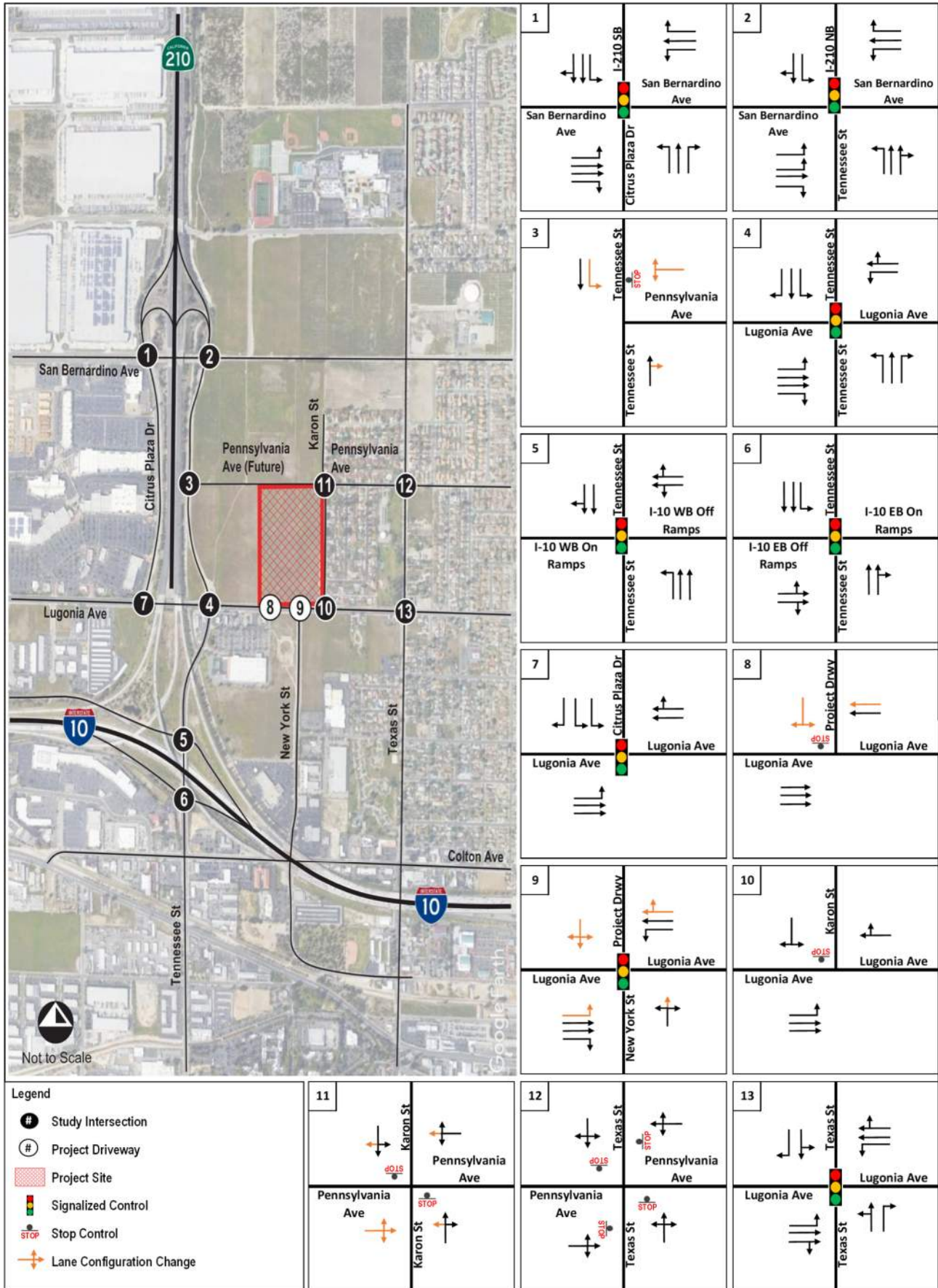


EXHIBIT 5-2: SCENARIO B LANE CONFIGURATION



- Legend**
- Study Intersection
  - ⊕ Project Driveway
  - ▨ Project Site
  - 🚦 Signalized Control
  - STOP Stop Control
  - ↔ Lane Configuration Change



### 5.3 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The regional distribution is consistent between both Scenario A and Scenario B. Only local distribution changes are expected under Scenario A and Scenario B. The regional distribution trends for the estimated project trips are as follows:

- 10% to the North via I-210
- 30% to the West via I-10
- 10% to the East Via I-10
- 15% toward East Redlands
- 5% toward South Redlands
- 30% toward West Redlands

As shown in the site plan, the Project is proposing three distinct residential land-uses, each with separate access. **Exhibits 5-3, 5-4, and 5-5** show the **Scenario A** trip distribution by turning movement at the proposed study intersections. The **Scenario A** trip assignment by turning movement for each neighborhood and the combined Project are shown in **Exhibits 5-6, 5-7, 5-8, and 5-9**.

**Exhibits 5-10, 5-11, and 5-12** show the **Scenario B** trip distribution by turning movement at the proposed study intersections under. The **Scenario B** trip assignment by turning movement for each neighborhood and the combined Project are shown in **Exhibits 5-13, 5-14, 5-15, and 5-16**.

EXHIBIT 5-3: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A1)



EXHIBIT 5-4: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A2)



EXHIBIT 5-5: SCENARIO A: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD B)

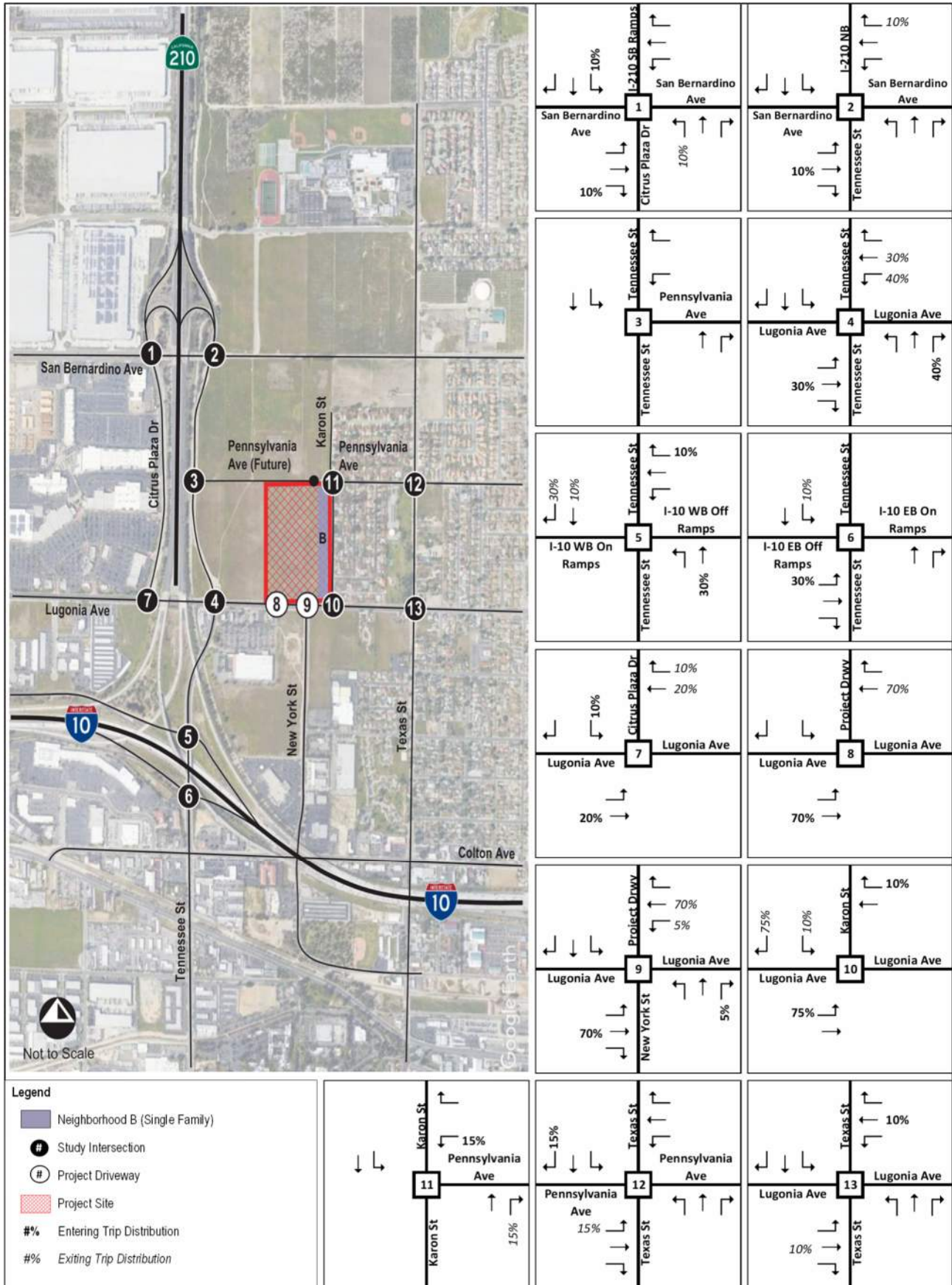


EXHIBIT 5-6: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A1)



EXHIBIT 5-7: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A2)



EXHIBIT 5-8: SCENARIO A: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD B)

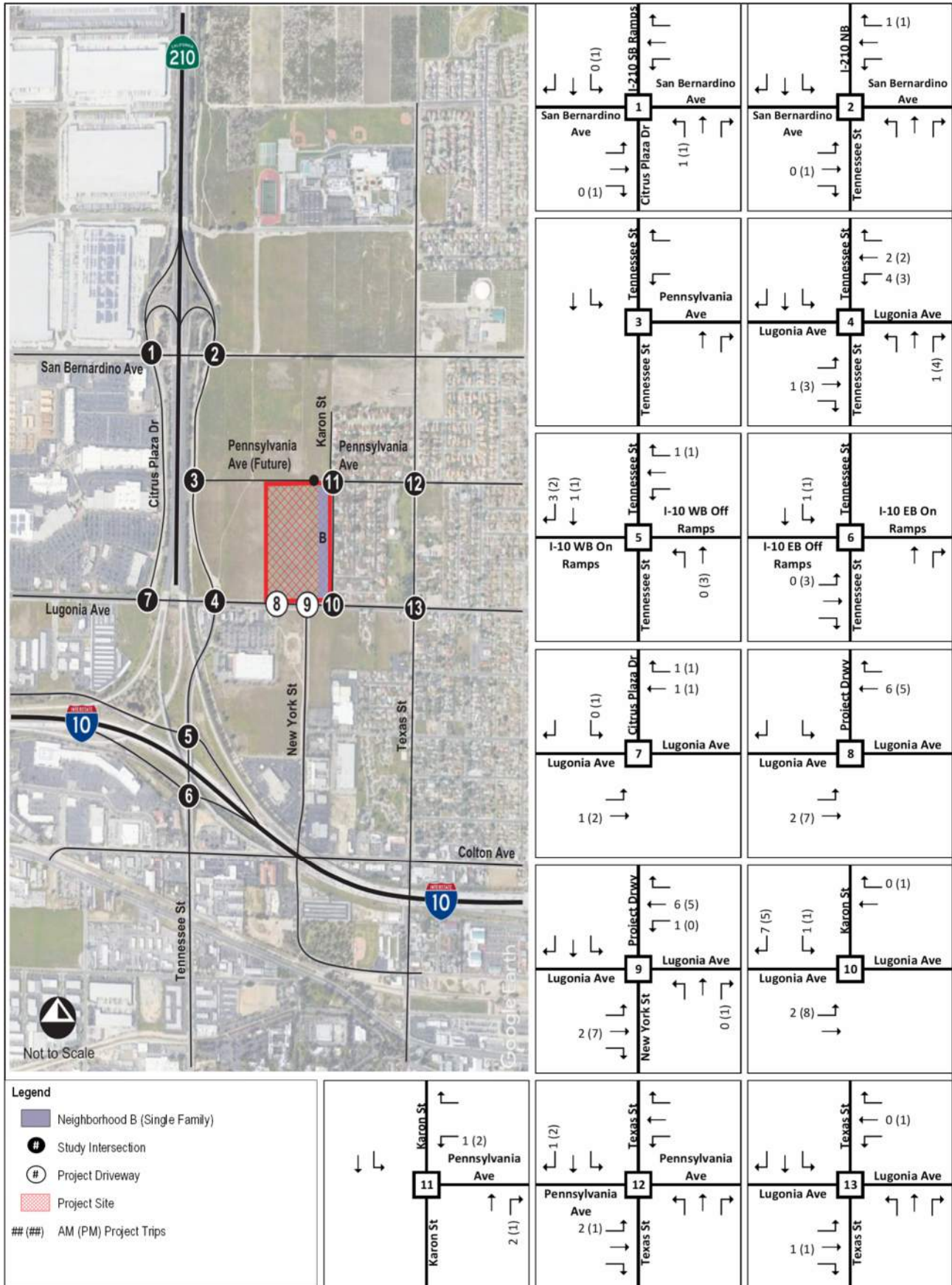


EXHIBIT 5-9: SCENARIO A: TOTAL INTERSECTION PROJECT TRIPS

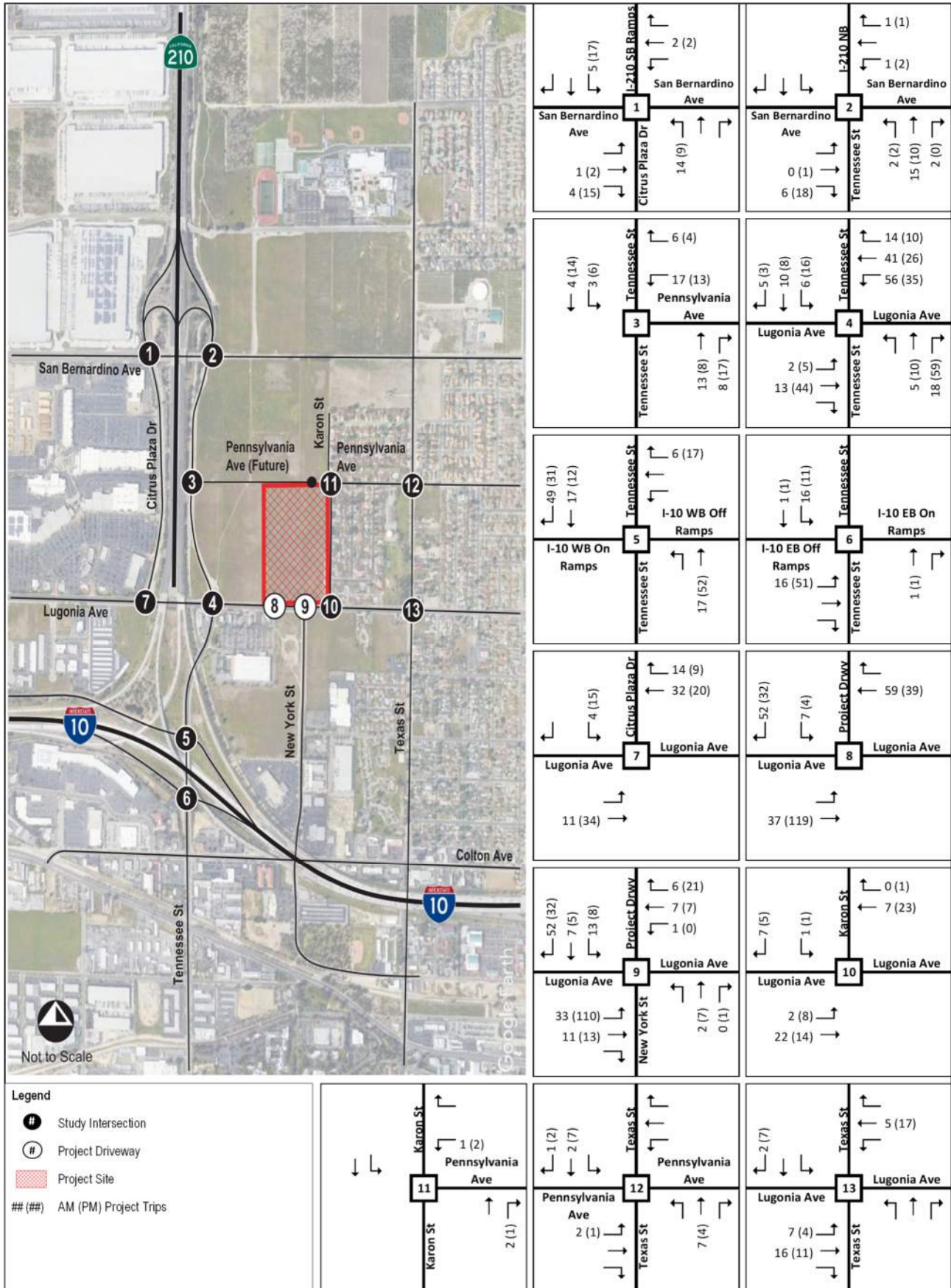




EXHIBIT 5-10: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A1)



EXHIBIT 5-11: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD A2)



EXHIBIT 5-12: SCENARIO B: INTERSECTION PROJECT TRIP DISTRIBUTION (NEIGHBORHOOD B)

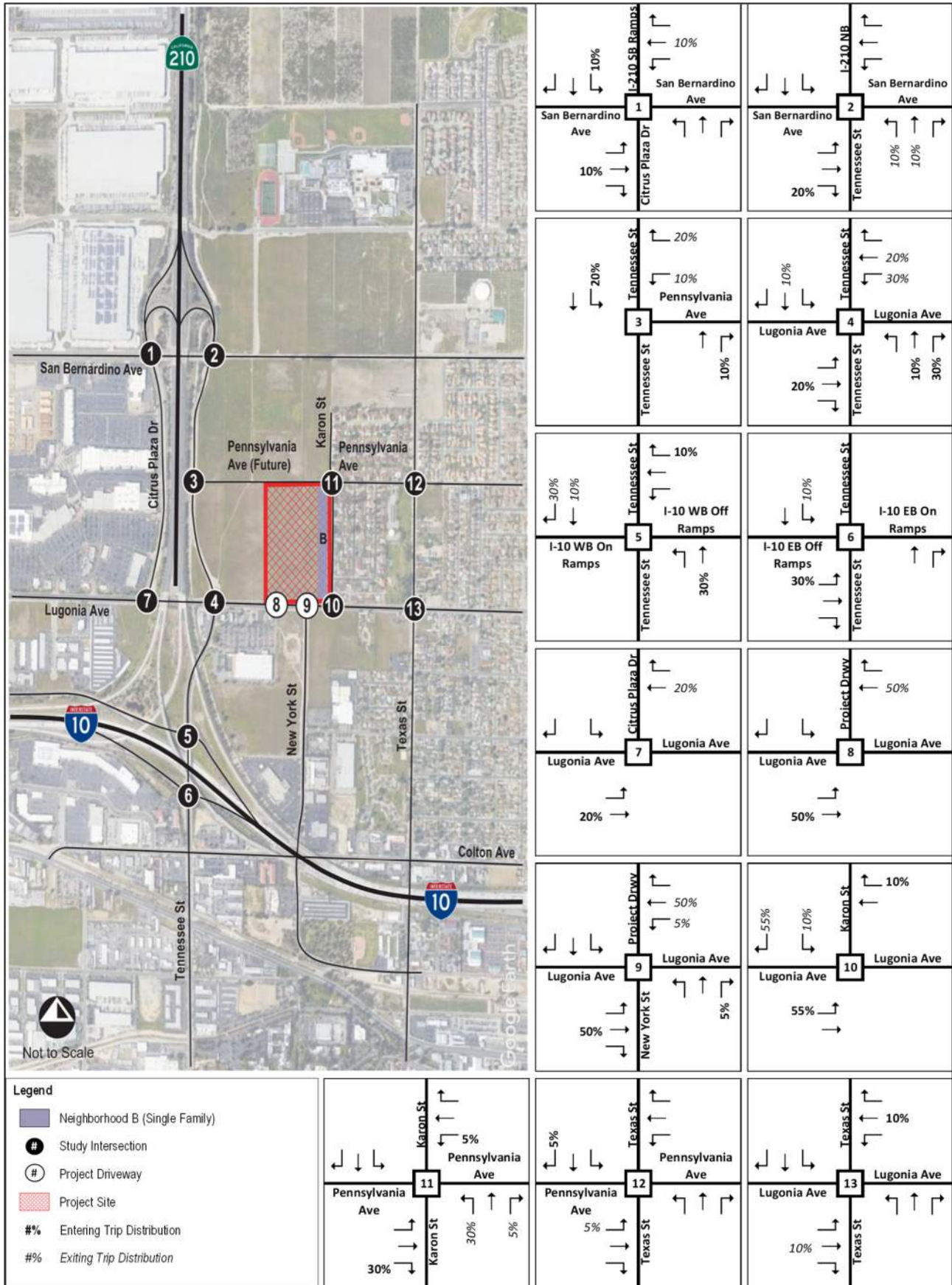


EXHIBIT 5-13: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A1)



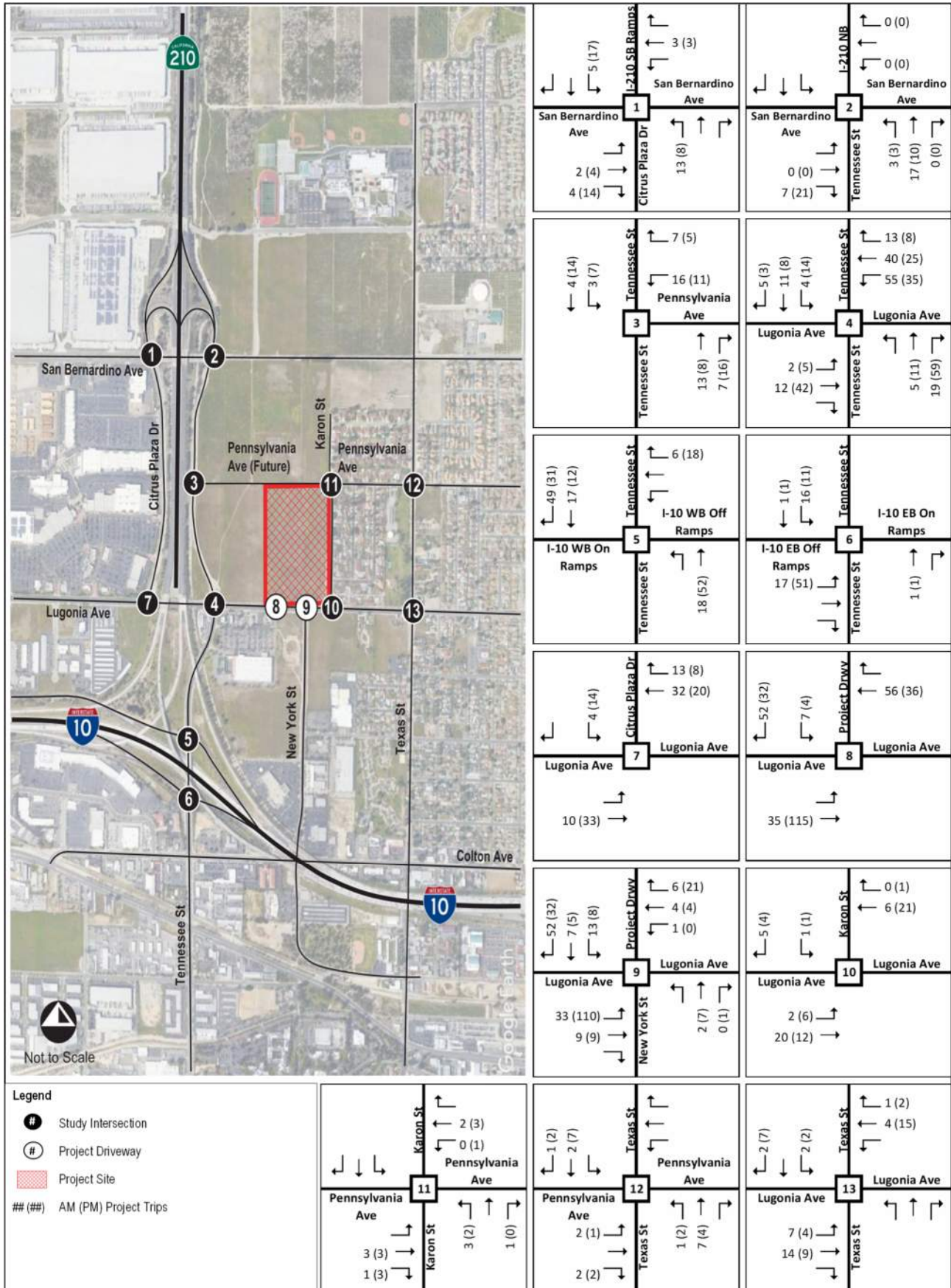
EXHIBIT 5-14: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD A2)



EXHIBIT 5-15: SCENARIO B: INTERSECTION PROJECT TRIPS (NEIGHBORHOOD B)



EXHIBIT 5-16: SCENARIO B: TOTAL INTERSECTION PROJECT TRIPS



## 6 EXISTING WITH PROJECT (SCENARIO A)

### 6.1 EXISTING WITH PROJECT TRAFFIC VOLUMES

The Existing with Project (Scenario A) traffic volumes were developed by adding the forecast Scenario A Project trips to the Existing traffic volumes. **Exhibit 6-1** shows the Existing with Project (Scenario A) Peak Hour traffic volumes. Scenario A assumes a cul-de-sac on Pennsylvania Avenue just west of the intersection of Pennsylvania Avenue and Karon Street. Under the With Project scenario, the intersections of Tennessee Street and Pennsylvania Avenue (#3) and W Lugonia Avenue and Project Driveway (#8) are expected to be constructed, providing access to the site. The intersection of Tennessee Street and Pennsylvania Avenue (#3) will provide full-access and the W Lugonia Avenue and Project Driveway (#8) will provide exit only access from the site. **Appendix B** contains detailed volume development information.

### 6.2 EXISTING YEAR WITH PROJECT LOS ANALYSIS

**Table 6-1** summarizes the Existing Year With Project (Scenario A) Peak Hour Synchro intersection analysis results. The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- #4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street operates at an overall LOS F during the PM Peak Hour.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM and PM peak hours. The Existing Year With Project (Scenario A) AM Peak Hour analysis worksheets are contained in **Appendix E** and the Existing Year With Project (Scenario A) PM Peak Hour analysis worksheets are contained in **Appendix F**.



EXHIBIT 6-1: EXISTING WITH PROJECT (SCENARIO A) PEAK HOUR VOLUMES

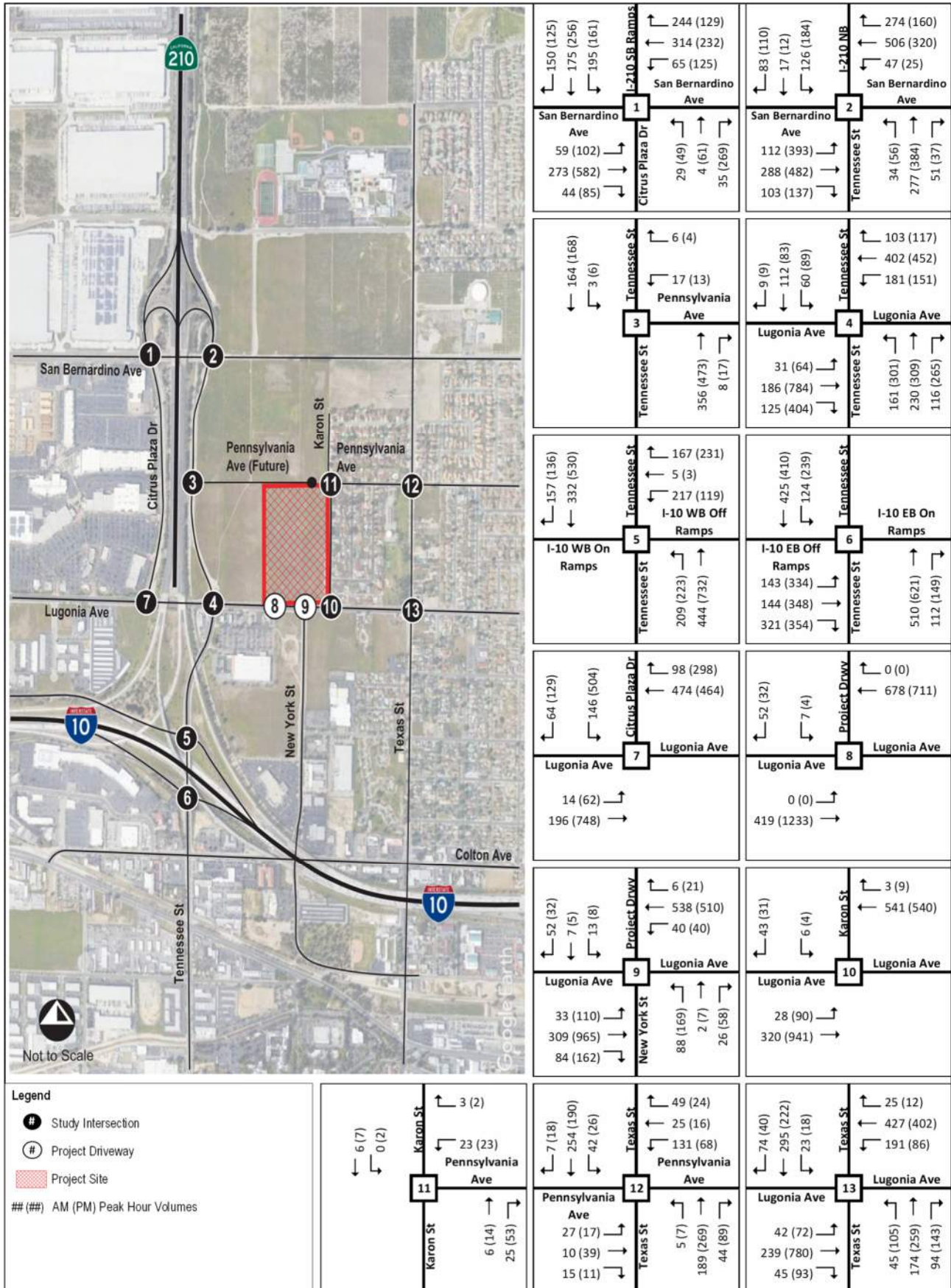


TABLE 6-1: EXISTING YEAR WITH PROJECT (SCENARIO A) INTERSECTION ANALYSIS RESULTS

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing Year With Project (Scenario A)				Adverse Effect?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay		
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.2	C	30.7	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	12.3	B	13.9	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	<b>D</b>	<b>44.4</b>	C	30.3	<b>D</b>	<b>54.2</b>	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.8	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	12.0	B	12.1	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.7	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	14.1	B	14.9	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.4	A	9.5	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.1	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	<b>F</b>	<b>138.2</b>	C	23.1	<b>F</b>	<b>138.2</b>	No	No

Notes:

- 1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
- 2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
- 3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
- 4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
- 5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
- 6) Delay shown in average seconds per vehicle.

## 7 EXISTING WITH PROJECT (SCENARIO B)

### 7.1 EXISTING WITH PROJECT TRAFFIC VOLUMES

The Existing with Project (Scenario B) traffic volumes were developed by adding the forecast Scenario B Project trips to the Existing traffic volumes. Additionally, redistribution of the Existing local traffic (non-Project traffic) was made to account for the new complete connection along Pennsylvania Avenue between Tennessee Street and Karon Street and potential changes that would result in the general local traffic circulation. **Exhibit 7-1** shows the Existing with Project (Scenario B) Peak Hour traffic volumes. Scenario B assumes Pennsylvania Avenue connects to Karon Street in a four-legged intersection. Under the With Project scenario, the intersections of Tennessee Street and Pennsylvania Avenue (#3) and W Lugonia Avenue and Project Driveway (#8) are expected to be constructed, providing access to the site. The intersection of Tennessee Street and Pennsylvania Avenue (#3) will provide full-access and the W Lugonia Avenue and Project Driveway (#8) will provide exit only access from the site. **Appendix B** contains detailed volume development information.

### 7.2 EXISTING YEAR WITH PROJECT LOS ANALYSIS

**Table 7-1** summarizes the Existing Year With Project (Scenario B) Peak Hour Synchro intersection analysis results. The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- #4 – Tennessee Street and W Lugonia Avenue operates at an overall LOS D during the PM Peak Hour.
- #13 – W Lugonia Avenue and Texas Street operates at an overall LOS F during the PM Peak Hour.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour. The Existing Year With Project (Scenario B) AM Peak Hour analysis worksheets are contained in **Appendix G** and the Existing Year With Project (Scenario B) PM Peak Hour analysis worksheets are contained in **Appendix H**.

EXHIBIT 7-1: EXISTING WITH PROJECT (SCENARIO B) PEAK HOUR VOLUMES

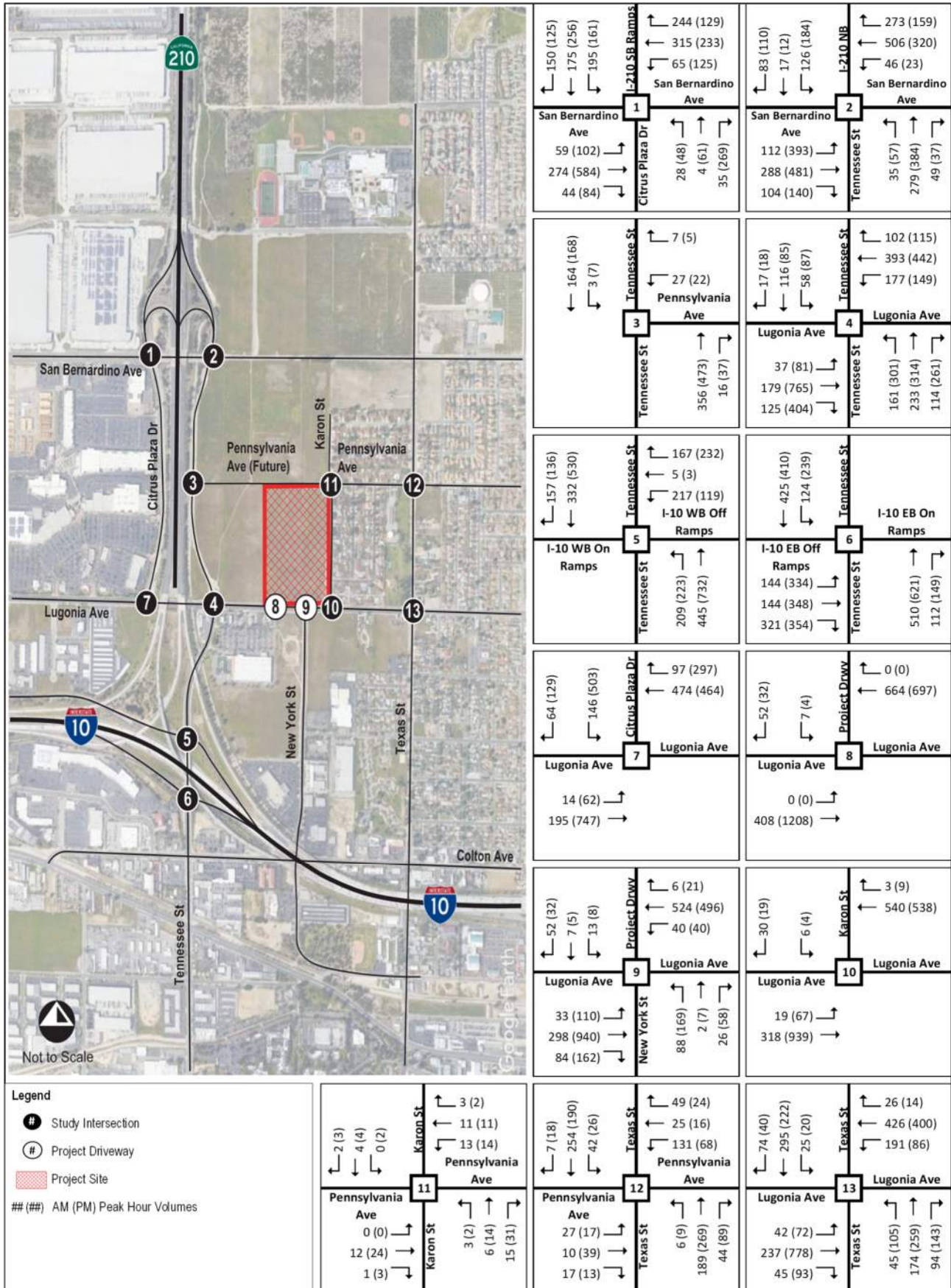


TABLE 7-1: EXISTING YEAR WITH PROJECT (SCENARIO B) INTERSECTION ANALYSIS RESULTS

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing Year With Project (Scenario B)				Adverse Effect?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.1	C	30.6	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	12.7	B	14.5	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	<b>D</b>	<b>44.4</b>	C	29.6	<b>D</b>	<b>54.5</b>	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.9	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	11.9	B	12.0	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.6	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	13.9	C	15.2	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.1	A	9.2	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.2	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	<b>F</b>	<b>138.2</b>	C	24.0	<b>F</b>	<b>138.0</b>	No	No

Notes:

- 1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
- 2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
- 3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
- 4) Caltrans Intersections – LOS D or better is the acceptable operation at Caltrans intersections. Bold red text with gray highlight indicates LOS E or F.
- 5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
- 6) Delay shown in average seconds per vehicle.

## 8 PROJECT RELATED IMPROVEMENTS

While the LOS analysis indicates that off-site roadway operational improvements are not required, the proposed Project would construct roadway network improvements associated with the development operations including:

- Half-width construction along W Lugonia Avenue Project frontage.
- Half-width construction along Pennsylvania Avenue Project frontage. The length of this improvement would vary between Scenario A and B since Scenario A ends at a cul-de-sac under west of Karon Street while Scenario B extends all the way to Karon Street.
- Half-width construction along Karon Street Project frontage.
- Construct one-way-stop control at the new intersection of Tennessee Street and the planned Pennsylvania Avenue (#3). East leg of intersection to be full-width improvement.
- Construct a one-way-stop-controlled driveway to create a new T-intersection along W Lugonia Avenue, west of New York Street (#8).
- Construct a signal-controlled driveway at the intersection of W Lugonia Avenue and New York Street/Project Driveway (#9).
- Modify traffic signal at W Lugonia Avenue and New York Street/Project Driveway (#9) to accommodate new north intersection leg.
- Construct a full-width fourth leg of the stop control intersection of Pennsylvania Avenue and Karon Street (**Scenario B only**). Specifically, construct the west leg of the intersection to connect the newly constructed Pennsylvania Avenue to the existing three-legged intersection.

The Project would widen W Lugonia Avenue along the Project frontage to a total curb-to-curb width of approximately 80-feet. On the north side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip, mirroring the south side of the street. On Pennsylvania Avenue, along the Project frontage, a total curb-to-curb width of approximately 32' will be provided. On the south side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip. North of the Project frontage, Pennsylvania Avenue will be wide enough to receive future additional widening improvements by others to mirror the south side of the street. On Karon Street, along the Project frontage, a total curb-to-curb width of approximately 36' will be provided. On the west side of the street, this width would provide a 5-foot sidewalk and 6 feet landscape strip, mirroring the east side of the street.

These improvements were assumed in the Existing With Project scenario traffic operations analysis. As shown in **Tables 6-1** and **7-1**, there are no projected adverse effects at any of the study intersections with the addition of project-related traffic. Therefore, no other improvements are needed or proposed.

## 9 VMT ASSESSMENT

To satisfy California Environmental Quality Act (CEQA), a VMT assessment was prepared for the Neighborhoods at Lugonia Village Project under a separate memorandum. The VMT memorandum includes the project screening assumptions and methodologies.

## 10 FINDINGS AND RECOMMENDATIONS

**Table 9-1** summarizes the intersection analysis results for all scenarios. The key findings are summarized below:

### **Existing Condition**

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

### **Existing With Project (Scenario A)**

The analysis results show all City intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project-related traffic, no other improvements are needed or proposed.

### **Existing With Project (Scenario B)**

The analysis results show all intersections operate at overall acceptable LOS C or better during the AM Peak Hour. During the PM Peak Hour, all City intersections operate at overall LOS C or better except for the following:

- Tennessee Street and W Lugonia Avenue (#4) operates at an overall LOS D
- W Lugonia Avenue and Texas Street (#13) operates at an overall LOS F.

These locations operate below acceptable LOS C under Existing Conditions without the Project, and the Project contributes to the existing deficiency. Since the Project does not degrade operations below the Existing Conditions without Project level of service grade, no improvements are needed or proposed. All Caltrans intersections operate at overall acceptable LOS D or better during both the AM Peak Hour and the PM Peak Hour.

As there are no adverse effects at any of the study intersections with the addition of project-related traffic, no other improvements are needed or proposed.



TABLE 9-1: INTERSECTION LOS SUMMARY TABLE

ID	Intersection	Control Type	Jurisdiction	Existing Year				Existing With Project (Scenario A)				Existing With Project (Scenario B)				Adverse Effect? (Scenario A)		Adverse Effect? (Scenario A)	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
				LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay				
1	W San Bernardino Avenue / I-210 SB Ramps	SIG	Caltrans	C	21.1	C	25.4	C	21.4	C	25.9	C	21.4	C	25.9	No	No	No	No
2	W San Bernardino Avenue / I-210 NB Ramps	SIG	Caltrans	C	31.6	C	30.4	C	32.2	C	30.7	C	32.1	C	30.6	No	No	No	No
3	Tennessee Street / Pennsylvania Avenue	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	12.3	B	13.9	B	12.7	B	14.5	No	No	No	No
4	Tennessee Street / W Lugonia Avenue	SIG	Redlands	C	23.4	<b>D</b>	<b>44.4</b>	C	30.3	<b>D</b>	<b>54.2</b>	C	29.6	<b>D</b>	<b>54.5</b>	No	No	No	No
5	Tennessee Street / I-10 Westbound Ramps	SIG	Caltrans	C	21.3	B	18.4	C	21.1	B	18.8	C	21.1	B	18.9	No	No	No	No
6	Tennessee Street / I-10 Eastbound Ramps	SIG	Caltrans	C	28.0	D	46.9	C	28.7	D	53.1	C	28.7	D	53.1	No	No	No	No
7	W Lugonia Avenue / Citrus Plaza Drive	SIG	Redlands	A	9.8	B	13.2	A	9.8	B	13.5	A	9.8	B	13.5	No	No	No	No
8	W Lugonia Avenue / Project Driveway	OWSC	Redlands	<i>Intersection Does Not Exist Under This Condition</i>				B	12.0	B	12.1	B	11.9	B	12.0	No	No	No	No
9	W Lugonia Avenue / New York Street and Project Driveway	SIG	Redlands	B	11.2	B	14.4	B	10.8	B	13.7	B	10.8	B	13.6	No	No	No	No
10	W Lugonia Avenue / Karon Street	OWSC	Redlands	B	13.7	B	14.1	B	14.1	B	14.9	B	13.9	C	15.2	No	No	No	No
11	Pennsylvania Avenue / Karon Street	TWSC	Redlands	A	9.4	A	9.5	A	9.4	A	9.5	A	9.1	A	9.2	No	No	No	No
12	Pennsylvania Avenue / Texas Street	AWSC	Redlands	B	11.1	B	10.9	B	11.3	B	11.1	B	11.3	B	11.2	No	No	No	No
13	W Lugonia Avenue / Texas Street	SIG	Redlands	C	22.3	<b>F</b>	<b>138.2</b>	C	23.1	<b>F</b>	<b>138.2</b>	C	24.0	<b>F</b>	<b>138.0</b>	No	No	No	No

Notes:

- 1) SIG = Signalized; AWSC = All-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled.
- 2) Overall intersection LOS provided for signalized and AWSC intersections. Worst-approach LOS provided for TWSC and OWSC intersections.
- 3) City Intersections – LOS C or better is the preferred acceptable operation at City intersections. Bold text with yellow highlight indicates LOS D, E, or F.
- 4) Caltrans Intersections – LOS D or better is the preferred acceptable operation at Caltrans intersections. No intersections operate at LOS E or F.
- 5) Adverse effect determined if With Project scenario degrades operations below the Existing Conditions without Project level of service grade.
- 6) Delay shown in average seconds per vehicle.

# Appendix A: Scoping Memorandum



November 2, 2022

City of Redlands  
35 Cajon Street, Suite 15A  
Redlands, CA 92373

**Attn: Ryan Murphy**  
**CC: Donald Young**

**Subject: Neighborhoods at Lugonia Village - Traffic Impact Study Scope of Work Update**

Michael Baker International (Michael Baker) is preparing a Transportation Impact Study (TIS) report for the Neighborhoods at Lugonia Village project located in the northwest quadrant of the intersection of West Lugonia Avenue and Karon Street in the City of Redlands. The TIS is being prepared consistent with the City of Redlands *CEQA Assessment VMT Analysis Guidelines*, the County of San Bernardino *Transportation Impact Study Guidelines*, and the provisions of the City's Growth Management Initiative, Measure U. The TIS will analyze project-related traffic associated with the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units including an analysis of vehicle miles travelled (VMT) and level of service (LOS). The project is anticipated to generate approximately 3,581 daily trips with 219 AM peak hour trips and 277 PM peak hour trips.

The following scope of work provides additional information for the proposed project and outlines the proposed approach that Michael Baker plans to take in the preparation of the traffic study. A May 3, 2022, version of this document was previously approved; however, this document has been updated to address the following modifications:

- 1) **Decrease in Number of Units** – The number of single family homes in Neighborhood C were reduced from 20 homes to 19 homes.
- 2) **Site Driveway Change** – Modifications to the access at the W San Bernardino Avenue / Project Driveway Intersection (#8) were made since the original scoping agreement was prepared. The original site plan included a raised median on W. San Bernardino Avenue and an entry and exit driveway. The modified plan does not include the raised median along on W. San Bernardino and the driveway is exit only.
- 3) **Additional Scenario** – The traffic study will now include two (2) scenarios. Scenario A is consistent with the scenario shown in the previously approved scoping agreement where a connection between Pennsylvania Avenue and Karon Street would not be provided and a cul-de-sac would exist on Pennsylvania Avenue. Scenario B would include a connection between Pennsylvania Avenue and Karon Street. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods B and C would likely experience different local distribution patterns.

Please review this scoping agreement and let us know if you would like any adjustments to be made to the proposed analysis approach or the assumptions.

Sincerely,

A handwritten signature in black ink, appearing to read "Carla R. Dietrich".

Carla Dietrich, P.E. (PA), PTOE  
Transportation Planner

## 1. Project Information

<b>Project Location:</b>	West Lugonia Ave / Karon St, Redlands, CA	
<b>Project Description:</b>	Multi-family residential (430 units), Townhomes (70 units), Single Family Residential (19 units)	
<b>Project Opening Year:</b>	2024	
<b>Location:</b>	North-west quadrant of West Lugonia Ave / Karon St (See <b>Exhibit 1</b> )	
	<b>Engineer</b>	<b>Applicant</b>
<b>Company:</b>	Michael Baker International	Redlands Summit, LLC.
<b>Name:</b>	Carla Dietrich	John Deacon (Applicant's Representative)
<b>Address:</b>	3536 Concour	202 South Lake Ave, Suite 300
<b>City, State, Zip Code:</b>	Ontario, CA 91764	Pasadena, CA 91101
<b>Phone #:</b>	(909) 974-4908	(818) 209-4564
<b>Fax #:</b>	N/A	N/A
<b>Email:</b>	cdietrich@mbakerintl.com	jdeacon@satusgrouppllc.com

## 2. Trip Generation

### Trip Credit:

No trip generation credits are being proposed for this project.

Trip Credit Type	Taken?	Explanation
Existing Active Land Use	No	Vacant Land
Previous Land Use	No	Undeveloped
Internal Trip Reduction	No	Not Applicable
Pass-by Trip Reduction	No	Not Applicable

### Trip Generation:

See **Table 1** for the trip generation rates and **Table 2** for the project trip summary. The trip generation rates are taken from the ITE Trip Generation Manual, 11<sup>th</sup> Edition. The proposed project will construct 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units. As shown, the project is anticipated to generate approximately 3,581 daily trips with 219 AM peak hour trips and 277 PM peak hour trips.

**Table 1 – Trip Generation Rates**

Land Use	ITE Code	Neighborhood	Daily Trips Rate	AM Peak Hour			PM Peak Hour		
				Rate	In	Out	Rate	In	Out
Single-Family Detached	210	Neighborhood C	9.43 / DU	0.70	26%	74%	0.94	63%	37%
Single-Family Attached	215	Neighborhood B	7.2 / DU	0.48	31%	69%	0.57	57%	43%
Multifamily (Low Rise)	220	Neighborhood A	6.74 / DU	0.40	24%	76%	0.51	63%	37%

Source: ITE Trip Generation Manual, 11<sup>th</sup> Edition

**Table 2– Trip Generation**

Land Use	ITE Code	Neighborhood	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
					Volume	In	Out	Volume	In	Out
Single-Family Detached	210	Neighborhood C	19 DU	179	13	3	10	18	11	7
Single-Family Attached	215	Neighborhood B	70 DU	504	34	11	23	40	23	17
Multifamily (Low Rise)	220	Neighborhood A	430 DU	2,898	172	41	131	219	138	81
<b>Total</b>			<b>519 DU</b>	<b>3,581</b>	<b>219</b>	<b>55</b>	<b>164</b>	<b>277</b>	<b>172</b>	<b>105</b>

Notes: 1) DU = Dwelling Unit

2) Values may vary slightly due to rounding

### 3. Analysis Scenarios

The study will analyze project-related traffic under two scenarios. Under Scenario A, the study will analyze the project assuming a cul-de-sac on Pennsylvania Avenue just west of the intersection of Pennsylvania Avenue and Karon Street. Under Scenario B, the study will analyze the project assuming Pennsylvania Avenue connects to Karon Street. **Exhibit 1** shows the proposed project site plan under Scenario A conditions. The proposed land use types, number of units, and residential locations will not vary between the scenarios; however, Neighborhoods B and C would likely experience different local distribution patterns.

- Scenario A – Cul-de-sac Pennsylvania Avenue
- Scenario B – Pennsylvania Avenue Connection

In accordance with the Measure U Growth Management Initiative, the analysis scenarios are anticipated as follows:

1. Existing Conditions
2. Existing With Project Conditions (Scenario A)
3. Existing With Project Conditions (Scenario B)

### 4. Traffic Distribution

**Exhibit 1** shows the proposed project site plan. The regional distribution trends are as follows:

- 10% to the North via I-210
- 30% to the West via I-10
- 10% to the East Via I-10
- 15% toward East Redlands
- 5% toward South Redlands
- 30% toward West Redlands

As shown in the site plan, the project is proposing 3 distinct neighborhoods, each with separate access. **Exhibits 2, 3, and 4** show the **Scenario A** roadway segment trip distributions for each neighborhood. **Exhibits 5, 6, and 7** show the **Scenario A** trip distribution by turning movement at the proposed study intersections under. The **Scenario A** trip assignment by turning movement for each neighborhood and the combined project are shown in **Exhibits 8, 9, 10, and 11**.

**Exhibits 13, 14, and 15** show the **Scenario B** roadway segment trip distributions for each neighborhood. **Exhibits 16, 17, and 18** show the **Scenario B** trip distribution by turning movement at the proposed study intersections under. The **Scenario B** trip assignment by turning movement for each neighborhood and the combined project are shown in **Exhibits 19, 20, 21, and 22**.

### 5. Study Area

The study shall include the following intersections:

1. W San Bernardino Avenue / I-210 Southbound Ramps
2. W San Bernardino Avenue / I-210 Northbound Ramps
3. Tennessee Street / Pennsylvania Avenue (Future)
4. Tennessee Street / W Lugonia Avenue
5. Tennessee Street / I-10 Westbound Ramps
6. Tennessee Street / I-10 Eastbound Ramps
7. W San Bernardino Avenue / Citrus Plaza Drive
8. W San Bernardino Avenue / Project Driveway
9. W Lugonia Avenue / New York Street
10. W Lugonia Avenue / Karon Street
11. Pennsylvania Avenue / Karon Street
12. Pennsylvania Avenue / Texas Street
13. W Lugonia Avenue / Texas Street

**Exhibit 12** (Scenario A) and **Exhibit 23** (Scenario B) show the anticipated segment trips generated by the project beyond of the proposed study intersections and **Table 4** lists the entering trips at each study intersection. In most locations, more than 50 project trips are not anticipated to enter intersections beyond those included in the study area. Other locations with close to 50 project trips or intersections of potential concern are also included as study intersections.

While the intersections of Pennsylvania Avenue & Karon Street (#11), Pennsylvania Avenue & Texas Street (#12), and W Lugonia Avenue & Texas Street (#13) are anticipated to experience fewer than 50 entering intersection trips, these intersections were added to the list of study intersections given their proximity to the project area via a new connecting roadway.

Approximately 54 vehicles are anticipated to travel along the segment of W Lugonia Avenue to the west of the intersection of W Lugonia Avenue & Citrus Plaza Drive (#7) during PM peak hour. Due to the large proportion of retail and commercial uses to the north and south of this segment, it is expected that a portion of trips will distribute out to the local businesses. As such, it is anticipated that less than 50 vehicle trips will enter the intersection of W Lugonia Avenue & Alabama Street during the PM peak hour.

**Table 4: Anticipated Project Trips Entering Intersection**

Intersection		Project Trips Entering Intersection			
		Scenario A		Scenario B	
		AM	PM	AM	PM
1	W San Bernardino Avenue / I-210 Southbound Ramps	26	45	27	46
2	W San Bernardino Avenue / I-210 Northbound Ramps	27	34	27	34
3	Tennessee Street / Pennsylvania Avenue (Future)	51	62	50	61
4	Tennessee Street / W Lugonia Avenue	170	216	166	210
5	Tennessee Street / I-10 Westbound Ramps	89	112	90	113
6	Tennessee Street / I-10 Eastbound Ramps	34	64	35	64
7	W Lugonia Avenue / Citrus Plaza Drive	61	78	59	75
8	W San Bernardino Avenue / Project Driveway	155	194	150	187
9	W Lugonia Avenue / New York Street	132	204	127	197
10	W Lugonia Avenue / Karon Street	39	52	34	45
11	Pennsylvania Avenue / Karon Street	3	3	10	12
12	Pennsylvania Avenue / Texas Street	12	14	15	18
13	W Lugonia Avenue / Texas Street	30	39	30	39

## 6. Study Guidelines & Methodologies

1. The following guidelines will be utilized:
  - a. City of Redlands CEQA Assessment VMT Analysis Guidelines (June 2020)
  - b. City of Redlands Measure U Growth Management Initiative
  - c. San Bernardino County Transportation Impact Study Guidelines (July 2019)
2. The Highway Capacity Manual (6<sup>th</sup> Edition) and Synchro Software (Version 10) will be used

Measure U is a local growth management initiative and contains several guiding policies for traffic Levels of Service within the City of Redlands. The TIA will include detailed discussion regarding Measure U and will adhere to its guiding policies.

## 7. Traffic Counts

New traffic counts will be obtained at all the study intersections and will adhere to the following guidelines:

- Must be taken on a Tuesday, Wednesday, or Thursday
- Must exclude holidays
- Must be taken when local schools are in session
- Must be taken on days of good weather, and avoid atypical conditions (e.g. road construction, detours, or major traffic incidents)
- Count time periods
  - 7:00 AM – 9:00 AM
  - 4:00 PM – 6:00 PM

Given easing pandemic conditions and restrictions at both the state and county levels, a COVID adjustment factor will not be applied to collected traffic counts.

## 8. Vehicle Miles Travelled (VMT) Analysis

Based on the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020) (*City Guidelines*) land use projects that meet any of the screening thresholds based on size, location, proximity to transit or trip-making potential identified in **Table 5** are presumed to result in a less-than-significant transportation impact under CEQA and do not require a detailed quantitative VMT assessment.

A previous submittal of this Scope of Work, dated April 15, 2022, used an outdated SBCTA VMT screening tool in determining whether the project was located in a Low VMT area. That screening tool indicated a project-specific VMT assessment would be required. Using the appropriate SBCTA screening tool linked within the City Guidelines, the project is located in a Low VMT area. The results in **Table 5 Step 2: Low VMT Area** have been revised accordingly. **The Project meets the Screening Criteria allowing for a determination of a less-than-significant impact on VMT. Therefore, a detailed project-specific VMT analysis is NOT required.** The information contained in this section of the scoping letter along with additional supporting information, including screen captures of the screening tool results, will be formally documented in a separate VMT screening memorandum.

**Table 5: Screening Assessment Summary**

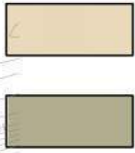
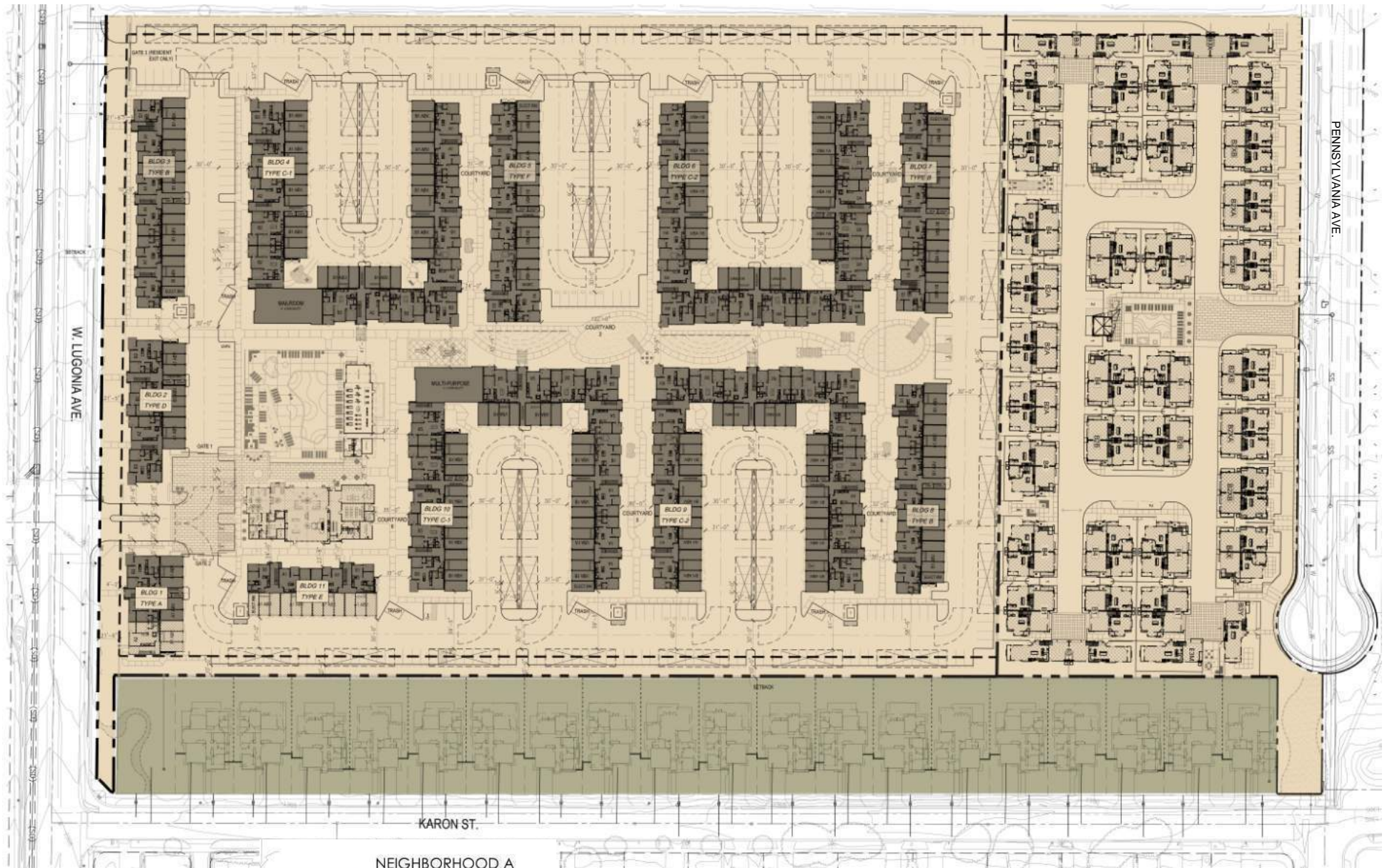
Category (City Guidelines)	Description	Project Assessment	Result
<p><b>Step 1: Transit Priority Area (TPA)</b></p>	<p>Is the project located within a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor?</p>	<p>No. The project is located within a half mile of OmniTrans Route 15 transit stops. Route 15 has service intervals of 60 minutes, and thus does not meet the criteria of a 15-minute service interval for a “high-quality transit corridor.”</p>	<p>Does Not Meet Criteria</p>
<p><b>Step 2: Low VMT Area</b></p>	<p>Is the project located in a low VMT generating area (less 15% below the San Bernardino County regional average VMT per service population)</p>	<p>Yes. Using the SBCTA VMT screening tool referenced in the City Guidelines, the project is in a Low VMT Area.</p>	<p><b>Meets Criteria</b></p>
<p><b>Step 3: Project Type</b></p>	<p>Is the project a local servicing retail project with less than 50,000 square feet, or a locally serving use including (but not limited to) the following?</p> <ul style="list-style-type: none"> <li>• Public/Community Use (school/library/park/fire station/ local government)</li> <li>• Day Care</li> <li>• Locally serving Bank</li> <li>• Assisted living/senior housing</li> </ul> <p style="text-align: center;"><b>Or,</b></p> <p>Does the project generate less than 3,000 MT CO2e per year? Including projects such as:</p> <ul style="list-style-type: none"> <li>• Single Family Res. – 167 DU’s or fewer</li> <li>• Multifamily Res. (1-2 stories) – 232 DU’s or fewer</li> <li>• Multifamily Res. (3+ stories) – 299 DU’s or fewer</li> <li>• Office – 59,100 square feet or less</li> <li>• Local Serving Retail Center – 112,400 SF or less</li> <li>• Warehousing – 463,600 SF or less</li> <li>• Light Industrial – 74,600 SF or less</li> </ul>	<p>No. The project proposes the construction of 430 multi-family dwelling units, 70 townhomes, and 19 single family dwelling units</p>	<p>Does Not Meet Criteria</p>

**Source:** Category and Description obtained from the *City of Redlands CEQA Assessment VMT Analysis Guidelines* (June 2020)





# EXHIBITS



NEIGHBORHOOD A  
 3 STORY MULTI-FAMILY  
 HOUSING & 2 STORY  
 TOWNHOME HOUSING

NEIGHBORHOOD B  
 1 STORY SINGLE  
 FAMILY HOUSING

Not to Scale

10  
5

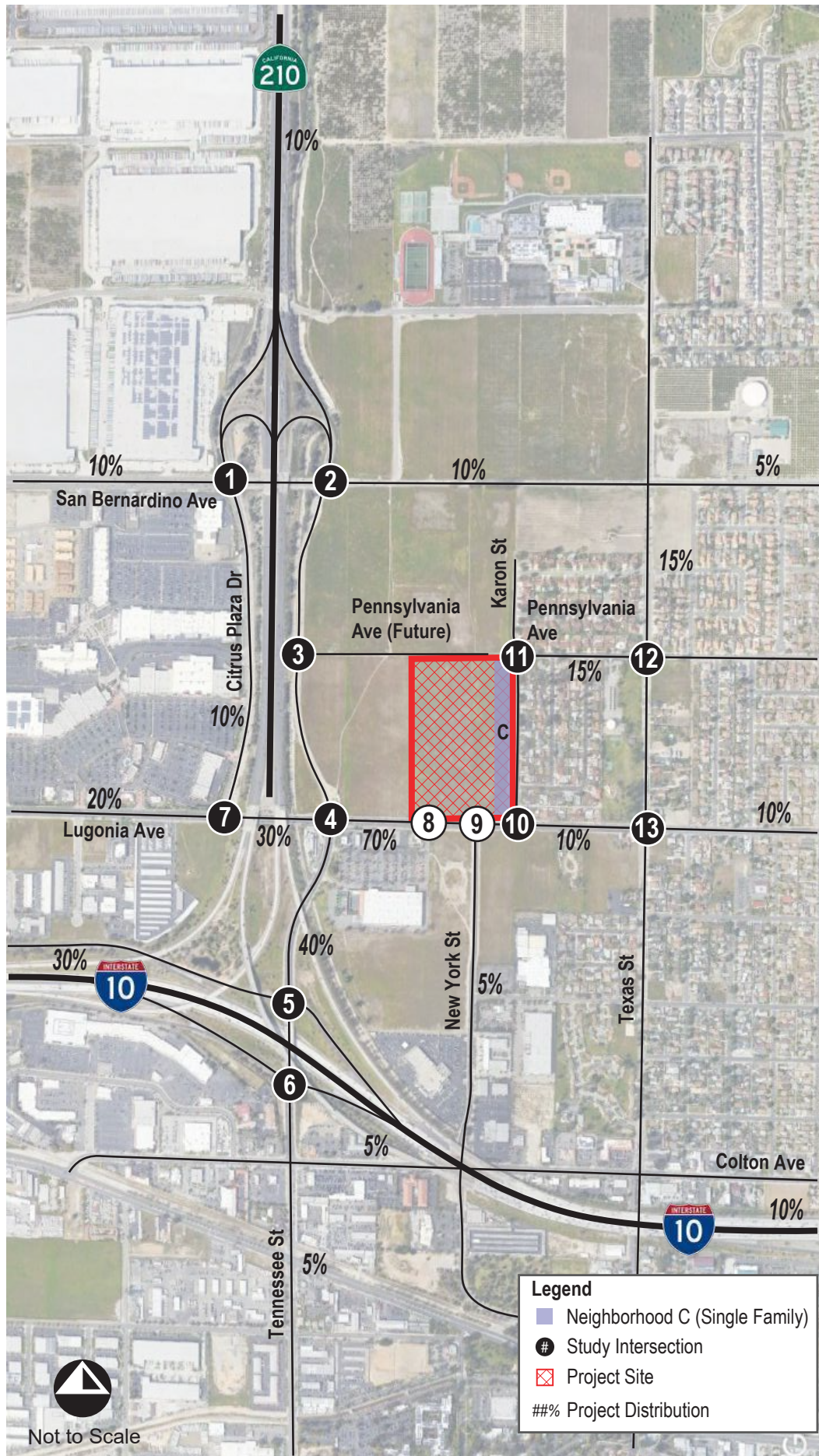




## Scenario A: Project Trip Distribution (Neighborhood A)

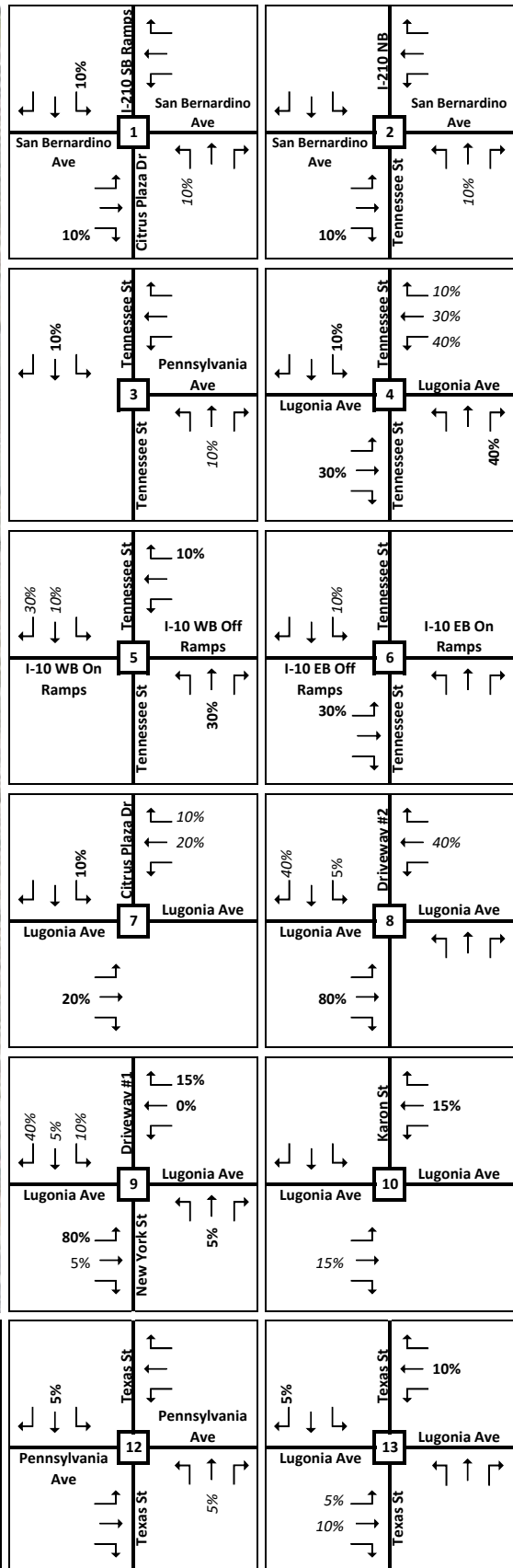
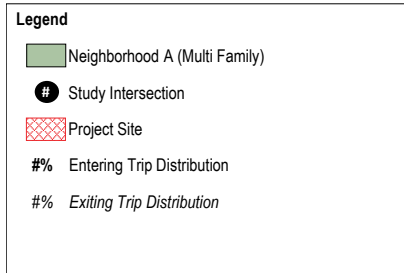


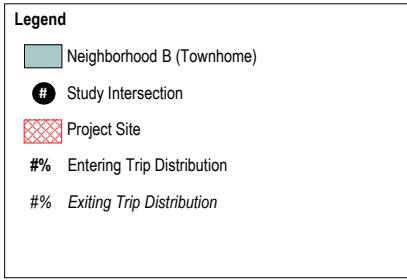
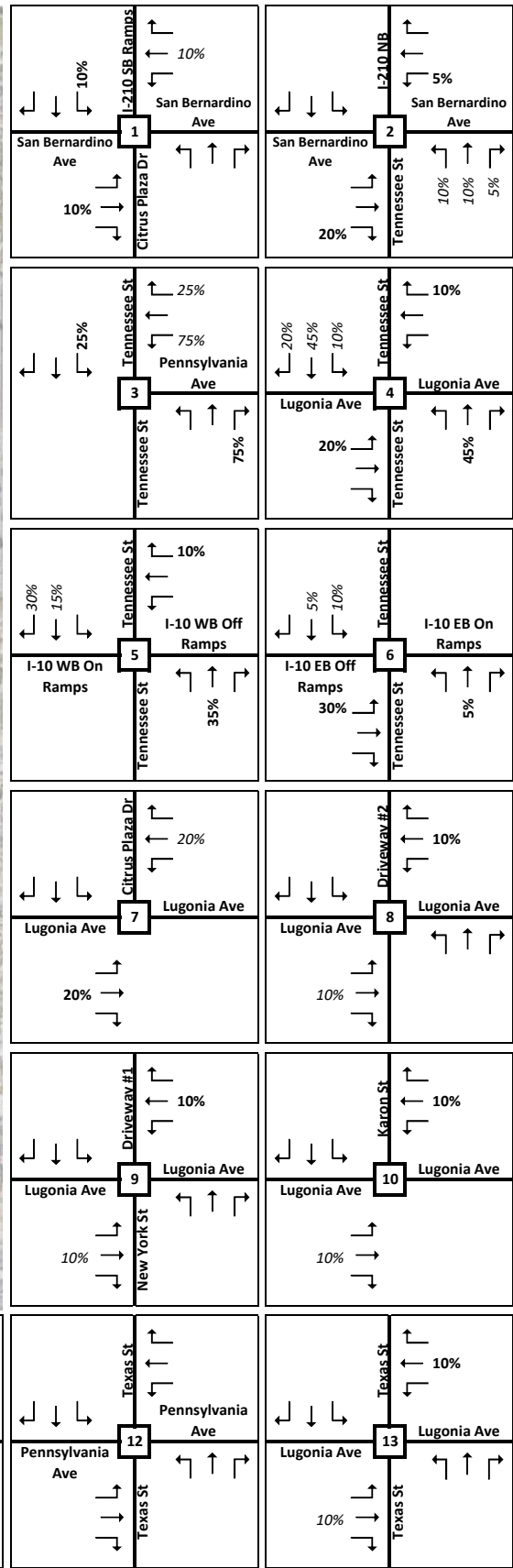
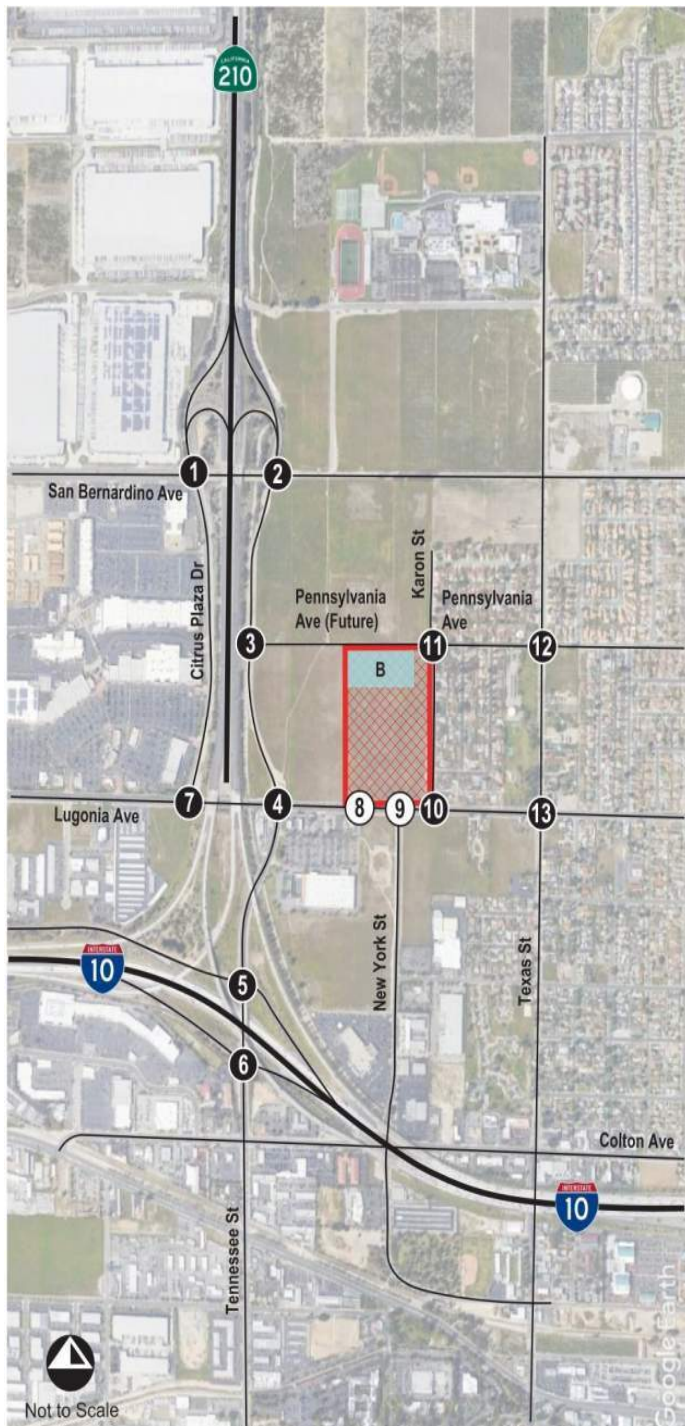
## Scenario A: Project Trip Distribution (Neighborhood B)



### Scenario A: Project Trip Distribution (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection

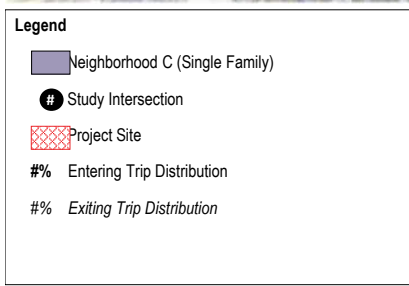
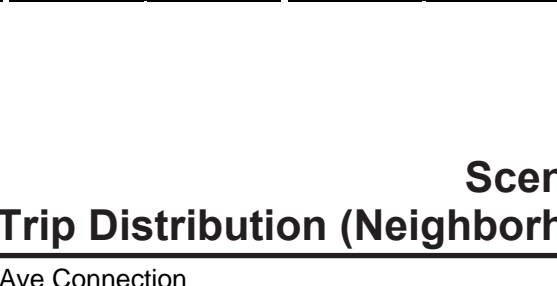
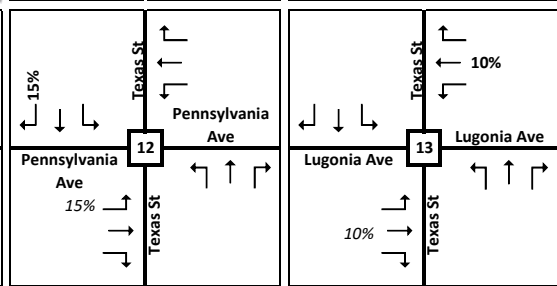
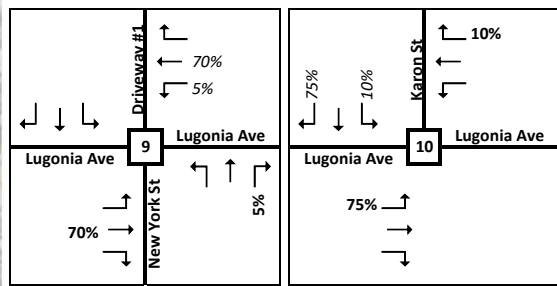
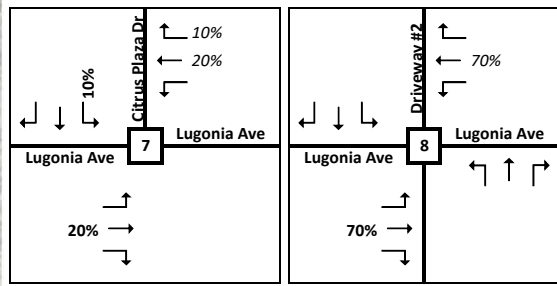
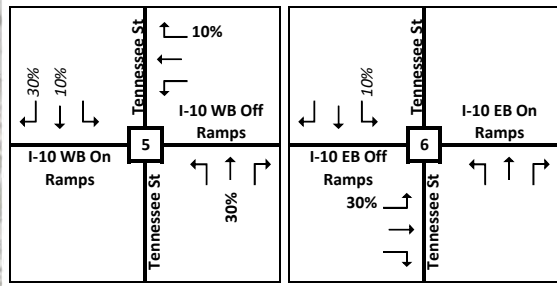
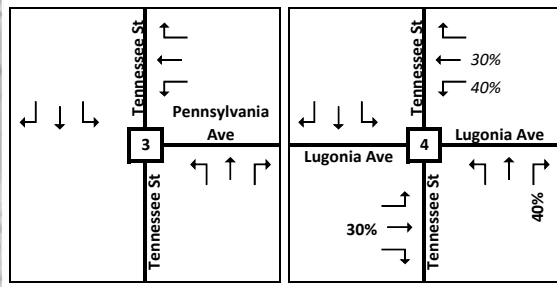
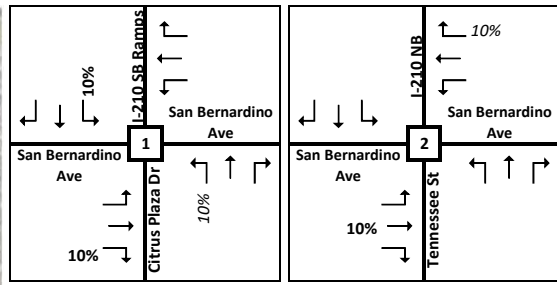
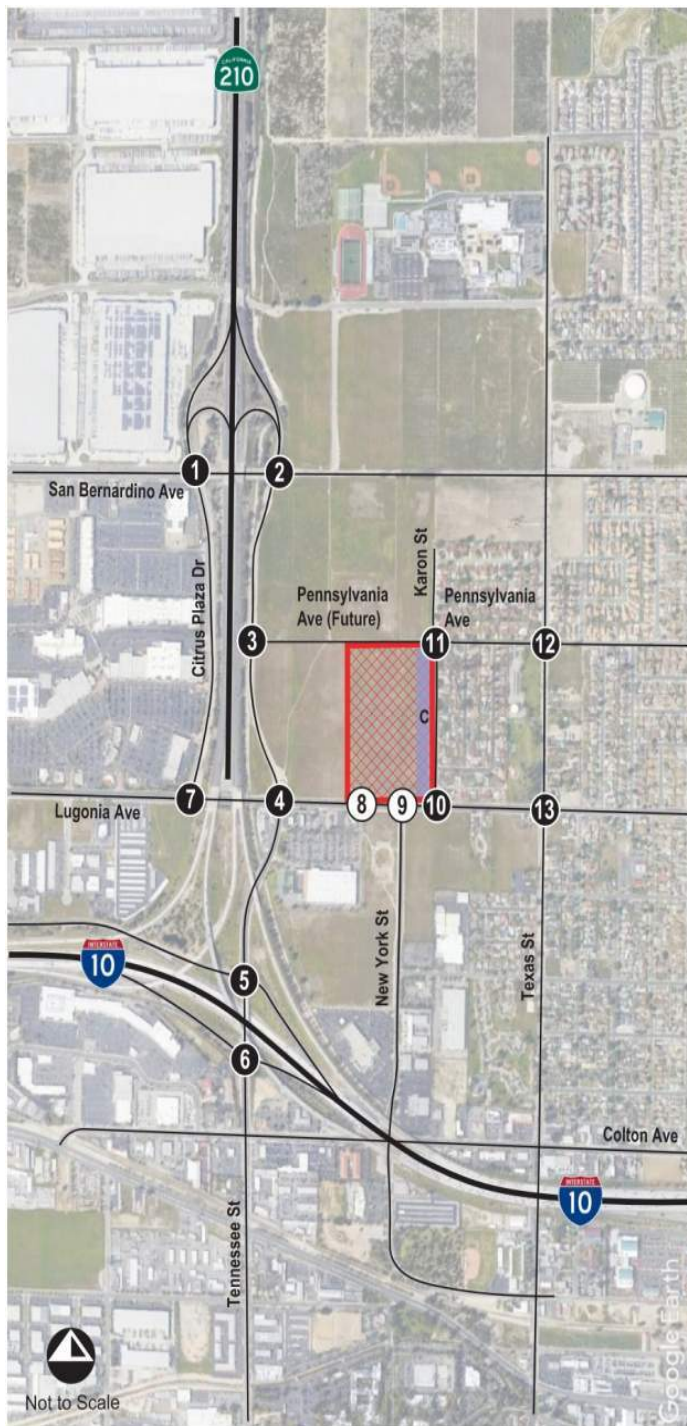




## Scenario A: Intersection Project Trip Distribution (Neighborhood B)

Note: Scenario A = Without Pennsylvania Ave Connection

Exhibit 6

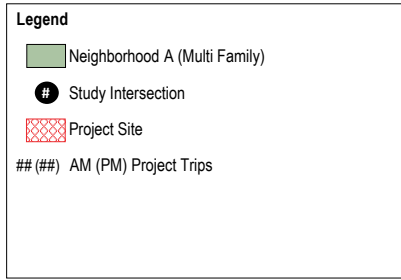
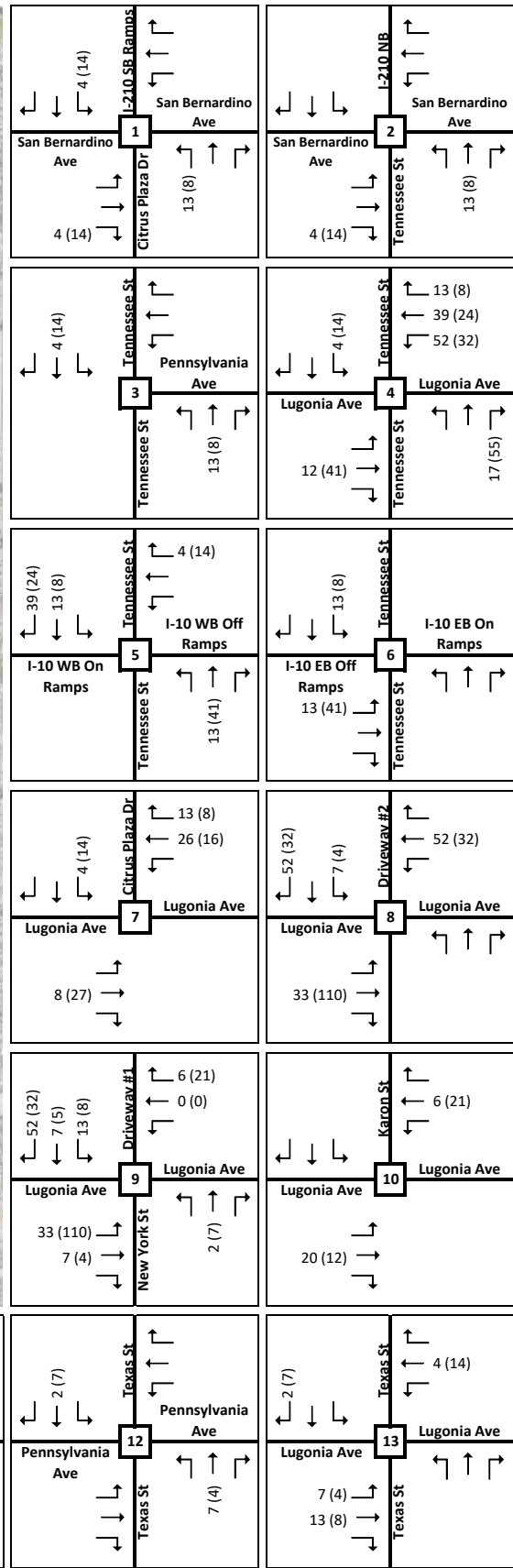


# Scenario A: Intersection Project Trip Distribution (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection

Exhibit 7

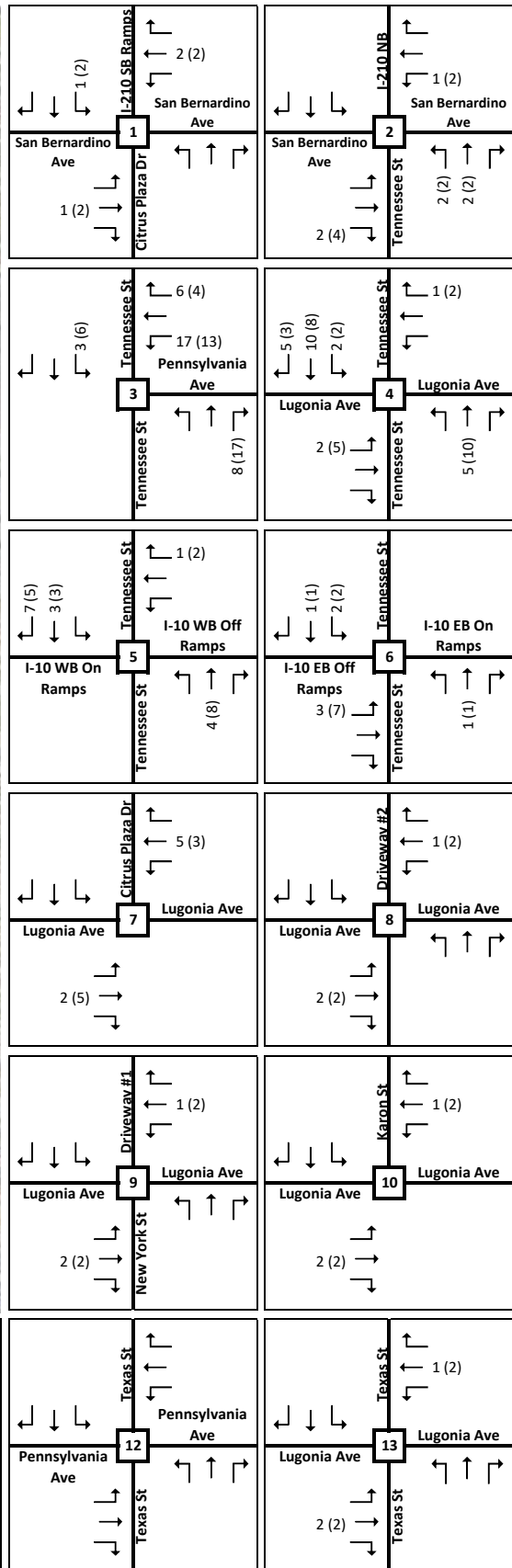
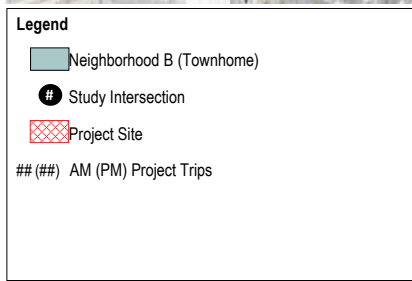
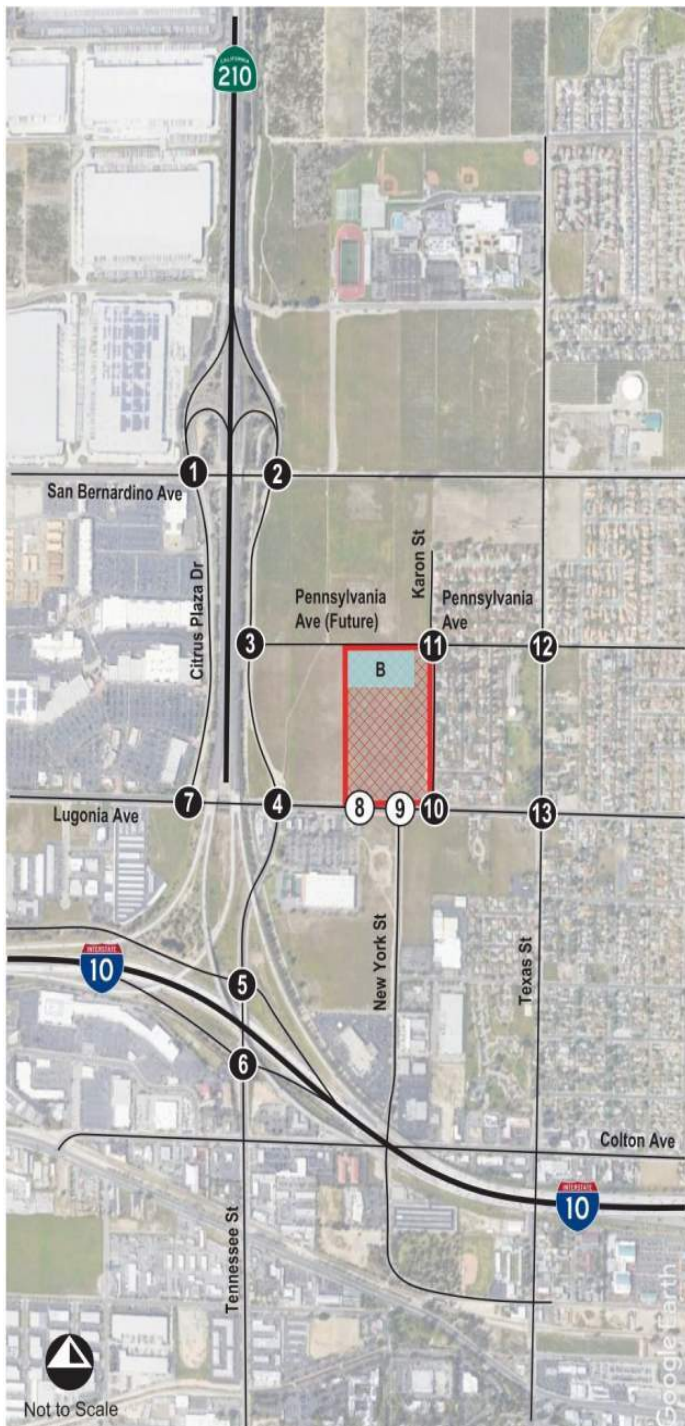




## Scenario A: Intersection Project Trips (Neighborhood A)

Note: Scenario A = Without Pennsylvania Ave Connection

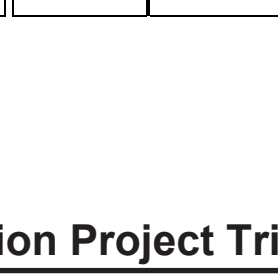
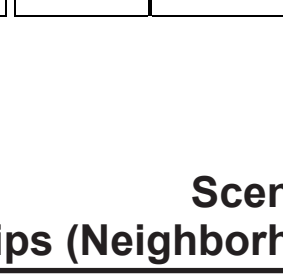
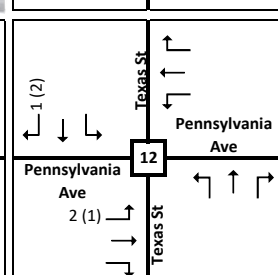
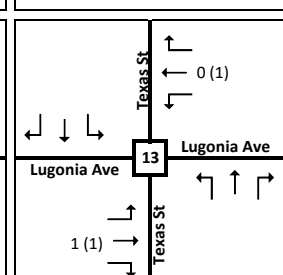
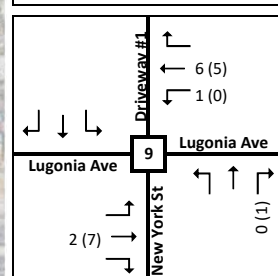
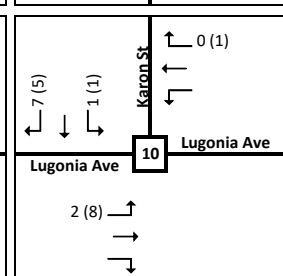
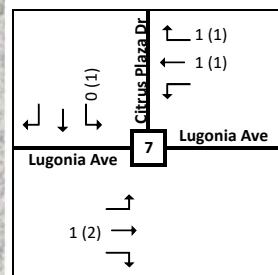
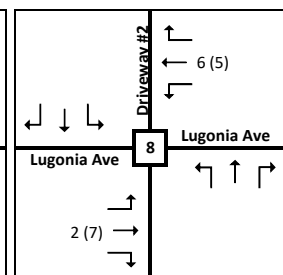
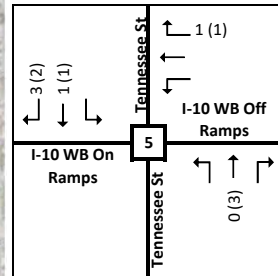
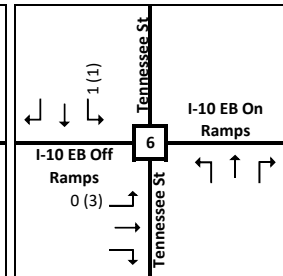
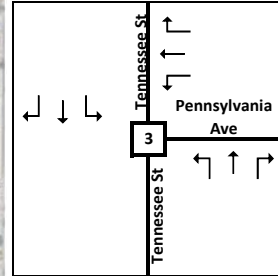
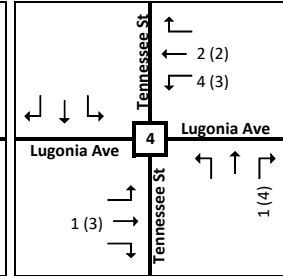
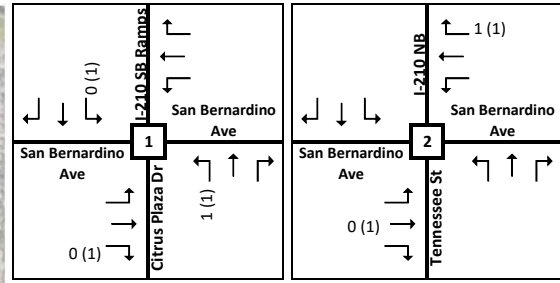
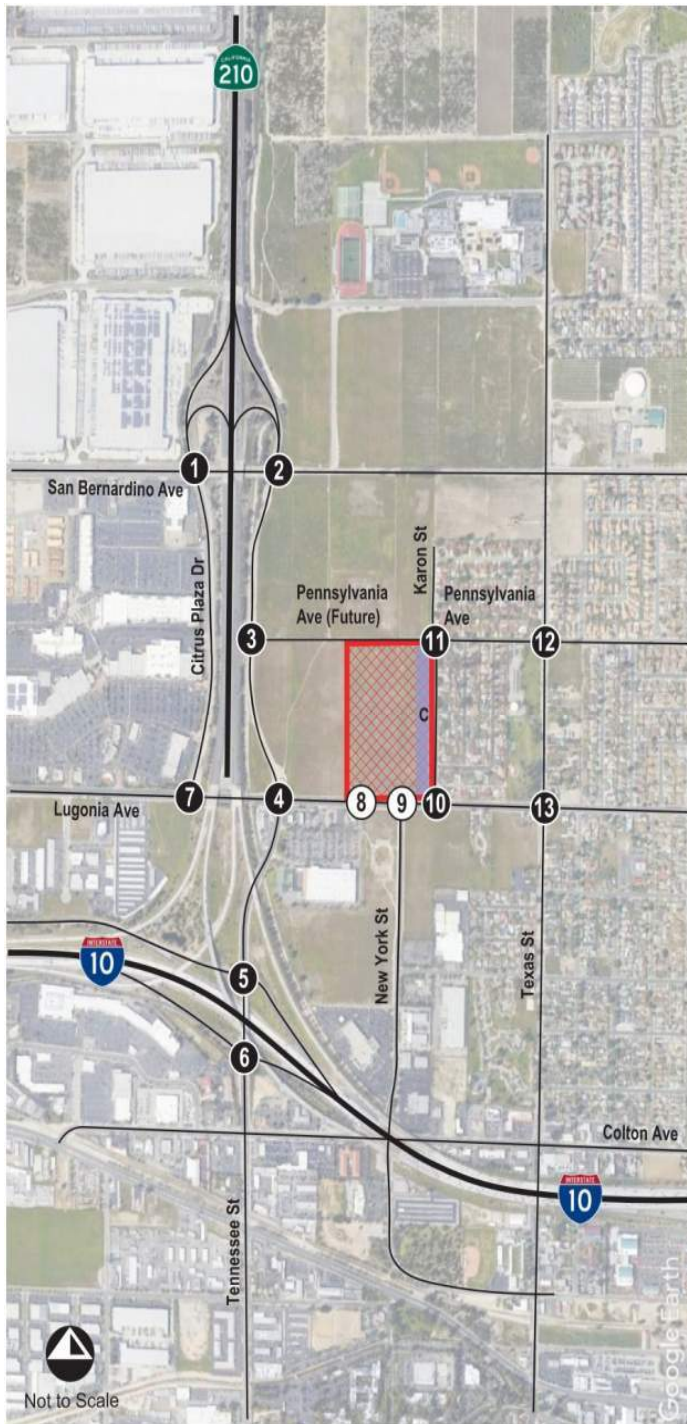
Exhibit 8



## Scenario A: Intersection Project Trips (Neighborhood B)

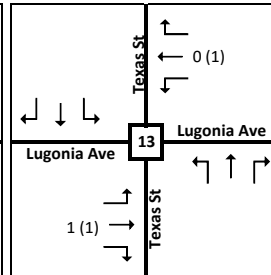
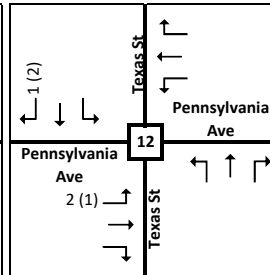
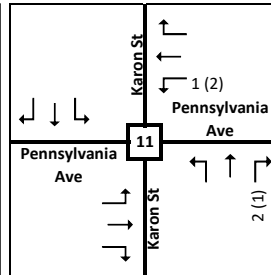
Note: Scenario A = Without Pennsylvania Ave Connection

Exhibit 9



**Legend**

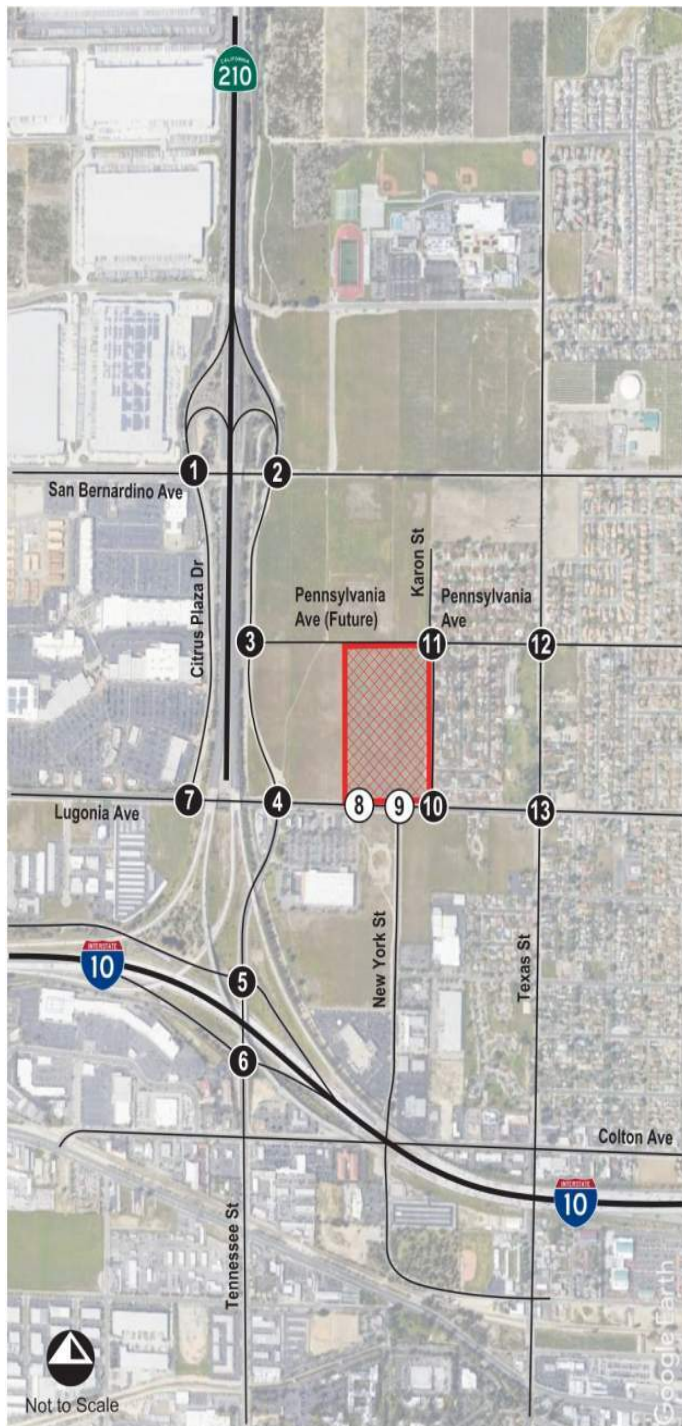
- Neighborhood C (Single Family)
- Study Intersection
- Project Site
- ## (##) AM (PM) Project Trips



## Scenario A: Intersection Project Trips (Neighborhood C)

Note: Scenario A = Without Pennsylvania Ave Connection

Exhibit 10



**Legend**

- # Study Intersection
- Project Site
- ## (##) AM (PM) Project Trips

<p>San Bernardino Ave</p> <p>1</p> <p>San Bernardino Ave</p> <p>1 (2)</p> <p>4 (15)</p> <p>Citrus Plaza Dr</p> <p>14 (9)</p> <p>5 (17)</p> <p>I-210 SB Ramos</p> <p>2 (2)</p>	<p>San Bernardino Ave</p> <p>2</p> <p>San Bernardino Ave</p> <p>1 (2)</p> <p>0 (1)</p> <p>6 (18)</p> <p>Tennessee St</p> <p>2 (2)</p> <p>15 (10)</p> <p>2 (0)</p> <p>I-210 NB</p> <p>1 (1)</p>
<p>Tennessee St</p> <p>3</p> <p>Tennessee St</p> <p>4 (14)</p> <p>3 (6)</p> <p>6 (4)</p> <p>17 (13)</p> <p>13 (8)</p> <p>8 (17)</p> <p>Peninsula Ave</p>	<p>Tennessee St</p> <p>4</p> <p>Lugonia Ave</p> <p>14 (10)</p> <p>41 (26)</p> <p>56 (35)</p> <p>5 (3)</p> <p>10 (8)</p> <p>6 (16)</p> <p>2 (5)</p> <p>13 (44)</p> <p>5 (10)</p> <p>18 (59)</p>
<p>Tennessee St</p> <p>5</p> <p>I-10 WB On Ramps</p> <p>49 (31)</p> <p>17 (12)</p> <p>17 (52)</p> <p>I-10 WB Off Ramps</p> <p>6 (17)</p>	<p>Tennessee St</p> <p>6</p> <p>I-10 EB Off Ramps</p> <p>1 (1)</p> <p>16 (11)</p> <p>1 (1)</p>
<p>Lugonia Ave</p> <p>7</p> <p>Lugonia Ave</p> <p>11 (34)</p> <p>4 (15)</p> <p>14 (9)</p> <p>32 (20)</p> <p>Citrus Plaza Dr</p>	<p>Lugonia Ave</p> <p>8</p> <p>Lugonia Ave</p> <p>52 (32)</p> <p>7 (4)</p> <p>59 (39)</p> <p>37 (119)</p> <p>1 (1)</p> <p>Driveway #2</p>
<p>Lugonia Ave</p> <p>9</p> <p>Lugonia Ave</p> <p>52 (32)</p> <p>7 (5)</p> <p>13 (8)</p> <p>6 (21)</p> <p>7 (7)</p> <p>1 (0)</p> <p>1 (1)</p> <p>1 (1)</p> <p>2 (7)</p> <p>0 (1)</p> <p>New York St</p> <p>33 (110)</p> <p>11 (13)</p> <p>Driveway #1</p>	<p>Lugonia Ave</p> <p>10</p> <p>Lugonia Ave</p> <p>7 (5)</p> <p>1 (1)</p> <p>0 (1)</p> <p>7 (23)</p> <p>2 (8)</p> <p>22 (14)</p> <p>Karon St</p>
<p>Peninsula Ave</p> <p>11</p> <p>Peninsula Ave</p> <p>1 (2)</p> <p>2 (1)</p> <p>Karon St</p> <p>2 (1)</p>	<p>Peninsula Ave</p> <p>12</p> <p>Peninsula Ave</p> <p>1 (2)</p> <p>2 (7)</p> <p>2 (1)</p> <p>7 (4)</p> <p>Texas St</p>
<p>Lugonia Ave</p> <p>13</p> <p>Lugonia Ave</p> <p>7 (4)</p> <p>16 (11)</p> <p>Texas St</p>	<p>Lugonia Ave</p> <p>13</p> <p>Lugonia Ave</p> <p>2 (7)</p> <p>5 (17)</p> <p>Texas St</p>

# Scenario A: Intersection Project Trip



### Scenario A: Segment Project Trips (Total)



## Scenario B: Project Trip Distribution (Neighborhood A)

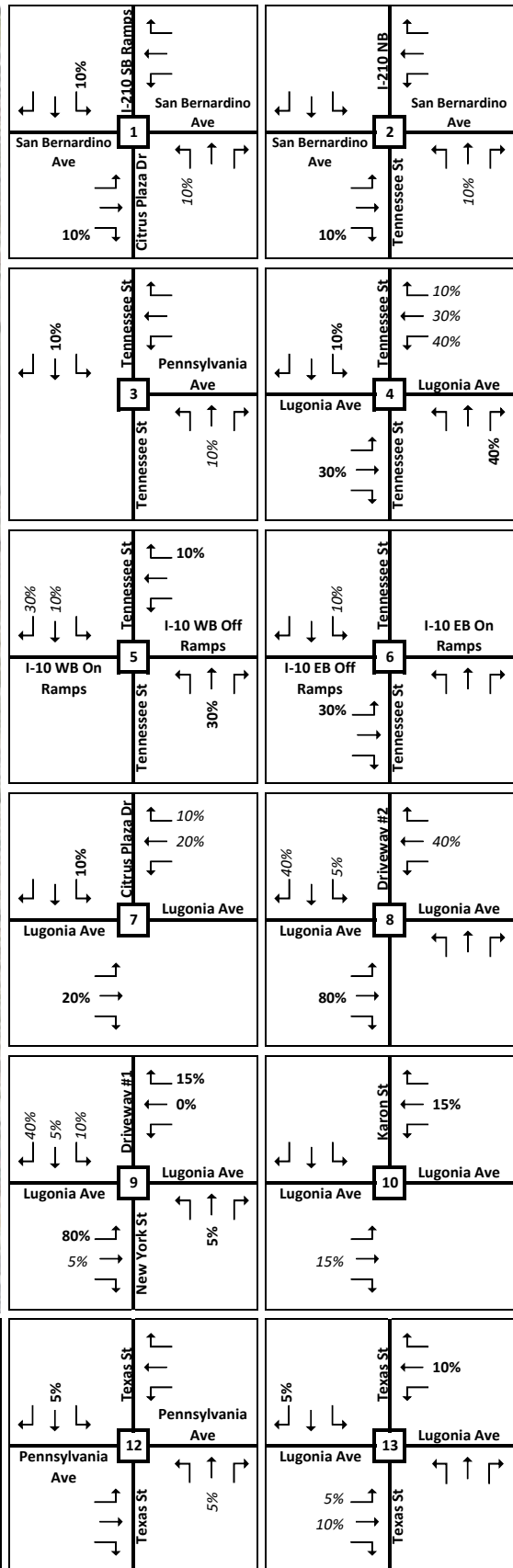
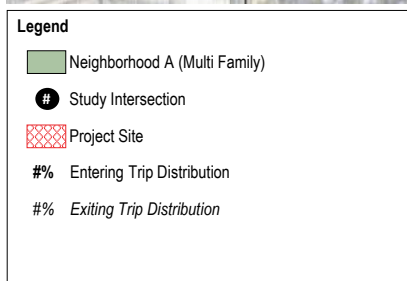


## Scenario B: Project Trip Distribution (Neighborhood B)



## Scenario B: Project Trip Distribution (Neighborhood C)



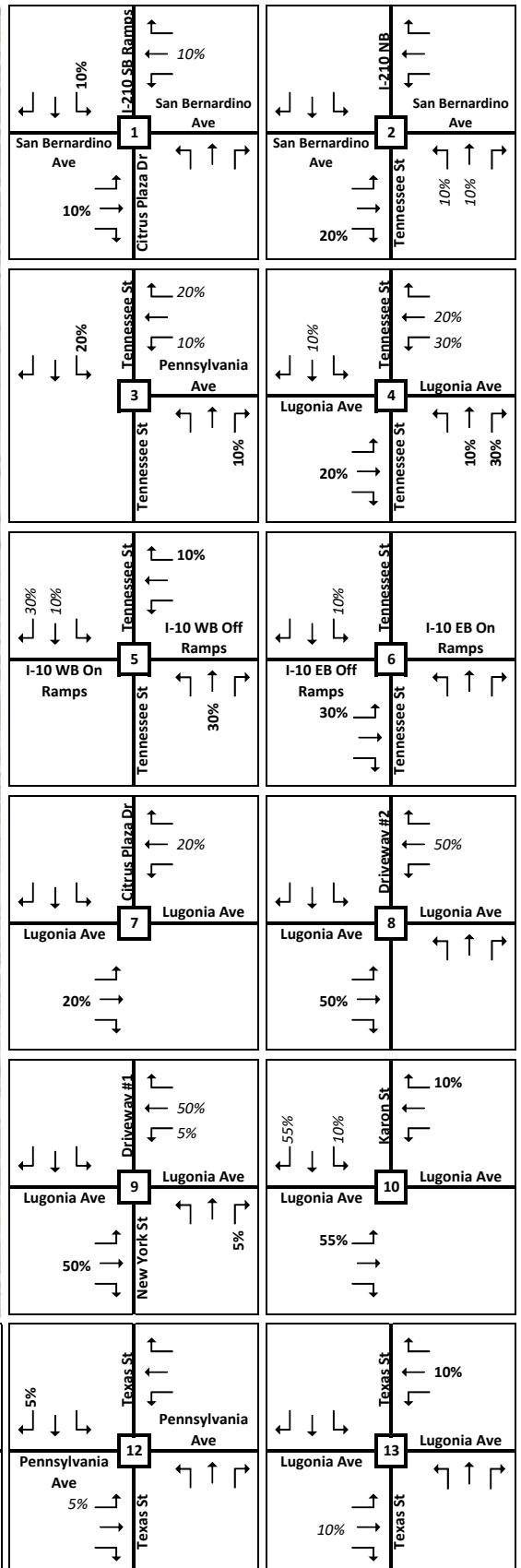
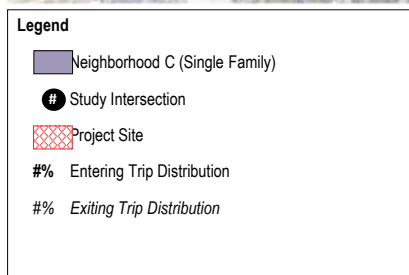
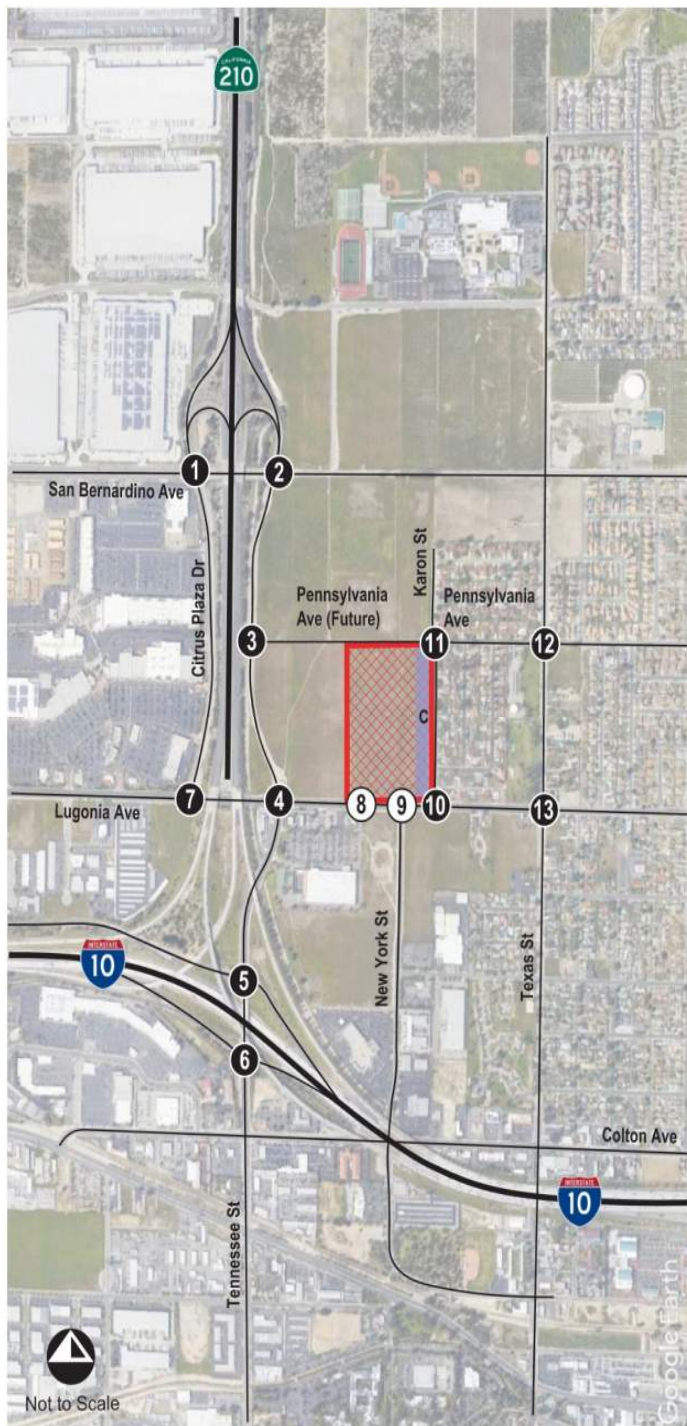




## Scenario B: Intersection Project Trip Distribution (Neighborhood B)

Note: Scenario B = With Pennsylvania Ave Connection

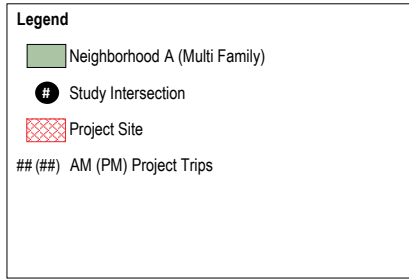
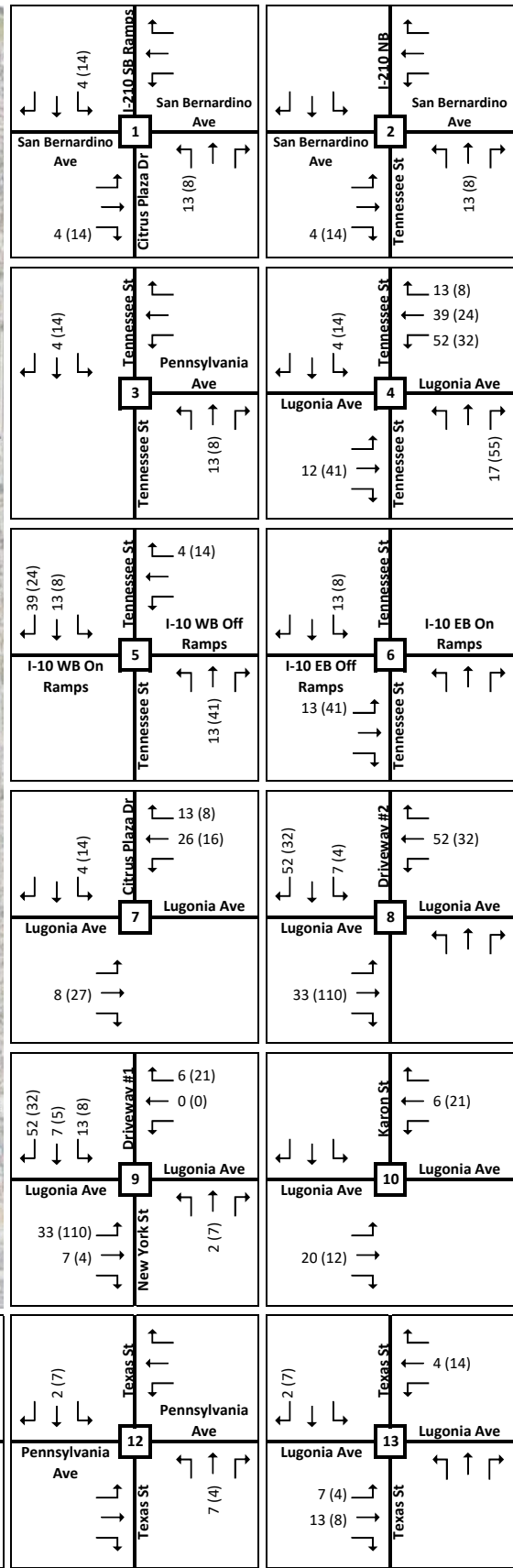
Exhibit 17



## Scenario B: Intersection Project Trip Distribution (Neighborhood C)

Note: Scenario B = With Pennsylvania Ave Connection

Exhibit 18

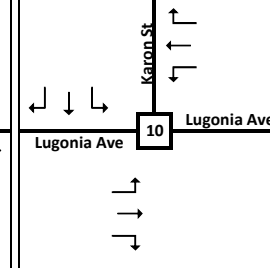
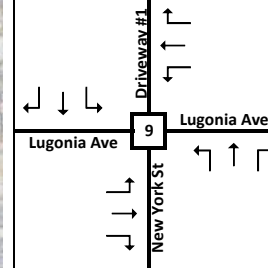
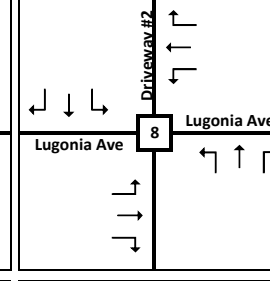
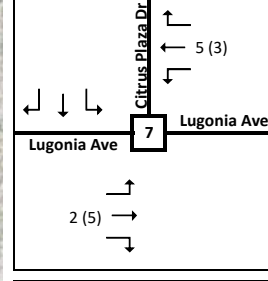
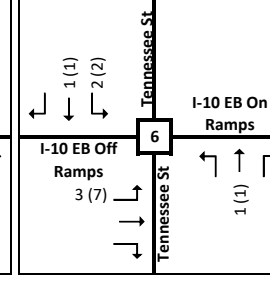
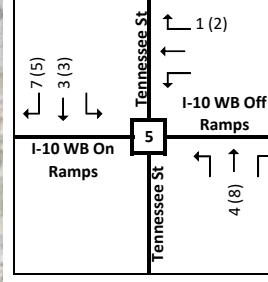
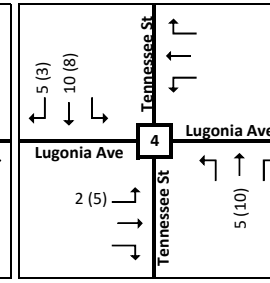
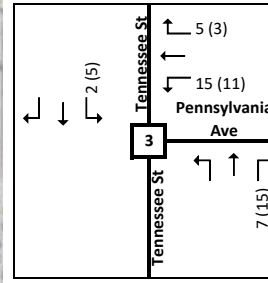
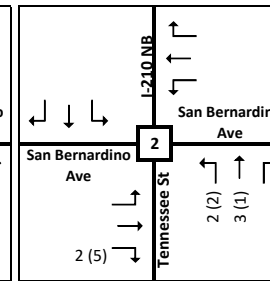
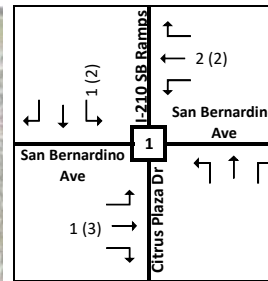
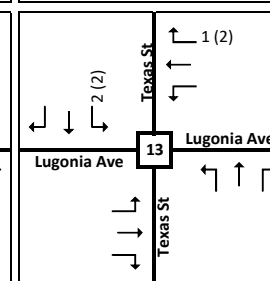
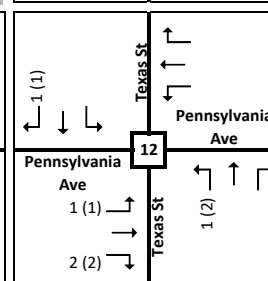
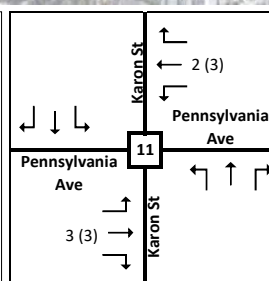
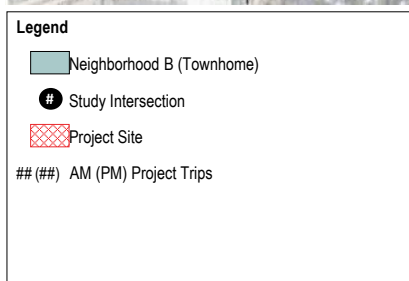


**Scenario B:**

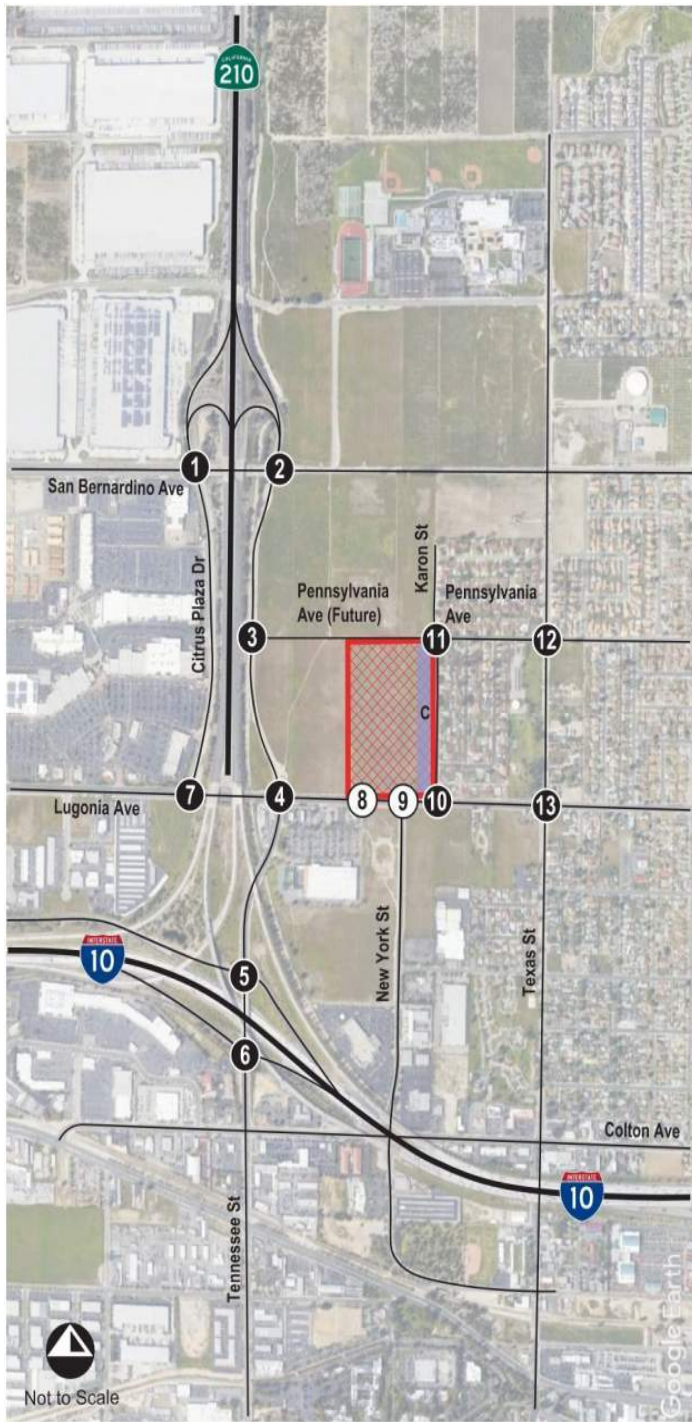
**Intersection Project Trips (Neighborhood A)**

Note: Scenario B = With Pennsylvania Ave Connection

Exhibit 19

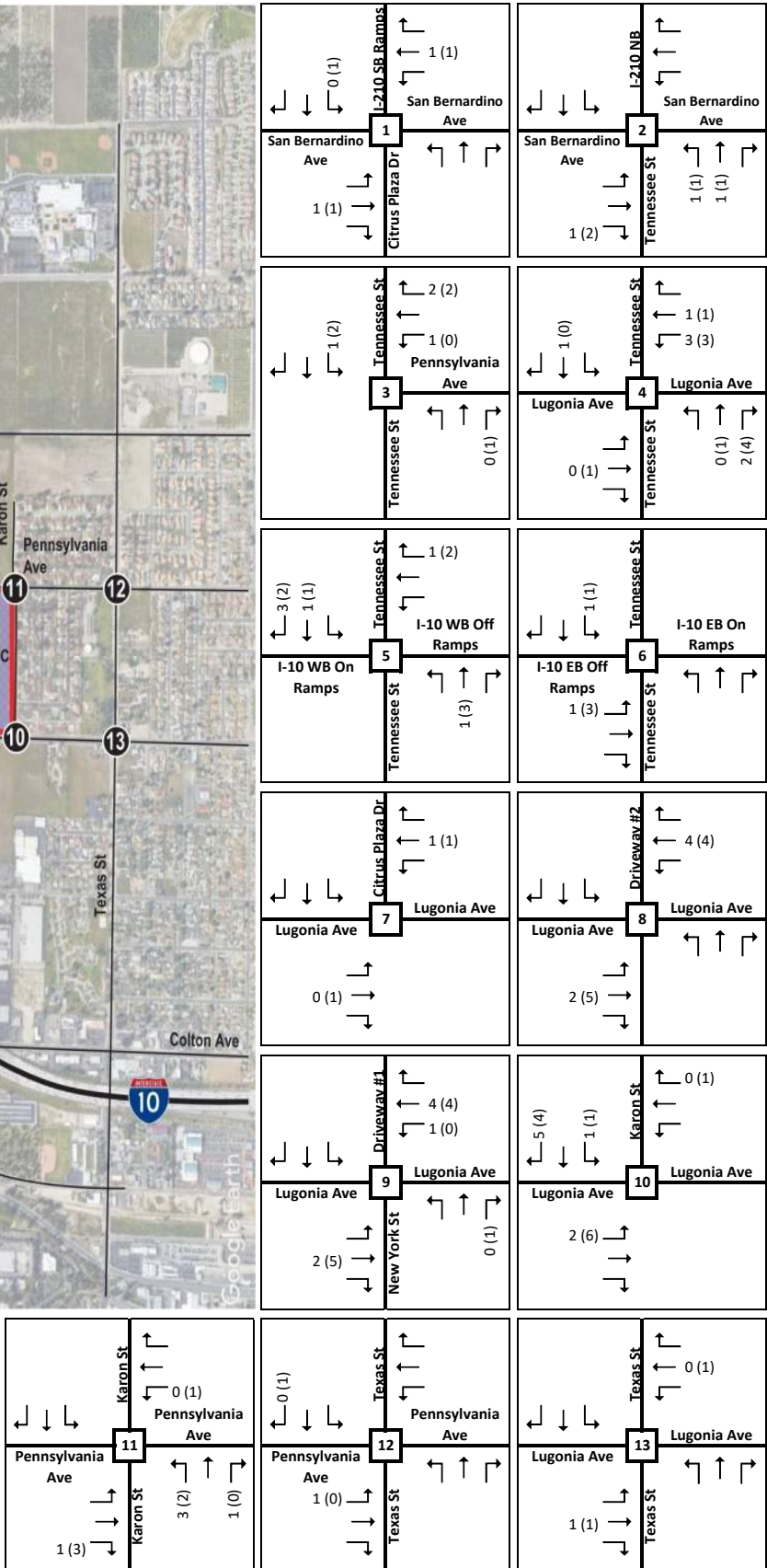


## Scenario B: Intersection Project Trips (Neighborhood B)



**Legend**

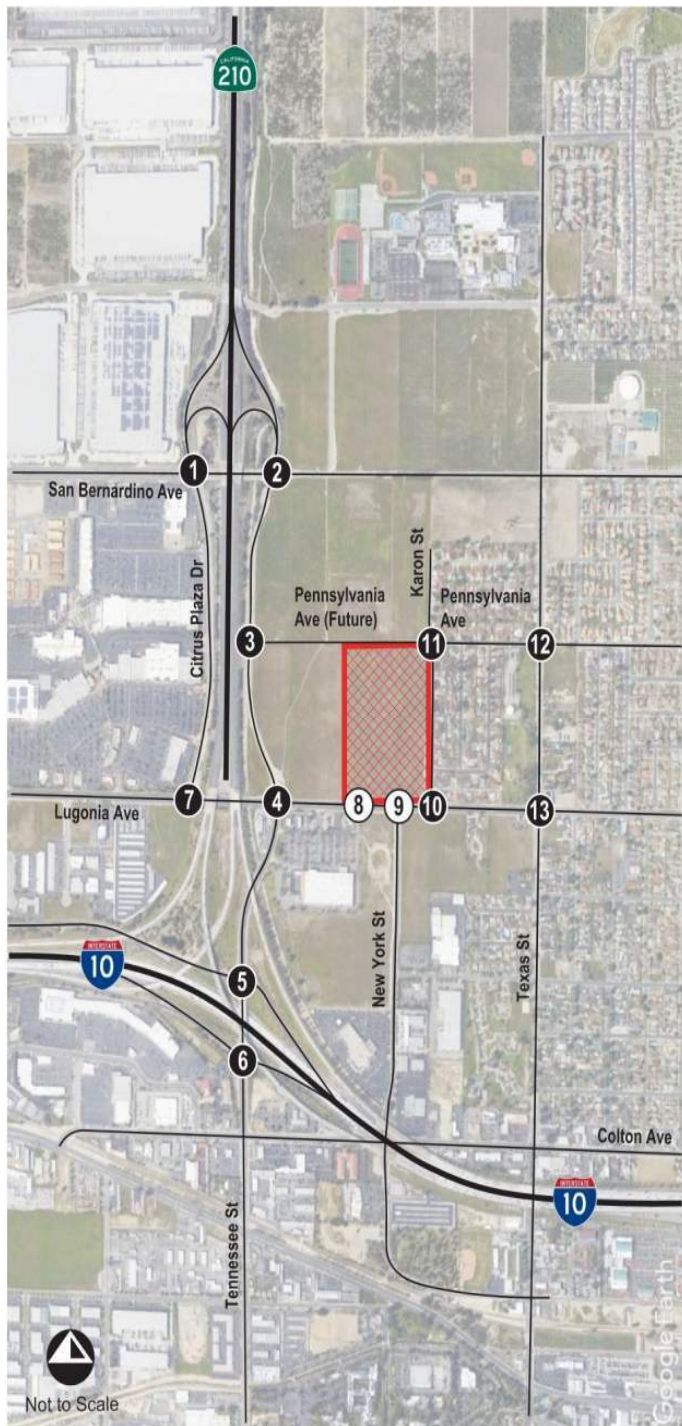
- Neighborhood C (Single Family)
- Study Intersection
- Project Site
- ## (##) AM (PM) Project Trips



## Scenario B: Intersection Project Trips (Neighborhood C)

Note: Scenario B = With Pennsylvania Ave Connection

Exhibit 21



**Legend**

- # Study Intersection
- Project Site
- ## (##) AM (PM) Project Trips




Not to Scale

## Scenario B: Segment Project Trips (Total)

Note: Scenario B = With Pennsylvania Ave Connection

Exhibit 23



# Appendix B: Volume Development Worksheets

**Redlands Neighborhoods at Lugonia Village**  
Volume Development

Intersection/Movement	Counts		Balance		Existing		Project Only (Scenario A Cul-de-sac)		Existing With Project (Scenario A)		Project Only (Scenario B Penn Connection)		Existing With Project (Scenario B)		Existing (Scenario B Changes)		Existing With Project (Scenario B) Final		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
1) W San Bernardino Avenue / I-210 Southbound Ramps	NBL	15	40			15	40	14	9	29	49	13	8	28	48			28	48
	NBT	4	61			4	61	0	0	4	61	0	0	4	61			4	61
	NBR	35	268		1	35	269	0	0	35	269	0	0	35	269			35	269
	SBL	193	143	-3	1	190	144	5	17	195	161	5	17	195	161			195	161
	SBT	175	256			175	256	0	0	175	256	0	0	175	256			175	256
	SBR	150	125			150	125	0	0	150	125	0	0	150	125			150	125
	EBL	59	102			59	102	0	0	59	102	0	0	59	102			59	102
	EBT	276	578	-4	2	272	580	1	2	273	582	2	4	274	584			274	584
	EBR	40	70			40	70	4	15	44	85	4	14	44	84			44	84
	WBL	65	124		1	65	125	0	0	65	125	0	0	65	125			65	125
	WBT	310	229	2	1	312	230	2	2	314	232	3	3	315	233			315	233
WBR	242	128	2	1	244	129	0	0	244	129	0	0	244	129			244	129	
2) W San Bernardino Avenue / I-210 Northbound Ramps	NBL	32	55		-1	32	54	2	2	34	56	3	3	35	57			35	57
	NBT	263	376	-1	-2	262	374	15	10	277	384	17	10	279	384			279	384
	NBR	49	37			49	37	2	0	51	37	0	0	49	37			49	37
	SBL	126	184			126	184	0	0	126	184	0	0	126	184			126	184
	SBT	17	12			17	12	0	0	17	12	0	0	17	12			17	12
	SBR	84	110	-1		83	110	0	0	83	110	0	0	83	110			83	110
	EBL	110	395	2	-2	112	393	0	0	112	393	0	0	112	393			112	393
	EBT	283	485	5	-4	288	481	0	1	288	482	0	0	288	481			288	481
	EBR	96	116	1	3	97	119	6	18	103	137	7	21	104	140			104	140
	WBL	46	22		1	46	23	1	2	47	25	0	0	46	23			46	23
	WBT	508	322	-2	-2	506	320	0	0	506	320	0	0	506	320			506	320
WBR	273	159			273	159	1	1	274	160	0	0	273	159			273	159	
3) Tennessee Street / Pennsylvania Avenue (Future)	NBL				0	0	0	0	0	0	0	0	0	0			0	0	
	NBT				343	465	13	8	356	473	13	8	356	473			356	473	
	NBR				0	0	8	17	8	17	7	16	7	16	9	21	16	37	
	SBL				0	0	0	3	6	3	6	3	7	3	7			3	7
	SBT				160	154	4	14	164	168	4	14	164	168			164	168	
	SBR				0	0	0	0	0	0	0	0	0	0	0			0	0
	EBL				0	0	0	0	0	0	0	0	0	0	0			0	0
	EBT				0	0	0	0	0	0	0	0	0	0	0			0	0
	EBR				0	0	0	0	0	0	0	0	0	0	0			0	0
	WBL				0	0	0	17	13	17	13	16	11	16	11	11	11	27	22
	WBT				0	0	0	0	0	0	0	0	0	0	0			0	0
WBR				0	0	6	4	6	4	7	5	7	5			7	5		
4) Tennessee Street / W Lugonia Avenue	NBL	161	301			161	301	0	0	161	301	0	0	161	301			161	301
	NBT	224	297	1	2	225	299	5	10	230	309	5	11	230	310	3	4	233	314
	NBR	98	206			98	206	18	59	116	265	19	59	117	265	-3	-4	114	261
	SBL	54	75		-2	54	73	6	16	60	89	4	14	58	87			58	87
	SBT	102	77		-2	102	75	10	8	112	83	11	8	113	83	3	2	116	85
	SBR	4	6			4	6	5	3	9	9	5	3	9	9	8	9	17	18
	EBL	29	59			29	59	2	5	31	64	2	5	31	64	6	17	37	81
	EBT	173	740			173	740	13	44	186	784	12	42	185	782	-6	-17	179	765
	EBR	125	404			125	404	0	0	125	404	0	0	125	404			125	404
	WBL	125	116			125	116	56	35	181	151	55	35	180	151	-3	-2	177	149
	WBT	361	426			361	426	41	26	402	452	40	25	401	451	-8	-9	393	442
WBR	88	106	1	1	89	107	14	10	103	117	13	8	102	115			102	115	
5) Tennessee Street / I-10 Westbound Ramps	NBL	209	223			209	223	0	0	209	223	0	0	209	223			209	223
	NBT	425	681	2	-1	427	680	17	52	444	732	18	52	445	732			445	732
	NBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBT	316	516	-1	2	315	518	17	12	332	530	17	12	332	530			332	530
	SBR	108	105			108	105	49	31	157	136	49	31	157	136			157	136
	EBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBL	218	118	-1	1	217	119	0	0	217	119	0	0	217	119			217	119
	WBT	5	3			5	3	0	0	5	3	0	0	5	3			5	3
WBR	161	214			161	214	6	17	167	231	6	18	167	232			167	232	
6) Tennessee Street / I-10 Eastbound Ramps	NBL	0	0			0	0	0	0	0	0	0	0	0			0	0	
	NBT	510	619	-1	1	509	620	1	1	510	621	1	1	510	621			510	621
	NBR	112	149			112	149	0	0	112	149	0	0	112	149			112	149
	SBL	107	229	1	-1	108	228	16	11	124	239	16	11	124	239			124	239
	SBT	422	410	2	-1	424	409	1	1	425	410	1	1	425	410			425	410
	SBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	EBL	127	283			127	283	16	51	143	334	17	51	144	334			144	334
	EBT	144	348			144	348	0	0	144	348	0	0	144	348			144	348
	EBR	321	354			321	354	0	0	321	354	0	0	321	354			321	354
	WBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
WBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0	
7) W Lugonia Avenue / Citrus Plaza Drive	NBL	0	0			0	0	0	0	0	0	0	0	0			0	0	
	NBT	0	0			0	0	0	0	0	0	0	0	0			0	0	
	NBR	0	0			0	0	0	0	0	0	0	0	0			0	0	
	SBL	141	491	1	-2	142	489	4	15	146	504	4	14	146	503			146	503
	SBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	SBR	64	129			64	129	0	0	64	129	0	0	64	129			64	129
	EBL	14	62			14	62	0	0	14	62	0	0	14	62			14	62
	EBT	184	718	1	-4	185	714	11	34	196	748	10	33	195	747			195	747
	EBR	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBL	0	0			0	0	0	0	0	0	0	0	0	0			0	0
	WBT	440	450	2	-6	442	444	32	20	474	464	32	20	474	464			474	464
WBR	84	293		-4	84	289	14	9	98	298	13	8	97	297			97	297	

**Redlands Neighborhoods at Lugonia Village**  
Volume Development

Intersection/Movement	Counts		Balance		Existing		Project Only (Scenario A Cul-de-sac)		Existing With Project (Scenario A)		Project Only (Scenario B Penn Connection)		Existing With Project (Scenario B)		Existing (Scenario B Changes)		Existing With Project (Scenario B) Final																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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	SBR				0	0	52	32	52	32	52	32	52	32			52	32		EBL				0	0	0	0	0	0	0	0	0	0			0	0		EBT				382	1114	37	119	419	1233	35	115	417	1229	-9	-21	408	1208		EBR				0	0	0	0	0	0	0	0	0	0			0	0		WBL				0	0	0	0	0	0	0	0	0	0			0	0		WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																															
	EBL				0	0	0	0	0	0	0	0	0	0			0	0		EBT				382	1114	37	119	419	1233	35	115	417	1229	-9	-21	408	1208		EBR				0	0	0	0	0	0	0	0	0	0			0	0		WBL				0	0	0	0	0	0	0	0	0	0			0	0		WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																		
	EBT				382	1114	37	119	419	1233	35	115	417	1229	-9	-21	408	1208		EBR				0	0	0	0	0	0	0	0	0	0			0	0		WBL				0	0	0	0	0	0	0	0	0	0			0	0		WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																					
	EBR				0	0	0	0	0	0	0	0	0	0			0	0		WBL				0	0	0	0	0	0	0	0	0	0			0	0		WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																								
	WBL				0	0	0	0	0	0	0	0	0	0			0	0		WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																											
	WBT				619	672	59	39	678	711	56	36	675	708	-11	-11	664	697		WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																														
	WBR				0	0	0	0	0	0	0	0	0	0			0	0	9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																	
9) W Lugonia Avenue / New York Street	NBL	88	169		88	169	0	0	88	169	0	0	88	169			88	169		NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																				
	NBT	0	0		0	0	2	7	2	7	2	7	2	7			2	7		NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																							
	NBR	26	57		26	57	0	1	26	58	0	1	26	58			26	58		SBL	0	0		0	0	13	8	13	8	13	8	13	8			13	8		SBT	0	0		0	0	7	5	7	5	7	5	7	5			7	5		SBR	0	0		0	0	52	32	52	32	52	32	52	32			52	32		EBL	0	0		0	0	33	110	33	110	33	110	33	110			33	110		EBT	296	944	2	8	298	952	11	13	309	965	9	9	307	961	-9	-21	298	940		EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																										
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	EBR	84	162		84	162	0	0	84	162	0	0	84	162			84	162		WBL	39	40		39	40	1	0	40	40	1	0	40	40			40	40		WBT	532	508	-1	-5	531	503	7	7	538	510	4	4	535	507	-11	-11	524	496		WBR	0	0		0	0	6	21	6	21	6	21	6	21			6	21	10) W Lugonia Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		NBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBL	5	3		5	3	1	1	6	4	1	1	6	4			6	4		SBT	0	0		0	0	0	0	0	0	0	0	0	0			0	0		SBR	36	26		36	26	7	5	43	31	5	4	41	30	-11	-11	30	19		EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																													
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	EBL	26	82		26	82	2	8	28	90	2	6	28	88	-9	-21	19	67		EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	EBT	299	935	-1	-8	298	927	22	14	320	941	20	12	318	939			318	939		EBR	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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	WBT	533	512	1	5	534	517	7	23	541	540	6	21	540	538			540	538		WBR	3	8		3	8	0	1	3	9	0	1	3	9			3	9	11) Pennsylvania Avenue / Karon Street	NBL	0	0		0	0	0	0	0	0	3	2	3	2			3	2		NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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	NBT	6	14		6	14	0	0	6	14	0	0	6	14			6	14		NBR	23	52		23	52	2	1	25	53	1	0	24	52	-9	-21	15	31		SBL	0	2		0	2	0	0	0	2	0	0	0	2			0	2		SBT	6	7		6	7	0	0	6	7	0	0	6	7	-2	-3	4	4		SBR	0	0		0	0	0	0	0	0	0	0	0	0	2	3	2	3		EBL	0	0		0	0	0	0	0	0	0	0	0	0			0	0		EBT	0	0		0	0	0	0	0	0	3	3	3	3	9	21	12	24		EBR	0	0		0	0	0	0	0	0	1	3	1	3			1	3		WBL	22	21		22	21	1	2	23	23	0	1	22	22	-9	-8	13	14		WBT	0	0		0	0	0	0	0	0	2	3	2	3	9	8	11	11		WBR	3	2		3	2	0	0	3	2	0	0	3	2			3	2	12) Pennsylvania Avenue / Texas Street	NBL	5	7		5	7	0	0	5	7	1	2	6	9			6	9		NBT	182	265		182	265	7	4	189	269	7	4	189	269			189	269		NBR	44	89		44	89	0	0	44	89	0	0	44	89			44	89		SBL	42	26		42	26	0	0	42	26	0	0	42	26			42	26		SBT	252	183		252	183	2	7	254	190	2	7	254	190			254	190		SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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	SBR	6	16		6	16	1	2	7	18	1	2	7	18			7	18		EBL	25	16		25	16	2	1	27	17	2	1	27	17			27	17		EBT	10	39		10	39	0	0	10	39	0	0	10	39			10	39		EBR	15	11		15	11	0	0	15	11	2	2	17	13			17	13		WBL	131	68		131	68	0	0	131	68	0	0	131	68			131	68		WBT	25	16		25	16	0	0	25	16	0	0	25	16			25	16		WBR	49	24		49	24	0	0	49	24	0	0	49	24			49	24	13) W Lugonia Avenue / Texas Street	NBL	47	100	-2	5	45	105	0	0	45	105	0	0	45	105			45	105		NBT	174	259		174	259	0	0	174	259	0	0	174	259			174	259		NBR	94	143		94	143	0	0	94	143	0	0	94	143			94	143		SBL	25	16	-2	2	23	18	0	0	23	18	2	2	25	20			25	20		SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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	SBT	295	222		295	222	0	0	295	222	0	0	295	222			295	222		SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	SBR	72	33		72	33	2	7	74	40	2	7	74	40			74	40		EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	EBL	32	74	3	-6	35	68	7	4	42	72	7	4	42	72			42	72		EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	EBT	207	837	16	-68	223	769	16	11	239	780	14	9	237	778			237	778		EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	EBR	42	101	3	-8	45	93	0	0	45	93	0	0	45	93			45	93		WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	WBL	191	86		191	86	0	0	191	86	0	0	191	86			191	86		WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	WBT	436	365	-14	20	422	385	5	17	427	402	4	15	426	400			426	400		WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	WBR	25	12		25	12	0	0	25	12	1	2	26	14			26	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Note: Existing With Project (Scenario B) Final assumed a 40% redistribution of Existing project trips due to new connection at #11

# Appendix C: Existing Year 2022 AM Peak Hour Analysis Worksheets

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	272	40	65	312	244	15	4	35	190	175	150
Future Volume (vph)	59	272	40	65	312	244	15	4	35	190	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			257			113			167
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	66	302	44	72	347	271	17	4	39	211	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	302	44	72	347	271	17	4	39	211	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.0	20.0	9.1	20.2	20.2	6.4	6.4	10.8	16.8	15.6	
Actuated g/C Ratio	0.15	0.33	0.33	0.15	0.33	0.33	0.11	0.11	0.18	0.28	0.26	
v/c Ratio	0.29	0.29	0.08	0.30	0.62	0.41	0.10	0.02	0.11	0.48	0.39	
Control Delay	32.5	17.5	0.2	32.3	24.5	5.3	35.1	34.2	0.6	28.8	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.5	17.5	0.2	32.3	24.5	5.3	35.1	34.2	0.6	28.8	14.2	
LOS	C	B	A	C	C	A	D	C	A	C	B	
Approach Delay		18.0			17.8			12.6			19.6	
Approach LOS		B			B			B			B	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	24.8	24.8	10.3	25.1	25.1	0.0	0.0	10.3	17.3	16.0	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
50th %ile Green (s)	8.4	18.5	18.5	8.6	18.7	18.7	0.0	0.0	8.6	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	15.9	15.9	7.4	16.1	16.1	0.0	0.0	7.4	15.6	14.3	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.4	10.4	0.0	10.4	10.4	0.0	0.0	0.0	11.6	10.3	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	178	0	56	237	31	16	7	0	146	136	
Fuel Used(gal)	1	4	0	1	5	2	1	0	1	4	5	
CO Emissions (g/hr)	84	309	25	77	323	126	36	11	47	289	383	
NOx Emissions (g/hr)	16	60	5	15	63	25	7	2	9	56	75	
VOC Emissions (g/hr)	20	71	6	18	75	29	8	3	11	67	89	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	22	43	0	24	107	3	6	1	0	62	28	
Queue Length 95th (ft)	74	95	0	78	245	56	30	13	0	#208	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	506	1902	921	516	1001	987	172	873	598	501	2263	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023

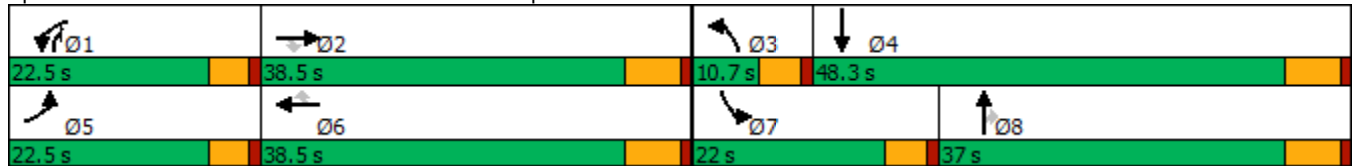


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.05	0.14	0.35	0.27	0.10	0.00	0.07	0.42	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	60.9
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	18.3
Intersection LOS:	B
Intersection Capacity Utilization	53.8%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	67.8
50th %ile Actuated Cycle:	59.8
30th %ile Actuated Cycle:	54.3
10th %ile Actuated Cycle:	32.7
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	59	272	40	65	312	244	15	4	35	190	175	150
Future Volume (veh/h)	59	272	40	65	312	244	15	4	35	190	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	302	44	72	347	271	17	4	39	211	194	167
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, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	139	888	399	141	467	409	33	138	263	272	419	341
Arrive On Green	0.09	0.27	0.27	0.09	0.27	0.27	0.02	0.09	0.09	0.17	0.24	0.24
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	302	44	72	347	271	17	4	39	211	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.2	1.3	2.4	10.5	9.1	0.6	0.1	1.3	7.2	5.3	5.7
Cycle Q Clear(g_c), s	2.3	4.2	1.3	2.4	10.5	9.1	0.6	0.1	1.3	7.2	5.3	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	139	888	399	141	467	409	33	138	263	272	400	360
V/C Ratio(X)	0.48	0.34	0.11	0.51	0.74	0.66	0.52	0.03	0.15	0.78	0.46	0.49
Avail Cap(c_a), veh/h	494	1858	835	502	978	856	168	856	948	487	1259	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	16.4	15.3	24.6	18.7	18.2	27.4	23.6	19.7	22.4	18.5	18.6
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.8	2.3	1.8	12.1	0.1	0.3	4.8	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.4	0.4	1.0	4.0	3.0	0.3	0.0	0.4	2.8	2.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	16.6	15.5	27.5	21.0	20.0	39.5	23.7	19.9	27.2	19.3	19.6
LnGrp LOS	C	B	B	C	C	C	D	C	B	C	B	B
Approach Vol, veh/h		412			690			60			572	
Approach Delay, s/veh		18.2			21.3			25.7			22.3	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	21.5	5.9	19.5	9.7	21.5	14.3	11.0				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	4.4	6.2	2.6	7.7	4.3	12.5	9.2	3.3				
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	97	46	506	273	32	262	49	126	17	83
Future Volume (vph)	112	288	97	46	506	273	32	262	49	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.976			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3131	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3131	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113			286		17			97	
Link Speed (mph)		30			45			35			30	
Link Distance (ft)		720			275			1384			978	
Travel Time (s)		16.4			4.2			27.0			22.2	
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	335	113	53	588	317	37	305	57	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	113	53	588	317	37	362	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.2	43.2	10.4	39.6	39.6	10.2	17.9		13.4	28.0	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.17		0.13	0.27	
v/c Ratio	0.48	0.46	0.17	0.35	0.88	0.42	0.24	0.65		0.73	0.26	
Control Delay	54.0	26.6	5.1	54.9	45.5	5.9	52.2	44.1		67.8	11.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.0	26.6	5.1	54.9	45.5	5.9	52.2	44.1		67.8	11.7	
LOS	D	C	A	D	D	A	D	D		E	B	
Approach Delay		28.6			32.9			44.9			42.9	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	19.2		14.3	23.5	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	43.9	43.9	10.0	43.9	43.9	10.0	17.1		14.3	21.4	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.3	37.3	10.0	37.3	37.3	0.0	14.8		14.0	33.5	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.1	42.1	0.0	27.4	27.4	0.0	11.2		10.1	26.0	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	43	426	34	30	261		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	11		3	1	
CO Emissions (g/hr)	169	300	50	90	884	153	83	756		230	79	
NOx Emissions (g/hr)	33	58	10	18	172	30	16	147		45	15	
VOC Emissions (g/hr)	39	70	12	21	205	35	19	175		53	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	164	0	35	350	13	24	118		98	11	
Queue Length 95th (ft)	80	275	34	79	#585	65	60	160		#207	52	
Internal Link Dist (ft)		640			195			1304			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	270	768	715	156	784	830	153	911		217	521	

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023

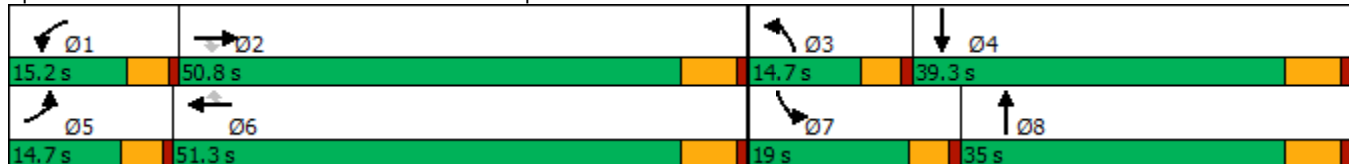


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.44	0.16	0.34	0.75	0.38	0.24	0.40		0.68	0.22	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	102.9
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.88
Intersection Signal Delay:	35.1
Intersection LOS:	D
Intersection Capacity Utilization:	72.4%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	120
70th %ile Actuated Cycle:	110.2
50th %ile Actuated Cycle:	106.7
30th %ile Actuated Cycle:	97.5
10th %ile Actuated Cycle:	80.1
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing AM  
 01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↑↘		↖	↘	
Traffic Volume (veh/h)	112	288	97	46	506	273	32	262	49	126	17	83
Future Volume (veh/h)	112	288	97	46	506	273	32	262	49	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	113	53	588	317	37	305	57	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	301	711	602	126	670	573	106	420	77	177	50	242
Arrive On Green	0.11	0.41	0.41	0.08	0.38	0.38	0.07	0.15	0.15	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2724	503	1556	249	1207
Grp Volume(v), veh/h	130	335	113	53	588	317	37	179	183	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1610	1556	0	1456
Q Serve(g_s), s	3.9	12.4	4.3	2.9	27.4	14.6	2.0	9.3	9.6	8.2	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.4	4.3	2.9	27.4	14.6	2.0	9.3	9.6	8.2	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.83
Lane Grp Cap(c), veh/h	301	711	602	126	670	573	106	249	248	177	0	291
V/C Ratio(X)	0.43	0.47	0.19	0.42	0.88	0.55	0.35	0.72	0.74	0.83	0.00	0.40
Avail Cap(c_a), veh/h	314	885	750	182	902	771	178	531	529	252	0	549
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00
Uniform Delay (d), s/veh	36.8	19.2	16.8	38.5	25.4	21.4	39.3	35.5	35.6	38.3	0.0	30.7
Incr Delay (d2), s/veh	1.0	0.5	0.1	2.2	7.6	0.8	2.0	3.9	4.2	14.7	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.9	1.4	1.1	11.7	5.0	0.8	3.8	3.9	3.8	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	19.7	16.9	40.7	33.0	22.3	41.3	39.4	39.8	53.0	0.0	31.6
LnGrp LOS	D	B	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		578			958			399				264
Approach Delay, s/veh		23.2			29.9			39.8				43.5
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	42.0	10.7	23.7	14.3	39.7	14.7	19.6				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0				
Max Q Clear Time (g_c+I1), s	4.9	14.4	4.0	8.2	5.9	29.4	10.2	11.6				
Green Ext Time (p_c), s	0.0	2.5	0.0	0.7	0.1	4.2	0.1	1.9				

Intersection Summary

HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing AM  
01/13/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	173	125	125	361	89	161	225	98	54	102	4
Future Volume (vph)	29	173	125	125	361	89	161	225	98	54	102	4
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.970				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1681	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1681	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		15				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	186	134	134	388	96	173	242	105	58	110	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	186	134	134	484	0	173	242	105	58	110	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing AM  
01/13/2023



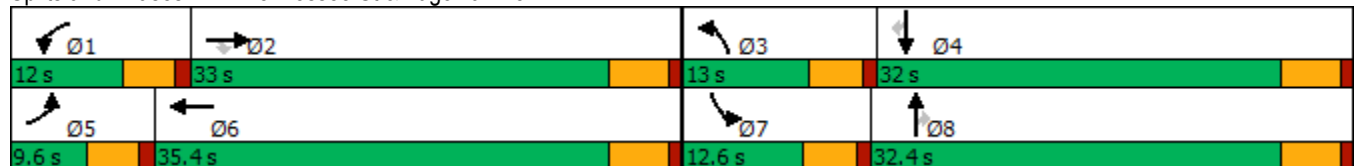
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.7	15.6	15.6	8.4	26.1		9.5	18.3	18.3	7.7	14.1	14.1
Actuated g/C Ratio	0.09	0.24	0.24	0.13	0.40		0.15	0.28	0.28	0.12	0.22	0.22
v/c Ratio	0.25	0.23	0.29	0.68	0.71		0.76	0.50	0.21	0.31	0.30	0.01
Control Delay	42.1	21.3	6.3	55.6	26.7		59.4	27.1	3.9	38.5	25.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	21.3	6.3	55.6	26.7		59.4	27.1	3.9	38.5	25.7	0.0
LOS	D	C	A	E	C		E	C	A	D	C	A
Approach Delay		17.4			33.0			33.2			29.4	
Approach LOS		B			C			C			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.1	19.1	8.1	18.7	18.7
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	0.0	15.1	15.1	7.5	27.1		8.5	16.3	16.3	8.1	15.9	15.9
50th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	7.6	7.6	7.5	19.6		8.5	20.8	20.8	0.0	7.8	7.8
30th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.2	6.2	7.5	18.2		8.5	8.0	8.0	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Hold	Hold	Skip	Skip	Skip
Stops (vph)	29	118	18	87	326		108	171	8	49	75	0
Fuel Used(gal)	1	3	1	3	9		4	5	1	2	3	0
CO Emissions (g/hr)	49	204	74	216	599		313	345	83	129	216	5
NOx Emissions (g/hr)	10	40	14	42	117		61	67	16	25	42	1
VOC Emissions (g/hr)	11	47	17	50	139		73	80	19	30	50	1
Dilemma Vehicles (#)	0	9	0	0	27		0	13	0	0	5	0
Queue Length 50th (ft)	12	32	0	54	150		70	86	0	22	36	0
Queue Length 95th (ft)	#46	65	40	#197	#414		#244	182	24	70	88	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	123	1615	780	198	886		227	800	754	216	788	767



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.12	0.17	0.68	0.55		0.76	0.30	0.14	0.27	0.14	0.01

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	64.8
Natural Cycle:	85
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	29.4
Intersection LOS:	C
Intersection Capacity Utilization:	62.8%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	89.6
70th %ile Actuated Cycle:	81.7
50th %ile Actuated Cycle:	66
30th %ile Actuated Cycle:	50.4
10th %ile Actuated Cycle:	36.2
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: Tennessee St & Lugonia Ave



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing AM  
01/13/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	173	125	125	361	89	161	225	98	54	102	4
Future Volume (veh/h)	29	173	125	125	361	89	161	225	98	54	102	4
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	31	186	134	134	388	96	173	242	105	58	110	4
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, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	49	949	421	164	480	119	211	344	296	85	207	181
Arrive On Green	0.03	0.28	0.28	0.11	0.35	0.35	0.13	0.20	0.20	0.05	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1360	337	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	31	186	134	134	0	484	173	242	105	58	110	4
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1697	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.1	2.2	3.8	4.5	0.0	13.7	5.7	7.0	3.3	1.9	3.2	0.1
Cycle Q Clear(g_c), s	1.1	2.2	3.8	4.5	0.0	13.7	5.7	7.0	3.3	1.9	3.2	0.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	949	421	164	0	599	211	344	296	85	207	181
V/C Ratio(X)	0.63	0.20	0.32	0.82	0.00	0.81	0.82	0.70	0.35	0.68	0.53	0.02
Avail Cap(c_a), veh/h	137	1775	788	220	0	971	251	885	761	239	872	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	14.5	15.0	23.2	0.0	15.6	22.4	19.7	18.3	24.7	21.9	20.6
Incr Delay (d2), s/veh	12.4	0.1	0.4	15.8	0.0	2.7	16.7	2.6	0.7	9.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	1.1	2.2	0.0	4.8	2.9	2.7	1.0	0.9	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	14.6	15.5	39.1	0.0	18.2	39.0	22.4	19.0	33.9	24.1	20.6
LnGrp LOS	D	B	B	D	A	B	D	C	B	C	C	C
Approach Vol, veh/h		351			618			520			172	
Approach Delay, s/veh		17.0			22.7			27.2			27.3	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	20.0	11.6	11.4	6.3	23.7	7.4	15.7				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4				
Max Q Clear Time (g_c+I1), s	6.5	5.8	7.7	5.2	3.1	15.7	3.9	9.0				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.5	0.0	2.6	0.0	1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.4								
HCM 6th LOS				C								



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↕	
Traffic Volume (vph)	0	0	0	217	5	161	209	427	0	0	315	108
Future Volume (vph)	0	0	0	217	5	161	209	427	0	0	315	108
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.937							0.952
Flt Protected					0.972		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3132	0
Flt Permitted					0.972		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3132	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					166							87
Link Speed (mph)		30			30			35				35
Link Distance (ft)		855			1108			612				817
Travel Time (s)		19.4			25.2			11.9				15.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	0	0	224	5	166	215	440	0	0	325	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	395	0	215	440	0	0	477	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.69		0.70	0.19			0.30	
Control Delay					27.2		36.6	7.7			13.5	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.2		36.6	7.7			13.5	
LOS					C		D	A			B	
Approach Delay					27.2			17.2			13.5	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					206		192	238			209	
Fuel Used(gal)					7		4	4			7	
CO Emissions (g/hr)					459		274	304			507	
NOx Emissions (g/hr)					89		53	59			99	
VOC Emissions (g/hr)					106		64	70			118	
Dilemma Vehicles (#)					0		0	32			23	
Queue Length 50th (ft)					64		117	87			65	
Queue Length 95th (ft)					105		186	116			128	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					854		452	2358			1570	

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing AM  
01/13/2023

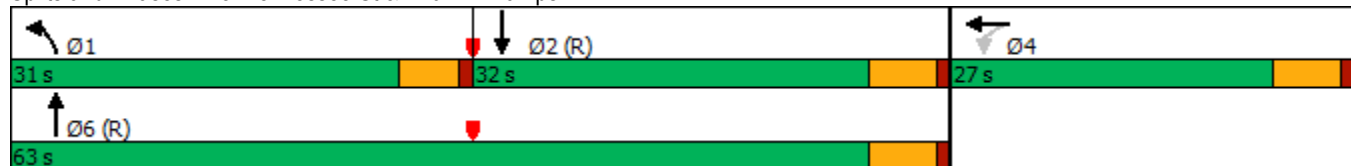


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.46		0.48	0.19			0.30	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	18.7
Intersection LOS:	B
Intersection Capacity Utilization	57.7%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 5: Tennessee St & I-10 WB Ramps



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing AM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↔	
Traffic Volume (veh/h)	0	0	0	217	5	161	209	427	0	0	315	108
Future Volume (veh/h)	0	0	0	217	5	161	209	427	0	0	315	108
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	166	215	440	0	0	325	152
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				273	7	237	246	2265	0	0	1089	499
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	40	1337	1581	3318	0	0	2313	1019
Grp Volume(v), veh/h				224	0	171	215	440	0	0	242	235
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1574
Q Serve(g_s), s				12.6	0.0	10.5	11.6	0.0	0.0	0.0	7.8	8.1
Cycle Q Clear(g_c), s				12.6	0.0	10.5	11.6	0.0	0.0	0.0	7.8	8.1
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.65
Lane Grp Cap(c), veh/h				273	0	244	246	2265	0	0	817	771
V/C Ratio(X)				0.82	0.00	0.70	0.88	0.19	0.00	0.00	0.30	0.30
Avail Cap(c_a), veh/h				368	0	329	457	2265	0	0	817	771
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.8	30.2	0.0	0.0	0.0	13.7	13.8
Incr Delay (d2), s/veh				10.3	0.0	4.1	9.0	0.2	0.0	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
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.7	4.2	0.1	0.0	0.0	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.9	0.0	38.9	39.2	0.2	0.0	0.0	14.6	14.8
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					395			655			477	
Approach Delay, s/veh					42.9			13.0			14.7	
Approach LOS					D			B			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.6		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	10.1		14.6		2.0						
Green Ext Time (p_c), s	0.5	2.6		1.4		3.2						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											21.3	
HCM 6th LOS											C	

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↙	↕↕	
Traffic Volume (vph)	127	144	321	0	0	0	0	509	112	108	424	0
Future Volume (vph)	127	144	321	0	0	0	0	509	112	108	424	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.919						0.973				
Flt Protected		0.989								0.950		
Satd. Flow (prot)	0	2977	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.989								0.950		
Satd. Flow (perm)	0	2977	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		328						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	147	328	0	0	0	0	519	114	110	433	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	0	0	0	633	0	110	433	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		15.9						48.9		11.6	63.1	
Actuated g/C Ratio		0.18						0.54		0.13	0.70	
v/c Ratio		0.76						0.36		0.55	0.18	
Control Delay		21.8						14.5		40.8	2.3	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		21.8						14.5		40.8	2.3	
LOS		C						B		D	A	
Approach Delay		21.8						14.5			10.1	
Approach LOS		C						B			B	
90th %ile Green (s)	23.7	23.7						34.0		16.3	55.3	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	19.1	19.1						41.3		13.6	59.9	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	15.6	15.6						46.8		11.6	63.4	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	12.9	12.9						51.4		9.7	66.1	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.0	8.0						71.0		0.0	71.0	
10th %ile Term Code	Gap	Gap						Coord		Skip	Coord	
Stops (vph)		258						344		95	106	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		676						492		146	201	
NOx Emissions (g/hr)		132						96		28	39	
VOC Emissions (g/hr)		157						114		34	47	
Dilemma Vehicles (#)		0						34		0	7	
Queue Length 50th (ft)		77						101		53	9	
Queue Length 95th (ft)		123						188		82	12	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1078						1736		263	2352	

Neighborhoods at Lugonia Village  
 6: Tennessee St & I-10 EB Ramps

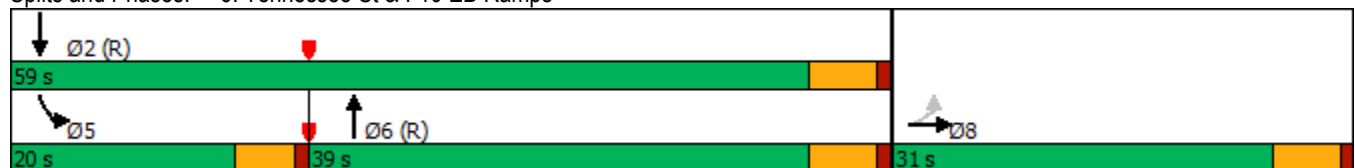
Existing AM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.56						0.36		0.42	0.18	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	15.6
Intersection LOS:	B
Intersection Capacity Utilization	57.7%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 6: Tennessee St & I-10 EB Ramps



Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing AM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↘	↕↕	
Traffic Volume (veh/h)	127	144	321	0	0	0	0	509	112	108	424	0
Future Volume (veh/h)	127	144	321	0	0	0	0	509	112	108	424	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	130	147	328				0	519	114	110	433	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	200	226	370				0	1283	280	137	2092	0
Arrive On Green	0.26	0.26	0.26				0.00	0.48	0.48	0.03	0.21	0.00
Sat Flow, veh/h	780	882	1442				0	2768	586	1569	3455	0
Grp Volume(v), veh/h	277	0	328				0	317	316	110	433	0
Grp Sat Flow(s),veh/h/ln	1663	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	13.4	0.0	19.7				0.0	11.2	11.3	6.3	9.6	0.0
Cycle Q Clear(g_c), s	13.4	0.0	19.7				0.0	11.2	11.3	6.3	9.6	0.0
Prop In Lane	0.47		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	427	0	370				0	786	777	137	2092	0
V/C Ratio(X)	0.65	0.00	0.89				0.00	0.40	0.41	0.80	0.21	0.00
Avail Cap(c_a), veh/h	471	0	409				0	786	777	261	2092	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.96	0.96	0.00
Uniform Delay (d), s/veh	29.8	0.0	32.2				0.0	15.2	15.2	42.9	17.4	0.0
Incr Delay (d2), s/veh	2.7	0.0	19.1				0.0	1.5	1.6	10.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	8.6				0.0	4.2	4.2	2.9	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	0.0	51.3				0.0	16.7	16.8	52.9	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		605						633			543	
Approach Delay, s/veh		42.7						16.7			24.7	
Approach LOS		D						B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			12.9	48.6		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			8.3	13.3		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.8		1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			C									



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing AM  
01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷		↶	↷
Traffic Volume (vph)	14	185	442	84	142	64
Future Volume (vph)	14	185	442	84	142	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.976			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3219	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3219	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	195	465	88	149	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	195	553	0	149	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						

Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing AM  
01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	19.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	4.3	19.0	17.7		7.2	7.2
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.10	0.32		0.24	0.18
Control Delay	16.6	5.4	7.4		13.2	6.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	16.6	5.4	7.4		13.2	6.2
LOS	B	A	A		B	A
Approach Delay	6.2		7.4		11.0	
Approach LOS	A		A		B	
90th %ile Green (s)	4.2	26.0	17.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	11.7	11.7		7.5	7.5
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.4	11.4		6.9	6.9
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.9	16.9		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.3	21.3		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	87	278		106	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	298	460		272	101
NOx Emissions (g/hr)	6	58	90		53	20
VOC Emissions (g/hr)	7	69	107		63	23
Dilemma Vehicles (#)	0	22	59		0	0
Queue Length 50th (ft)	2	8	26		9	0
Queue Length 95th (ft)	17	21	84		36	23
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	204	3225	2934		817	468

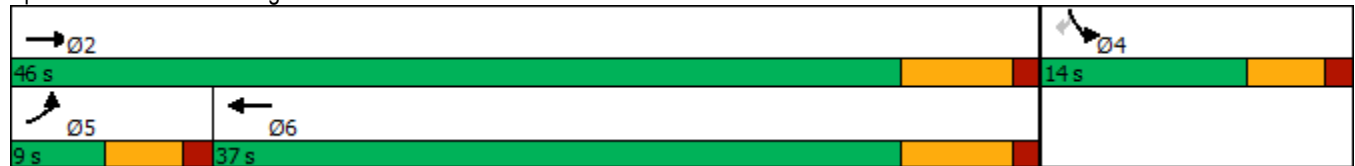


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.19		0.18	0.14

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	33.6
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.32
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	46.3
70th %ile Actuated Cycle:	30.3
50th %ile Actuated Cycle:	29.4
30th %ile Actuated Cycle:	34.6
10th %ile Actuated Cycle:	27.6

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing AM  
01/13/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗		↙	↘
Traffic Volume (veh/h)	14	185	442	84	142	64
Future Volume (veh/h)	14	185	442	84	142	64
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	195	465	88	149	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1626	873	164	407	208
Arrive On Green	0.01	0.49	0.31	0.31	0.14	0.14
Sat Flow, veh/h	1594	3428	2870	523	2910	1490
Grp Volume(v), veh/h	15	195	276	277	149	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1650	1455	1490
Q Serve(g_s), s	0.3	0.9	4.1	4.1	1.4	1.2
Cycle Q Clear(g_c), s	0.3	0.9	4.1	4.1	1.4	1.2
Prop In Lane	1.00			0.32	1.00	1.00
Lane Grp Cap(c), veh/h	19	1626	520	518	407	208
V/C Ratio(X)	0.80	0.12	0.53	0.54	0.37	0.32
Avail Cap(c_a), veh/h	225	4458	1710	1703	900	461
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	14.7	4.2	8.4	8.4	11.6	11.5
Incr Delay (d2), s/veh	52.5	0.0	0.8	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.9	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.2	4.2	9.2	9.3	12.1	12.4
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		210	553		216	
Approach Delay, s/veh		8.7	9.3		12.2	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		20.8		9.0	5.1	15.6
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		2.9		3.4	2.3	6.1
Green Ext Time (p_c), s		1.2		0.3	0.0	3.2
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			9.8			
HCM 6th LOS			A			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑	↓	
Traffic Volume (vph)	298	84	39	531	88	26
Future Volume (vph)	298	84	39	531	88	26
Ideal Flow (vphpl)	1800	1800	1700	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98				
Frt		0.850			0.969	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	3257	1515	1583	1765	1606	0
Flt Permitted			0.950		0.963	
Satd. Flow (perm)	3257	1481	1583	1765	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		95			18	
Link Speed (mph)	35			35	40	
Link Distance (ft)	710			320	976	
Travel Time (s)	13.8			6.2	16.6	
Confl. Peds. (#/hr)		1				
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	1%	2%	2%	3%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	339	95	44	603	100	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	339	95	44	603	130	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.15	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Detector Phase	2	2	1	6	4	
Switch Phase						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	15.0	15.0	10.0	15.0	15.0	
Minimum Split (s)	23.3	23.3	15.0	23.3	23.0	
Total Split (s)	39.0	39.0	17.0	56.0	24.0	
Total Split (%)	48.8%	48.8%	21.3%	70.0%	30.0%	
Maximum Green (s)	33.7	33.7	12.0	50.7	19.0	
Yellow Time (s)	4.3	4.3	4.0	4.3	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.0	5.3	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min	None	Min	None	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	8.0	8.0				
Pedestrian Calls (#/hr)	1	1				
Act Effct Green (s)	23.6	23.6	10.3	28.8	15.4	
Actuated g/C Ratio	0.49	0.49	0.22	0.60	0.32	
v/c Ratio	0.21	0.12	0.13	0.57	0.25	
Control Delay	12.7	4.9	19.6	11.4	14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.7	4.9	19.6	11.4	14.7	
LOS	B	A	B	B	B	
Approach Delay	11.0			12.0	14.7	
Approach LOS	B			B	B	
90th %ile Green (s)	16.3	16.3	10.0	31.3	15.0	
90th %ile Term Code	Hold	Hold	Min	Gap	Min	
70th %ile Green (s)	15.0	15.0	10.0	30.0	15.0	
70th %ile Term Code	Min	Min	Min	Hold	Min	
50th %ile Green (s)	20.9	20.9	0.0	20.9	15.0	
50th %ile Term Code	Hold	Hold	Skip	Gap	Min	
30th %ile Green (s)	21.0	21.0	0.0	21.0	15.0	
30th %ile Term Code	Dwell	Dwell	Skip	Dwell	Min	
10th %ile Green (s)	30.0	30.0	0.0	30.0	0.0	
10th %ile Term Code	Dwell	Dwell	Skip	Dwell	Skip	
Stops (vph)	186	18	35	336	74	
Fuel Used(gal)	5	1	1	5	2	
CO Emissions (g/hr)	322	63	36	349	128	
NOx Emissions (g/hr)	63	12	7	68	25	
VOC Emissions (g/hr)	75	15	8	81	30	
Dilemma Vehicles (#)	21	0	0	36	0	
Queue Length 50th (ft)	26	0	9	123	21	
Queue Length 95th (ft)	75	26	35	203	66	
Internal Link Dist (ft)	630			240	896	
Turn Bay Length (ft)			100			
Base Capacity (vph)	2355	1097	407	1699	665	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.09	0.11	0.35	0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	47.9
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	11.9
Intersection LOS:	B
Intersection Capacity Utilization	50.6%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	56.6
70th %ile Actuated Cycle:	55.3
50th %ile Actuated Cycle:	46.2
30th %ile Actuated Cycle:	46.3
10th %ile Actuated Cycle:	35.3

Splits and Phases: 9: New York St & Lugonia Ave



Neighborhoods at Lugonia Village  
9: New York St & Lugonia Ave

Existing AM  
01/13/2023



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑	↓	↓
Traffic Volume (veh/h)	298	84	39	531	88	26
Future Volume (veh/h)	298	84	39	531	88	26
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1730	1786	1673	1772	1758	1660
Adj Flow Rate, veh/h	339	95	44	603	100	30
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	1	2	2	3	10
Cap, veh/h	1050	483	148	920	325	98
Arrive On Green	0.32	0.32	0.09	0.52	0.26	0.26
Sat Flow, veh/h	3373	1511	1594	1772	1243	373
Grp Volume(v), veh/h	339	95	44	603	131	0
Grp Sat Flow(s),veh/h/ln	1643	1511	1594	1772	1629	0
Q Serve(g_s), s	3.7	2.1	1.2	11.6	3.0	0.0
Cycle Q Clear(g_c), s	3.7	2.1	1.2	11.6	3.0	0.0
Prop In Lane		1.00	1.00		0.76	0.23
Lane Grp Cap(c), veh/h	1050	483	148	920	426	0
V/C Ratio(X)	0.32	0.20	0.30	0.66	0.31	0.00
Avail Cap(c_a), veh/h	2359	1085	407	1913	659	0
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	0.00
Uniform Delay (d), s/veh	12.1	11.6	19.9	8.2	13.9	0.0
Incr Delay (d2), s/veh	0.2	0.2	1.1	0.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.6	0.4	3.1	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	11.8	21.0	9.0	14.3	0.0
LnGrp LOS	B	B	C	A	B	A
Approach Vol, veh/h	434			647	131	
Approach Delay, s/veh	12.2			9.8	14.3	
Approach LOS	B			A	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	20.3		17.3		29.7
Change Period (Y+Rc), s	5.0	5.3		5.0		5.3
Max Green Setting (Gmax), s	12.0	33.7		19.0		50.7
Max Q Clear Time (g_c+I1), s	3.2	5.7		5.0		13.6
Green Ext Time (p_c), s	0.0	2.5		0.3		4.4
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			11.2			
HCM 6th LOS			B			
<b>Notes</b>						
User approved volume balancing among the lanes for turning movement.						



Neighborhoods at Lugonia Village  
10: Lugonia Ave & Karon St

Existing AM  
01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	298	534	3	5	36
Future Volume (vph)	26	298	534	3	5	36
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt			0.999		0.882	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1568	3226	1763	0	1547	0
Flt Permitted	0.950				0.994	
Satd. Flow (perm)	1568	3226	1763	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	30	339	607	3	6	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	339	610	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.9%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	298	534	3	5	36
Future Vol, veh/h	26	298	534	3	5	36
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	30	339	607	3	6	41

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	611	0	-	0	840 610
Stage 1	-	-	-	-	610 -
Stage 2	-	-	-	-	230 -
Critical Hdwy	4.145	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.2285	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	960	-	-	-	319 493
Stage 1	-	-	-	-	541 -
Stage 2	-	-	-	-	787 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	959	-	-	-	308 493
Mov Cap-2 Maneuver	-	-	-	-	308 -
Stage 1	-	-	-	-	524 -
Stage 2	-	-	-	-	786 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	959	-	-	-	459
HCM Lane V/C Ratio	0.031	-	-	-	0.102
HCM Control Delay (s)	8.9	-	-	-	13.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	0	0	22	0	3	0	6	23	0	6	0
Future Volume (vph)	0	0	0	22	0	3	0	6	23	0	6	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr <sub>t</sub>					0.983			0.892				
Fl <sub>t</sub> Protected					0.958							
Satd. Flow (prot)	0	1765	0	0	1678	0	0	1565	0	0	1782	0
Fl <sub>t</sub> Permitted					0.958							
Satd. Flow (perm)	0	1765	0	0	1678	0	0	1565	0	0	1782	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		326			965			1320			300	
Travel Time (s)		7.4			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	27	0	4	0	7	28	0	7	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	31	0	0	35	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	22	0	3	0	6	23	0	6	0
Future Vol, veh/h	0	0	0	22	0	3	0	6	23	0	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	0	0	27	0	4	0	7	28	0	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	1	0	0	-	59	1	75	57	-
Stage 1	-	-	-	-	-	-	-	1	-	56	56	-
Stage 2	-	-	-	-	-	-	-	58	-	19	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.23	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.327	3.509	4.009	-
Pot Cap-1 Maneuver	1618	-	-	1628	-	-	0	834	1081	917	836	0
Stage 1	-	-	-	-	-	-	0	897	-	959	850	0
Stage 2	-	-	-	-	-	-	0	849	-	1003	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1628	-	-	-	820	1081	876	822	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	820	-	876	822	-
Stage 1	-	-	-	-	-	-	-	897	-	959	836	-
Stage 2	-	-	-	-	-	-	-	835	-	969	897	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			6.4			8.7			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1014	1618	-	-	1628	-	-	822
HCM Lane V/C Ratio	0.034	-	-	-	0.016	-	-	0.009
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Neighborhoods at Lugonia Village  
12: Texas St & Pennsylvania Ave

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	25	10	15	131	25	49	5	182	44	42	252	6
Future Volume (vph)	25	10	15	131	25	49	5	182	44	42	252	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.959			0.967			0.974			0.997	
Flt Protected		0.976			0.969			0.999			0.993	
Satd. Flow (prot)	0	1614	0	0	1662	0	0	1724	0	0	1762	0
Flt Permitted		0.976			0.969			0.999			0.993	
Satd. Flow (perm)	0	1614	0	0	1662	0	0	1724	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	26	11	16	138	26	52	5	192	46	44	265	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	216	0	0	243	0	0	315	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.0%
ICU Level of Service	B
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	10	15	131	25	49	5	182	44	42	252	6
Future Vol, veh/h	25	10	15	131	25	49	5	182	44	42	252	6
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
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	26	11	16	138	26	52	5	192	46	44	265	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	11	10.6	12
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	50%	64%	14%
Vol Thru, %	79%	20%	12%	84%
Vol Right, %	19%	30%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	50	205	300
LT Vol	5	25	131	42
Through Vol	182	10	25	252
RT Vol	44	15	49	6
Lane Flow Rate	243	53	216	316
Geometry Grp	1	1	1	1
Degree of Util (X)	0.34	0.083	0.324	0.444
Departure Headway (Hd)	5.035	5.653	5.409	5.056
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	633	665	717
Service Time	3.045	3.696	3.443	3.065
HCM Lane V/C Ratio	0.339	0.084	0.325	0.441
HCM Control Delay	10.6	9.2	11	12
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.5	0.3	1.4	2.3

Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	223	45	191	422	25	45	174	94	23	295	72
Future Volume (vph)	35	223	45	191	422	25	45	174	94	23	295	72
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.992				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3211	0	1599	3315	0	0	1764	1443	0	1773	1500
Flt Permitted	0.950			0.950				0.785			0.965	
Satd. Flow (perm)	1599	3211	0	1599	3315	0	0	1399	1443	0	1717	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			9				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	242	49	208	459	27	49	189	102	25	321	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	291	0	208	486	0	0	238	102	0	346	78
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing AM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	Min	Min	Min
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	10.6		13.0	24.9		17.1	17.1	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.12	0.19		0.23	0.45		0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.21	0.46		0.56	0.33		0.55	0.19	0.19	0.66	0.66	0.14
Control Delay	30.8	22.5		27.1	12.8		22.6	2.8	2.8	24.2	24.2	1.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	22.5		27.1	12.8		22.6	2.8	2.8	24.2	24.2	1.4
LOS	C	C		C	B		C	A	A	C	C	A
Approach Delay		23.4			17.1		16.7				20.0	
Approach LOS		C			B		B				C	
90th %ile Green (s)	6.4	14.9		19.3	27.8		27.1	27.1	27.1	27.1	27.1	27.1
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.3		15.8	21.7		20.6	20.6	20.6	20.6	20.6	20.6
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	0.0	10.4		12.8	27.9		16.6	16.6	16.6	16.6	16.6	16.6
50th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	8.8		10.4	23.9		13.4	13.4	13.4	13.4	13.4	13.4
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.1		7.8	19.6		9.9	9.9	9.9	9.9	9.9	9.9
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	33	194		153	263		166	7	7	250	250	3
Fuel Used(gal)	1	5		3	5		4	1	1	7	7	1
CO Emissions (g/hr)	50	320		204	338		254	39	39	482	482	49
NOx Emissions (g/hr)	10	62		40	66		49	7	7	94	94	10
VOC Emissions (g/hr)	12	74		47	78		59	9	9	112	112	11
Dilemma Vehicles (#)	0	16		0	28		14	0	0	21	21	0
Queue Length 50th (ft)	11	39		58	40		62	0	0	94	94	0
Queue Length 95th (ft)	45	93		147	124		149	18	18	208	208	8
Internal Link Dist (ft)		345			444		591			1254	1254	
Turn Bay Length (ft)	105			100				50	50			50
Base Capacity (vph)	194	1676		585	2508		777	862	862	954	954	893





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.20	0.17		0.36	0.19			0.31	0.12		0.36	0.09

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	55.5
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	18.9
Intersection LOS:	B
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	75.4
70th %ile Actuated Cycle:	62.8
50th %ile Actuated Cycle:	53.9
30th %ile Actuated Cycle:	46.7
10th %ile Actuated Cycle:	38.9

Splits and Phases: 13: Texas St & Lugonia Ave



Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing AM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	223	45	191	422	25	45	174	94	23	295	72
Future Volume (veh/h)	35	223	45	191	422	25	45	174	94	23	295	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	38	242	49	208	459	27	49	189	102	25	321	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	61	386	77	252	836	49	72	223	689	63	475	712
Arrive On Green	0.04	0.14	0.14	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2754	548	1606	3232	190	4	471	1454	2	1002	1502
Grp Volume(v), veh/h	38	144	147	208	239	247	238	0	102	346	0	78
Grp Sat Flow(s),veh/h/ln	1606	1657	1645	1606	1683	1738	475	0	1454	1004	0	1502
Q Serve(g_s), s	1.4	5.0	5.2	7.7	7.5	7.6	0.4	0.0	2.4	0.4	0.0	1.8
Cycle Q Clear(g_c), s	1.4	5.0	5.2	7.7	7.5	7.6	29.2	0.0	2.4	29.2	0.0	1.8
Prop In Lane	1.00		0.33	1.00		0.11	0.21		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	61	232	230	252	436	450	296	0	689	538	0	712
V/C Ratio(X)	0.62	0.62	0.64	0.82	0.55	0.55	0.81	0.00	0.15	0.64	0.00	0.11
Avail Cap(c_a), veh/h	167	735	730	504	1100	1135	299	0	692	542	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	24.9	25.0	25.1	19.7	19.7	14.4	0.0	9.2	12.1	0.0	9.0
Incr Delay (d2), s/veh	9.7	2.7	2.9	6.7	1.1	1.1	14.7	0.0	0.1	2.6	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(50%),veh/ln	0.7	2.0	2.1	3.2	2.8	2.9	2.8	0.0	0.6	2.8	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	27.6	27.9	31.8	20.8	20.8	29.0	0.0	9.3	14.6	0.0	9.1
LnGrp LOS	D	C	C	C	C	C	C	A	A	B	A	A
Approach Vol, veh/h		329			694			340			424	
Approach Delay, s/veh		29.1			24.1			23.1			13.6	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	13.4		33.9	7.1	20.7		33.9				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.7	7.2		31.2	3.4	9.6		31.2				
Green Ext Time (p_c), s	0.4	1.5		0.0	0.0	3.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Appendix D: Existing Year 2022 PM Peak Hour Analysis Worksheets

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	580	70	125	230	129	40	61	269	144	256	125
Future Volume (vph)	102	580	70	125	230	129	40	61	269	144	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			121			75
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	105	598	72	129	237	133	41	63	277	148	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	598	72	129	237	133	41	63	277	148	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.3	21.0	21.0	12.3	25.8	25.8	7.4	10.1	24.9	14.4	19.2	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.25	
v/c Ratio	0.45	0.66	0.14	0.51	0.42	0.22	0.27	0.27	0.49	0.51	0.47	
Control Delay	42.2	30.4	0.6	42.8	27.9	4.4	45.5	38.0	14.9	41.3	24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.2	30.4	0.6	42.8	27.9	4.4	45.5	38.0	14.9	41.3	24.0	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.2			25.5			22.0			28.7	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.2	24.5	24.5	14.7	26.0	26.0	7.7	10.0	14.7	16.3	18.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
50th %ile Green (s)	11.0	21.3	21.3	12.2	22.5	22.5	7.7	8.5	12.2	13.4	14.2	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.0	17.2	17.2	9.9	18.1	18.1	0.0	7.1	9.9	10.8	22.6	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.0	22.8	22.8	0.0	0.0	7.0	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	471	0	106	170	11	38	51	105	121	238	
Fuel Used(gal)	2	11	1	2	4	1	1	2	7	4	8	
CO Emissions (g/hr)	159	800	45	166	247	63	99	141	470	249	532	
NOx Emissions (g/hr)	31	156	9	32	48	12	19	27	92	48	104	
VOC Emissions (g/hr)	37	185	10	39	57	15	23	33	109	58	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	47	131	0	57	92	0	18	28	53	65	73	
Queue Length 95th (ft)	124	252	0	147	214	32	65	77	142	168	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	399	1542	773	402	784	763	173	776	696	385	1854	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023

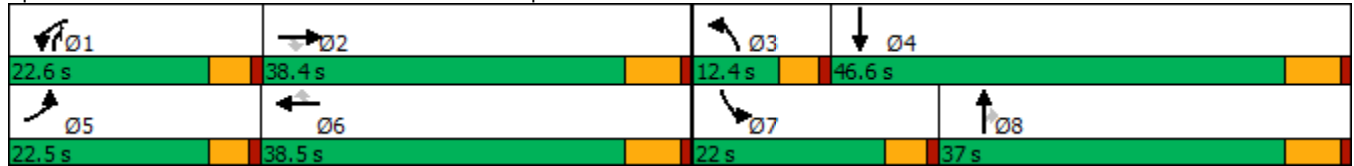


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.39	0.09	0.32	0.30	0.17	0.24	0.08	0.40	0.38	0.21	

Intersection Summary

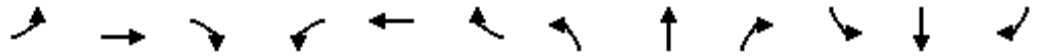
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	77.1
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	27.0
Intersection LOS:	C
Intersection Capacity Utilization	59.3%
ICU Level of Service	B
Analysis Period (min)	15
90th %ile Actuated Cycle:	110.4
70th %ile Actuated Cycle:	86.9
50th %ile Actuated Cycle:	76.8
30th %ile Actuated Cycle:	66.4
10th %ile Actuated Cycle:	44.8

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗	↗	↘	↗	↗	↘	↗↗	
Traffic Volume (veh/h)	102	580	70	125	230	129	40	61	269	144	256	125
Future Volume (veh/h)	102	580	70	125	230	129	40	61	269	144	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	598	72	129	237	133	41	63	277	148	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	151	840	375	175	454	391	62	363	472	211	662	314
Arrive On Green	0.09	0.25	0.25	0.11	0.26	0.26	0.04	0.20	0.20	0.13	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	598	72	129	237	133	41	63	277	148	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.5	11.5	2.7	5.5	8.3	5.1	1.8	2.1	11.0	6.3	6.6	6.9
Cycle Q Clear(g_c), s	4.5	11.5	2.7	5.5	8.3	5.1	1.8	2.1	11.0	6.3	6.6	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	151	840	375	175	454	391	62	363	472	211	504	473
V/C Ratio(X)	0.70	0.71	0.19	0.74	0.52	0.34	0.66	0.17	0.59	0.70	0.39	0.41
Avail Cap(c_a), veh/h	401	1542	688	403	788	679	173	776	823	387	966	907
HCM Platoon Ratio	1.00	1.00	1.00	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	31.0	24.2	20.9	30.5	22.2	21.0	33.5	23.2	20.4	29.3	19.7	19.8
Incr Delay (d2), s/veh	5.7	1.1	0.2	6.0	0.9	0.5	11.2	0.2	1.2	4.2	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(50%),veh/ln	1.9	4.4	0.9	2.3	3.3	1.7	0.9	0.8	3.7	2.6	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	25.4	21.2	36.5	23.1	21.5	44.7	23.4	21.6	33.5	20.2	20.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	C	C	C
Approach Vol, veh/h		775			499			381			541	
Approach Delay, s/veh		26.5			26.1			24.4			23.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	23.6	7.5	27.2	11.4	24.7	14.2	20.5				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	7.5	13.5	3.8	8.9	6.5	10.3	8.3	13.0				
Green Ext Time (p_c), s	0.2	4.2	0.0	2.6	0.2	1.8	0.2	1.2				

Intersection Summary

HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	481	119	23	320	159	54	374	37	184	12	110
Future Volume (vph)	393	481	119	23	320	159	54	374	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987				0.864
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198			8			113
Link Speed (mph)		30			45			35				30
Link Distance (ft)		720			275			1384				996
Travel Time (s)		16.4			4.2			27.0				22.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	405	496	123	24	330	164	56	386	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	496	123	24	330	164	56	424	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	41.9	41.9	10.3	23.7	23.7	10.5	18.4		16.4	28.4	
Actuated g/C Ratio	0.19	0.42	0.42	0.10	0.24	0.24	0.11	0.19		0.17	0.29	
v/c Ratio	0.76	0.66	0.17	0.15	0.79	0.32	0.34	0.68		0.73	0.25	
Control Delay	50.2	31.4	2.6	49.3	51.1	4.3	53.2	44.3		59.5	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.2	31.4	2.6	49.3	51.1	4.3	53.2	44.3		59.5	8.9	
LOS	D	C	A	D	D	A	D	D		E	A	
Approach Delay		35.3			36.2			45.4			39.4	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	25.6		18.8	34.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.2		18.8	29.6	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	50.3	50.3	0.0	25.0	25.0	10.0	18.8		18.8	27.6	
50th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Min	Gap		Max	Hold	
30th %ile Green (s)	17.1	42.4	42.4	0.0	20.6	20.6	10.0	15.7		15.2	20.9	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.1	32.1	0.0	14.5	14.5	0.0	11.8		10.8	27.3	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	348	369	6	22	284	10	48	358		159	22	
Fuel Used(gal)	8	8	1	1	9	1	2	14		5	1	
CO Emissions (g/hr)	569	546	53	44	597	77	140	1007		317	90	
NOx Emissions (g/hr)	111	106	10	9	116	15	27	196		62	17	
VOC Emissions (g/hr)	132	127	12	10	138	18	32	233		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	131	232	0	15	208	0	36	138		120	6	
Queue Length 95th (ft)	#221	#503	24	45	334	32	84	202		#247	52	
Internal Link Dist (ft)		640			195			1304			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	621	789	750	165	550	603	170	1006		307	642	

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023

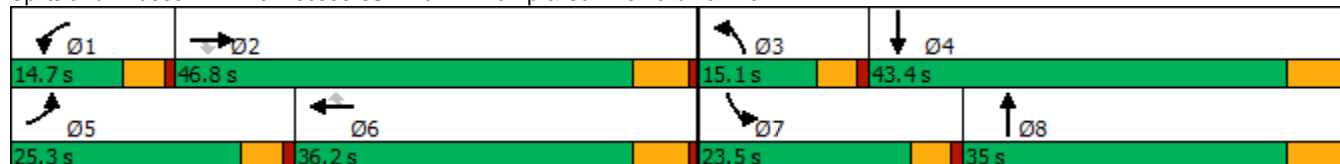


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.63	0.16	0.15	0.60	0.27	0.33	0.42		0.62	0.19	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	38.1
Intersection LOS:	D
Intersection Capacity Utilization	76.4%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	116.6
70th %ile Actuated Cycle:	112.2
50th %ile Actuated Cycle:	104.6
30th %ile Actuated Cycle:	90
10th %ile Actuated Cycle:	71.4
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing PM  
 01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↔	↔	↑	↔	↔	↔↔		↔	↔	
Traffic Volume (veh/h)	393	481	119	23	320	159	54	374	37	184	12	110
Future Volume (veh/h)	393	481	119	23	320	159	54	374	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	496	123	24	330	164	56	386	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	502	621	522	83	404	343	144	538	53	228	33	308
Arrive On Green	0.17	0.35	0.35	0.05	0.23	0.23	0.09	0.17	0.17	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3097	303	1581	144	1356
Grp Volume(v), veh/h	405	496	123	24	330	164	56	209	215	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1717	1581	0	1500
Q Serve(g_s), s	10.2	19.3	4.5	1.1	13.6	7.3	2.6	9.0	9.1	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.2	19.3	4.5	1.1	13.6	7.3	2.6	9.0	9.1	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.90
Lane Grp Cap(c), veh/h	502	621	522	83	404	343	144	292	298	228	0	341
V/C Ratio(X)	0.81	0.80	0.24	0.29	0.82	0.48	0.39	0.71	0.72	0.83	0.00	0.37
Avail Cap(c_a), veh/h	783	944	794	208	693	587	215	637	650	388	0	732
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00
Uniform Delay (d), s/veh	30.5	22.4	17.6	34.9	28.0	25.5	32.8	29.9	29.9	31.9	0.0	25.0
Incr Delay (d2), s/veh	3.5	2.9	0.2	1.9	4.1	1.0	1.7	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.0	1.5	0.4	5.7	2.5	1.0	3.7	3.8	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	25.3	17.8	36.8	32.0	26.6	34.5	33.1	33.2	39.5	0.0	25.6
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1024			518			480				315
Approach Delay, s/veh		27.8			30.5			33.3				34.0
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	32.8	11.7	23.4	17.9	23.6	15.8	19.3				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0				
Max Q Clear Time (g_c+I1), s	3.1	21.3	4.6	7.4	12.2	15.6	11.0	11.1				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.8	1.0	2.0	0.3	2.2				

Intersection Summary
























HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing PM  
01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	740	404	116	426	107	301	299	206	73	75	6
Future Volume (vph)	59	740	404	116	426	107	301	299	206	73	75	6
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			0.98
Frt			0.850		0.970				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1703	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1703	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			319		15				212			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	61	763	416	120	439	110	310	308	212	75	77	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	763	416	120	549	0	310	308	212	75	77	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.3	24.5	24.5	6.9	29.3		11.2	19.0	19.0	8.7	16.6	16.6
Actuated g/C Ratio	0.07	0.32	0.32	0.09	0.39		0.15	0.25	0.25	0.11	0.22	0.22
v/c Ratio	0.55	0.71	0.60	0.83	0.82		1.33	0.70	0.41	0.41	0.20	0.01
Control Delay	60.6	28.3	10.7	84.4	38.0		209.1	36.6	6.4	42.9	26.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	28.3	10.7	84.4	38.0		209.1	36.6	6.4	42.9	26.0	0.0
LOS	E	C	B	F	D		F	D	A	D	C	A
Approach Delay		24.0			46.3			93.3			33.0	
Approach LOS		C			D			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	23.6	23.6	10.4	23.5	23.5
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	20.1	20.1	9.2	18.8	18.8
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	15.8	15.8	7.6	12.9	12.9
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	0.0	14.3	14.3	6.5	25.3		10.5	10.0	10.0	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Max	Gap	Gap	Skip	Skip	Skip
Stops (vph)	50	610	99	83	394		196	252	25	65	56	0
Fuel Used(gal)	2	15	4	4	11		18	7	3	3	2	0
CO Emissions (g/hr)	109	1019	294	249	799		1223	512	186	178	159	8
NOx Emissions (g/hr)	21	198	57	48	156		238	100	36	35	31	2
VOC Emissions (g/hr)	25	236	68	58	185		284	119	43	41	37	2
Dilemma Vehicles (#)	0	44	0	0	30		0	15	0	0	3	0
Queue Length 50th (ft)	31	176	35	62	258		~225	144	0	36	32	0
Queue Length 95th (ft)	#100	274	137	#184	#523		#420	233	49	84	65	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	110	1269	755	144	689		233	670	682	230	661	636

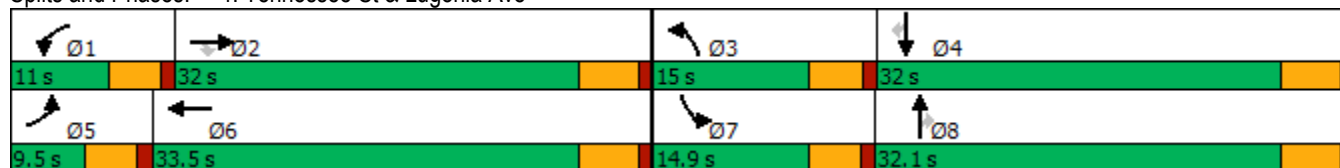


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.60	0.55	0.83	0.80		1.33	0.46	0.31	0.33	0.12	0.01

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	75.9
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.33
Intersection Signal Delay:	49.5
Intersection LOS:	D
Intersection Capacity Utilization	75.1%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	86.5
50th %ile Actuated Cycle:	81.8
30th %ile Actuated Cycle:	75.9
10th %ile Actuated Cycle:	45.3
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 4: Tennessee St & Lugonia Ave



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing PM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	740	404	116	426	107	301	299	206	73	75	6
Future Volume (veh/h)	59	740	404	116	426	107	301	299	206	73	75	6
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		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	61	763	416	120	439	110	310	308	212	75	77	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	80	1155	511	148	527	132	242	410	340	93	242	204
Arrive On Green	0.05	0.34	0.34	0.09	0.39	0.39	0.15	0.23	0.23	0.06	0.14	0.14
Sat Flow, veh/h	1594	3367	1491	1594	1366	342	1594	1772	1472	1594	1758	1485
Grp Volume(v), veh/h	61	763	416	120	0	549	310	308	212	75	77	6
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1709	1594	1772	1472	1594	1758	1485
Q Serve(g_s), s	2.6	13.3	17.6	5.1	0.0	20.1	10.5	11.2	8.9	3.2	2.7	0.2
Cycle Q Clear(g_c), s	2.6	13.3	17.6	5.1	0.0	20.1	10.5	11.2	8.9	3.2	2.7	0.2
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	1155	511	148	0	659	242	410	340	93	242	204
V/C Ratio(X)	0.77	0.66	0.81	0.81	0.00	0.83	1.28	0.75	0.62	0.81	0.32	0.03
Avail Cap(c_a), veh/h	115	1316	583	150	0	705	242	695	577	240	687	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	19.3	20.7	30.8	0.0	19.2	29.3	24.7	23.8	32.2	26.9	25.8
Incr Delay (d2), s/veh	16.7	1.0	7.7	27.5	0.0	8.1	153.7	2.8	1.9	15.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.7	6.6	3.0	0.0	8.5	14.1	4.7	3.1	1.6	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	20.3	28.4	58.3	0.0	27.3	183.0	27.5	25.7	47.3	27.6	25.9
LnGrp LOS	D	C	C	E	A	C	F	C	C	D	C	C
Approach Vol, veh/h		1240			669			830				158
Approach Delay, s/veh		24.5			32.8			85.1				36.9
Approach LOS		C			C			F				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	28.7	15.0	14.5	7.9	31.6	8.5	21.0				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1				
Max Q Clear Time (g_c+I1), s	7.1	19.6	12.5	4.7	4.6	22.1	5.2	13.2				
Green Ext Time (p_c), s	0.0	3.8	0.0	0.3	0.0	1.9	0.1	2.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			44.4									
HCM 6th LOS			D									

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↕	
Traffic Volume (vph)	0	0	0	119	3	214	223	680	0	0	518	105
Future Volume (vph)	0	0	0	119	3	214	223	680	0	0	518	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.904							0.975
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2959	0	1568	3353	0	0	3269	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2959	0	1568	3353	0	0	3269	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					225						29	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1063			612			817	
Travel Time (s)		19.4			24.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	125	3	225	235	716	0	0	545	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	353	0	235	716	0	0	656	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing PM  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				24.0	24.0		30.0	66.0			36.0	
Total Split (%)				26.7%	26.7%		33.3%	73.3%			40.0%	
Maximum Green (s)				18.5	18.5		25.0	60.5			30.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					9.9		18.6	69.1			45.5	
Actuated g/C Ratio					0.11		0.21	0.77			0.51	
v/c Ratio					0.67		0.73	0.28			0.39	
Control Delay					20.4		43.9	0.9			15.7	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					20.4		43.9	0.9			15.7	
LOS					C		D	A			B	
Approach Delay					20.4			11.5			15.7	
Approach LOS					C			B			B	
90th %ile Green (s)				15.3	15.3		25.3	63.7			33.4	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				11.5	11.5		21.5	67.5			41.0	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				9.5	9.5		18.7	69.5			45.8	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				7.6	7.6		15.8	71.4			50.6	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				5.5	5.5		11.7	73.5			56.8	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					119		176	50			367	
Fuel Used(gal)					5		4	4			11	
CO Emissions (g/hr)					337		301	245			797	
NOx Emissions (g/hr)					66		59	48			155	
VOC Emissions (g/hr)					78		70	57			185	
Dilemma Vehicles (#)					0		0	19			35	
Queue Length 50th (ft)					36		119	12			108	
Queue Length 95th (ft)					74		m90	m3			197	
Internal Link Dist (ft)		775			983			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					786		436	2575			1667	



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing PM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (veh/h)	0	0	0	119	3	214	223	680	0	0	518	105
Future Volume (veh/h)	0	0	0	119	3	214	223	680	0	0	518	105
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	225	235	716	0	0	545	111
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				289	7	263	265	2365	0	0	1336	271
Arrive On Green				0.18	0.18	0.18	0.34	1.00	0.00	0.00	0.48	0.48
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2876	566
Grp Volume(v), veh/h				128	0	225	235	716	0	0	328	328
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1670
Q Serve(g_s), s				6.1	0.0	13.1	12.7	0.0	0.0	0.0	11.4	11.4
Cycle Q Clear(g_c), s				6.1	0.0	13.1	12.7	0.0	0.0	0.0	11.4	11.4
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.34
Lane Grp Cap(c), veh/h				296	0	263	265	2365	0	0	807	801
V/C Ratio(X)				0.43	0.00	0.86	0.89	0.30	0.00	0.00	0.41	0.41
Avail Cap(c_a), veh/h				347	0	309	439	2365	0	0	807	801
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				33.1	0.0	36.0	29.1	0.0	0.0	0.0	15.2	15.2
Incr Delay (d2), s/veh				1.0	0.0	18.2	7.0	0.2	0.0	0.0	1.5	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.0	4.3	0.1	0.0	0.0	4.4	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				34.1	0.0	54.2	36.1	0.2	0.0	0.0	16.7	16.7
LnGrp LOS				C	A	D	D	A	A	A	B	B
Approach Vol, veh/h					353			951			656	
Approach Delay, s/veh					46.9			9.1			16.7	
Approach LOS					D			A			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	48.6		21.3		68.7						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	13.4		15.1		2.0						
Green Ext Time (p_c), s	0.5	3.7		0.7		5.7						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↕	↕↕	
Traffic Volume (vph)	283	348	354	0	0	0	0	620	149	228	409	0
Future Volume (vph)	283	348	354	0	0	0	0	620	149	228	409	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Flt		0.946						0.971				
Flt Protected		0.986								0.950		
Satd. Flow (prot)	0	3119	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.986								0.950		
Satd. Flow (perm)	0	3119	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	366	373	0	0	0	0	653	157	240	431	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1037	0	0	0	0	0	810	0	240	431	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		30.1						28.4		15.5	48.9	
Actuated g/C Ratio		0.33						0.32		0.17	0.54	
v/c Ratio		0.92						0.77		0.88	0.24	
Control Delay		39.7						32.6		59.6	16.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		39.7						32.6		59.6	16.1	
LOS		D						C		E	B	
Approach Delay		39.7						32.6			31.7	
Approach LOS		D						C			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	29.0	29.0						31.5		13.5	50.0	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		772						652		202	304	
Fuel Used(gal)		22						13		5	5	
CO Emissions (g/hr)		1507						927		370	380	
NOx Emissions (g/hr)		293						180		72	74	
VOC Emissions (g/hr)		349						215		86	88	
Dilemma Vehicles (#)		0						43		0	24	
Queue Length 50th (ft)		264						210		142	111	
Queue Length 95th (ft)		#401						280		#267	78	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1130						1075		281	1830	

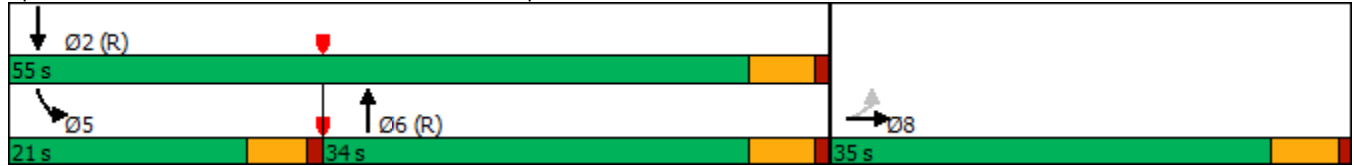


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.92						0.75		0.85	0.24	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 35.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 81.4%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Tennessee St & I-10 EB Ramps



Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing PM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↕	↕↕	
Traffic Volume (veh/h)	283	348	354	0	0	0	0	620	149	228	409	0
Future Volume (veh/h)	283	348	354	0	0	0	0	620	149	228	409	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	298	366	373				0	653	157	240	431	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	295	372	406				0	869	209	274	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	901	1135	1239				0	2781	647	1594	3428	0
Grp Volume(v), veh/h	571	0	466				0	408	402	240	431	0
Grp Sat Flow(s),veh/h/ln	1727	0	1549				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	26.0				0.0	19.5	19.5	13.5	9.9	0.0
Cycle Q Clear(g_c), s	29.5	0.0	26.0				0.0	19.5	19.5	13.5	9.9	0.0
Prop In Lane	0.52		0.80				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	566	0	508				0	543	534	274	1837	0
V/C Ratio(X)	1.01	0.00	0.92				0.00	0.75	0.75	0.88	0.23	0.00
Avail Cap(c_a), veh/h	566	0	508				0	543	534	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.1				0.0	27.2	27.3	41.5	20.6	0.0
Incr Delay (d2), s/veh	40.0	0.0	21.8				0.0	9.2	9.4	23.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	0.0	12.3				0.0	8.8	8.7	7.5	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	0.0	50.9				0.0	36.5	36.7	64.8	20.9	0.0
LnGrp LOS	F	A	D				A	D	D	E	C	A
Approach Vol, veh/h		1037						810			671	
Approach Delay, s/veh		61.5						36.6			36.6	
Approach LOS		E						D			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			20.5	34.5		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		11.9			15.5	21.5		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.8		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			46.9									
HCM 6th LOS			D									

Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing PM  
01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↖↗		↘↘	↙
Traffic Volume (vph)	62	714	444	289	489	129
Future Volume (vph)	62	714	444	289	489	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			301			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	744	463	301	509	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	744	764	0	509	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing PM  
01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	19.0					
Pedestrian Calls (#/hr)	6					
Act Effct Green (s)	4.5	20.2	15.6		12.0	12.0
Actuated g/C Ratio	0.10	0.46	0.35		0.27	0.27
v/c Ratio	0.40	0.48	0.58		0.65	0.26
Control Delay	34.3	8.8	9.2		21.8	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.3	8.8	9.2		21.8	5.9
LOS	C	A	A		C	A
Approach Delay	10.9		9.2		18.5	
Approach LOS	B		A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	25.5	16.5		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.4	14.4		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	12.7	12.7		10.5	10.5
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.6	9.6		8.6	8.6
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	52	408	321		379	25
Fuel Used(gal)	2	18	9		14	3
CO Emissions (g/hr)	141	1235	615		1002	196
NOx Emissions (g/hr)	27	240	120		195	38
VOC Emissions (g/hr)	33	286	143		232	45
Dilemma Vehicles (#)	0	61	67		0	0
Queue Length 50th (ft)	18	64	54		62	0
Queue Length 95th (ft)	#73	93	93		#157	36
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	161	2727	2148		925	571



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.40	0.27	0.36		0.55	0.23

Intersection Summary

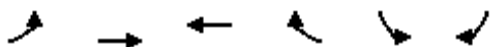
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	44.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization	56.4%
ICU Level of Service	B
Analysis Period (min)	15
90th %ile Actuated Cycle:	59.3
70th %ile Actuated Cycle:	49.8
50th %ile Actuated Cycle:	47.7
30th %ile Actuated Cycle:	34.3
10th %ile Actuated Cycle:	29.3
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing PM  
01/13/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	714	444	289	489	129
Future Volume (veh/h)	62	714	444	289	489	129
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	744	462	301	509	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1707	681	442	679	351
Arrive On Green	0.05	0.51	0.35	0.35	0.23	0.23
Sat Flow, veh/h	1594	3455	2046	1269	2910	1502
Grp Volume(v), veh/h	65	744	397	366	509	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1544	1455	1502
Q Serve(g_s), s	1.7	6.0	8.6	8.7	7.0	3.2
Cycle Q Clear(g_c), s	1.7	6.0	8.6	8.7	7.0	3.2
Prop In Lane	1.00			0.82	1.00	1.00
Lane Grp Cap(c), veh/h	75	1707	586	537	679	351
V/C Ratio(X)	0.87	0.44	0.68	0.68	0.75	0.38
Avail Cap(c_a), veh/h	156	2808	1050	963	898	463
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	20.3	6.7	11.9	11.9	15.2	13.8
Incr Delay (d2), s/veh	24.2	0.2	1.4	1.5	2.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.2	2.5	2.4	2.1	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.4	6.8	13.3	13.5	17.7	14.5
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		809	763		643	
Approach Delay, s/veh		9.9	13.4		17.1	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.0		14.8	6.8	21.2
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.0		9.0	3.7	10.7
Green Ext Time (p_c), s		5.2		1.0	0.0	4.2
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			13.2			
HCM 6th LOS			B			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑	↓	
Traffic Volume (vph)	952	162	40	503	169	57
Future Volume (vph)	952	162	40	503	169	57
Ideal Flow (vphpl)	1800	1800	1700	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97				
Frt		0.850			0.966	
Flt Protected			0.950		0.964	
Satd. Flow (prot)	3353	1485	1568	1765	1643	0
Flt Permitted			0.950		0.964	
Satd. Flow (perm)	3353	1448	1568	1765	1643	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		178			20	
Link Speed (mph)	35			35	40	
Link Distance (ft)	710			320	976	
Travel Time (s)	13.8			6.2	16.6	
Confl. Peds. (#/hr)		2				
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1046	178	44	553	186	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1046	178	44	553	249	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.07	1.07	1.15	1.07	1.07	1.07
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	2		1	6	4	
Permitted Phases		2				
Detector Phase	2	2	1	6	4	
Switch Phase						



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	15.0	15.0	10.0	15.0	15.0	
Minimum Split (s)	23.3	23.3	15.0	23.3	23.0	
Total Split (s)	41.0	41.0	15.0	56.0	24.0	
Total Split (%)	51.3%	51.3%	18.8%	70.0%	30.0%	
Maximum Green (s)	35.7	35.7	10.0	50.7	19.0	
Yellow Time (s)	4.3	4.3	4.0	4.3	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	5.0	5.3	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min	None	Min	None	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	8.0	8.0				
Pedestrian Calls (#/hr)	2	2				
Act Effct Green (s)	27.9	27.9	10.8	35.3	17.5	
Actuated g/C Ratio	0.44	0.44	0.17	0.55	0.27	
v/c Ratio	0.72	0.24	0.17	0.57	0.54	
Control Delay	18.9	3.4	31.8	10.9	27.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	3.4	31.8	10.9	27.4	
LOS	B	A	C	B	C	
Approach Delay	16.7			12.5	27.4	
Approach LOS	B			B	C	
90th %ile Green (s)	35.7	35.7	10.0	50.7	19.0	
90th %ile Term Code	Max	Max	Max	Hold	Max	
70th %ile Green (s)	35.7	35.7	10.0	50.7	19.0	
70th %ile Term Code	Max	Max	Max	Hold	Max	
50th %ile Green (s)	31.3	31.3	10.0	46.3	15.4	
50th %ile Term Code	Gap	Gap	Max	Hold	Gap	
30th %ile Green (s)	20.2	20.2	0.0	20.2	15.0	
30th %ile Term Code	Gap	Gap	Skip	Hold	Min	
10th %ile Green (s)	17.3	17.3	0.0	17.3	15.0	
10th %ile Term Code	Dwell	Dwell	Skip	Dwell	Min	
Stops (vph)	709	17	35	270	170	
Fuel Used(gal)	17	2	1	4	4	
CO Emissions (g/hr)	1173	109	43	301	310	
NOx Emissions (g/hr)	228	21	8	59	60	
VOC Emissions (g/hr)	272	25	10	70	72	
Dilemma Vehicles (#)	67	0	0	30	0	
Queue Length 50th (ft)	193	0	18	110	94	
Queue Length 95th (ft)	283	33	50	202	178	
Internal Link Dist (ft)	630			240	896	
Turn Bay Length (ft)			100			
Base Capacity (vph)	2019	942	264	1402	540	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.19	0.17	0.39	0.46	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	64
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	16.7
Intersection LOS:	B
Intersection Capacity Utilization	59.3%
ICU Level of Service	B
Analysis Period (min)	15
90th %ile Actuated Cycle:	80
70th %ile Actuated Cycle:	80
50th %ile Actuated Cycle:	72
30th %ile Actuated Cycle:	45.5
10th %ile Actuated Cycle:	42.6

Splits and Phases: 9: New York St & Lugonia Ave



Neighborhoods at Lugonia Village  
9: New York St & Lugonia Ave

Existing PM  
01/13/2023



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑	↓	↓
Traffic Volume (veh/h)	952	162	40	503	169	57
Future Volume (veh/h)	952	162	40	503	169	57
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1772	1758	1660	1772	1772	1772
Adj Flow Rate, veh/h	1046	178	44	553	186	63
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	3	2	2	2
Cap, veh/h	1413	624	136	1042	296	100
Arrive On Green	0.42	0.42	0.09	0.59	0.24	0.24
Sat Flow, veh/h	3455	1486	1581	1772	1218	412
Grp Volume(v), veh/h	1046	178	44	553	250	0
Grp Sat Flow(s),veh/h/ln	1683	1486	1581	1772	1637	0
Q Serve(g_s), s	15.9	4.8	1.6	11.4	8.3	0.0
Cycle Q Clear(g_c), s	15.9	4.8	1.6	11.4	8.3	0.0
Prop In Lane		1.00	1.00		0.74	0.25
Lane Grp Cap(c), veh/h	1413	624	136	1042	397	0
V/C Ratio(X)	0.74	0.29	0.32	0.53	0.63	0.00
Avail Cap(c_a), veh/h	1975	872	260	1476	511	0
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	0.00
Uniform Delay (d), s/veh	14.9	11.6	26.1	7.5	20.6	0.0
Incr Delay (d2), s/veh	0.9	0.2	1.4	0.4	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	1.4	0.6	3.2	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	11.9	27.5	7.9	22.2	0.0
LnGrp LOS	B	B	C	A	C	A
Approach Vol, veh/h	1224			597	250	
Approach Delay, s/veh	15.3			9.4	22.2	
Approach LOS	B			A	C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	30.8		19.8		41.1
Change Period (Y+Rc), s	5.0	5.3		5.0		5.3
Max Green Setting (Gmax), s	10.0	35.7		19.0		50.7
Max Q Clear Time (g_c+I1), s	3.6	17.9		10.3		13.4
Green Ext Time (p_c), s	0.0	7.6		0.5		3.9
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			14.4			
HCM 6th LOS			B			

Neighborhoods at Lugonia Village  
 10: Lugonia Ave & Karon St

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	927	517	8	3	26
Future Volume (vph)	82	927	517	8	3	26
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt			0.998		0.878	
Flt Protected	0.950				0.995	
Satd. Flow (prot)	1583	3353	1761	0	1542	0
Flt Permitted	0.950				0.995	
Satd. Flow (perm)	1583	3353	1761	0	1542	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	88	997	556	9	3	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	997	565	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.6%
ICU Level of Service	A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	927	517	8	3	26
Future Vol, veh/h	82	927	517	8	3	26
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	997	556	9	3	28

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	566	0	-	0	1237 562
Stage 1	-	-	-	-	562 -
Stage 2	-	-	-	-	675 -
Critical Hdwy	4.13	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.219	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	1004	-	-	-	181 526
Stage 1	-	-	-	-	570 -
Stage 2	-	-	-	-	468 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1003	-	-	-	165 525
Mov Cap-2 Maneuver	-	-	-	-	165 -
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	468 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1003	-	-	-	428
HCM Lane V/C Ratio	0.088	-	-	-	0.073
HCM Control Delay (s)	8.9	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.2

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	0	0	21	0	2	0	14	52	2	7	0
Future Volume (vph)	0	0	0	21	0	2	0	14	52	2	7	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt					0.986			0.893				
Flt Protected					0.957						0.988	
Satd. Flow (prot)	0	1765	0	0	1682	0	0	1591	0	0	1761	0
Flt Permitted					0.957						0.988	
Satd. Flow (perm)	0	1765	0	0	1682	0	0	1591	0	0	1761	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		338			965			1320			300	
Travel Time (s)		7.7			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	27	0	3	0	18	68	3	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	30	0	0	86	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	21	0	2	0	14	52	2	7	0
Future Vol, veh/h	0	0	0	21	0	2	0	14	52	2	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	0	0	27	0	3	0	18	68	3	9	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	1	0	0	-	58	1	100	57	-
Stage 1	-	-	-	-	-	-	-	1	-	56	56	-
Stage 2	-	-	-	-	-	-	-	57	-	44	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.21	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.309	3.509	4.009	-
Pot Cap-1 Maneuver	1619	-	-	1628	-	-	0	835	1087	884	836	0
Stage 1	-	-	-	-	-	-	0	897	-	959	850	0
Stage 2	-	-	-	-	-	-	0	849	-	973	897	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1619	-	-	1628	-	-	-	821	1087	804	822	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	821	-	804	822	-
Stage 1	-	-	-	-	-	-	-	897	-	959	836	-
Stage 2	-	-	-	-	-	-	-	835	-	894	897	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			6.6			8.9			9.5		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1017	1619	-	-	1628	-	-	818
HCM Lane V/C Ratio	0.084	-	-	-	0.017	-	-	0.014
HCM Control Delay (s)	8.9	0	-	-	7.2	0	-	9.5
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Neighborhoods at Lugonia Village  
12: Texas St & Pennsylvania Ave

Existing PM  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	16	39	11	68	16	24	7	265	89	26	183	16
Future Volume (vph)	16	39	11	68	16	24	7	265	89	26	183	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr <sub>t</sub>		0.977			0.970			0.967			0.990	
Fl <sub>t</sub> Protected		0.988			0.969			0.999			0.994	
Satd. Flow (prot)	0	1689	0	0	1675	0	0	1720	0	0	1754	0
Fl <sub>t</sub> Permitted		0.988			0.969			0.999			0.994	
Satd. Flow (perm)	0	1689	0	0	1675	0	0	1720	0	0	1754	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	41	12	72	17	25	7	279	94	27	193	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	114	0	0	380	0	0	237	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	39	11	68	16	24	7	265	89	26	183	16
Future Vol, veh/h	16	39	11	68	16	24	7	265	89	26	183	16
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
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	17	41	12	72	17	25	7	279	94	27	193	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	9.7	12.1	10.2
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	24%	63%	12%
Vol Thru, %	73%	59%	15%	81%
Vol Right, %	25%	17%	22%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	66	108	225
LT Vol	7	16	68	26
Through Vol	265	39	16	183
RT Vol	89	11	24	16
Lane Flow Rate	380	69	114	237
Geometry Grp	1	1	1	1
Degree of Util (X)	0.489	0.107	0.175	0.318
Departure Headway (Hd)	4.632	5.567	5.527	4.829
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	647	653	737
Service Time	2.707	3.573	3.527	2.913
HCM Lane V/C Ratio	0.493	0.107	0.175	0.322
HCM Control Delay	12.1	9.2	9.7	10.2
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.7	0.4	0.6	1.4

Neighborhoods at Lugonia Village  
 13: Lugonia Ave & Texas St

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	769	93	86	385	12	105	259	143	18	222	33
Future Volume (vph)	68	769	93	86	385	12	105	259	143	18	222	33
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.995				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3337	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.781			0.959	
Satd. Flow (perm)	1599	3332	0	1583	3337	0	0	1392	1515	0	1709	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	72	809	98	91	405	13	111	273	151	19	234	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	907	0	91	418	0	0	384	151	0	253	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
 13: Lugonia Ave & Texas St

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.7	26.2		8.9	26.1		26.1	26.1		26.1	26.1	26.1
Actuated g/C Ratio	0.12	0.36		0.12	0.36		0.36	0.36		0.36	0.36	0.36
v/c Ratio	0.38	0.75		0.47	0.35		0.77	0.25		0.41	0.06	0.06
Control Delay	41.8	26.5		45.3	20.0		34.4	11.3		21.9	0.7	0.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	41.8	26.5		45.3	20.0		34.4	11.3		21.9	0.7	0.7
LOS	D	C		D	B		C	B		C	A	A
Approach Delay		27.6			24.5		27.9				19.3	
Approach LOS		C			C		C				B	
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.1	28.9		9.3	29.1		29.0	29.0	29.0	29.0	29.0	29.0
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.4	22.8		8.1	23.5		21.7	21.7	21.7	21.7	21.7	21.7
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.6		0.0	13.6		12.4	12.4	12.4	12.4	12.4	12.4
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	60	691		75	262		298	48		163	1	1
Fuel Used(gal)	2	16		2	5		7	1		5	0	0
CO Emissions (g/hr)	105	1112		118	356		500	102		338	22	22
NOx Emissions (g/hr)	21	216		23	69		97	20		66	4	4
VOC Emissions (g/hr)	24	258		27	82		116	24		78	5	5
Dilemma Vehicles (#)	0	51		0	19		21	0		12	0	0
Queue Length 50th (ft)	35	207		44	80		171	25		96	0	0
Queue Length 95th (ft)	81	304		#107	130		294	68		166	3	3
Internal Link Dist (ft)		345			444		591			1254		
Turn Bay Length (ft)	105			100				50				50
Base Capacity (vph)	248	1681		228	1642		742	844		911	844	844

Neighborhoods at Lugonia Village  
 13: Lugonia Ave & Texas St

Existing PM  
 01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.29	0.54		0.40	0.25			0.52	0.18		0.28	0.04

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	72.7
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	25.9
Intersection LOS:	C
Intersection Capacity Utilization:	80.5%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	90
50th %ile Actuated Cycle:	81.3
30th %ile Actuated Cycle:	66.7
10th %ile Actuated Cycle:	35.4
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 13: Lugonia Ave & Texas St





Neighborhoods at Lugonia Village  
13: Lugonia Ave & Texas St

Existing PM  
01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↖	↗
Traffic Volume (veh/h)	68	769	93	86	385	12	105	259	143	18	222	33
Future Volume (veh/h)	68	769	93	86	385	12	105	259	143	18	222	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	72	809	98	91	405	13	111	273	151	19	234	35
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	2	2	1	1	1	1	1	1	1
Cap, veh/h	90	982	119	113	1124	36	58	98	651	49	407	651
Arrive On Green	0.06	0.32	0.32	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3047	369	1594	3329	107	0	228	1514	0	946	1514
Grp Volume(v), veh/h	72	450	457	91	204	214	384	0	151	253	0	35
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1753	228	0	1514	946	0	1514
Q Serve(g_s), s	3.5	19.5	19.5	4.5	7.3	7.3	0.0	0.0	5.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s	3.5	19.5	19.5	4.5	7.3	7.3	34.3	0.0	5.0	34.3	0.0	1.1
Prop In Lane	1.00		0.21	1.00		0.06	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	90	547	554	113	568	592	156	0	651	455	0	651
V/C Ratio(X)	0.80	0.82	0.82	0.80	0.36	0.36	2.46	0.00	0.23	0.56	0.00	0.05
Avail Cap(c_a), veh/h	201	687	696	186	667	694	156	0	651	455	0	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	24.9	24.9	36.5	19.9	19.9	20.0	0.0	14.4	17.3	0.0	13.3
Incr Delay (d2), s/veh	15.2	6.5	6.5	12.4	0.4	0.4	674.9	0.0	0.2	1.5	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(50%),veh/ln	1.7	8.3	8.4	2.1	2.8	2.9	30.9	0.0	1.6	3.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	31.5	31.4	48.9	20.3	20.3	694.9	0.0	14.6	18.8	0.0	13.3
LnGrp LOS	D	C	C	D	C	C	F	A	B	B	A	B
Approach Vol, veh/h		979			509			535			288	
Approach Delay, s/veh		33.0			25.4			502.9			18.1	
Approach LOS		C			C			F			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.4		39.0	9.1	31.6		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.5		36.3	5.5	9.3		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	138.2
HCM 6th LOS	F

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# **Appendix E: Existing Year With Project (Scenario A) AM Peak Hour Analysis Worksheets**

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	273	44	65	314	244	29	4	35	195	175	150
Future Volume (vph)	59	273	44	65	314	244	29	4	35	195	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			256			113			167
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	66	303	49	72	349	271	32	4	39	217	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	303	49	72	349	271	32	4	39	217	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.4	20.4	9.2	20.6	20.6	6.5	6.4	10.9	18.6	15.6	
Actuated g/C Ratio	0.14	0.32	0.32	0.15	0.33	0.33	0.10	0.10	0.17	0.29	0.25	
v/c Ratio	0.30	0.29	0.09	0.31	0.64	0.41	0.20	0.03	0.11	0.47	0.41	
Control Delay	34.1	18.4	0.3	33.9	26.0	5.5	37.6	35.8	0.7	28.1	15.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	18.4	0.3	33.9	26.0	5.5	37.6	35.8	0.7	28.1	15.5	
LOS	C	B	A	C	C	A	D	D	A	C	B	
Approach Delay		18.8			18.8			18.3			20.2	
Approach LOS		B			B			B			C	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	24.9	24.9	10.3	25.2	25.2	6.0	0.0	10.3	24.3	12.3	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Max	Skip	Gap	Hold	Gap	
50th %ile Green (s)	8.6	20.2	20.2	8.8	20.4	20.4	0.0	0.0	8.8	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	16.1	16.1	7.4	16.3	16.3	0.0	0.0	7.4	16.7	15.4	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.5	10.5	0.0	10.5	10.5	0.0	0.0	0.0	12.8	11.5	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	180	0	56	242	32	29	7	0	145	140	
Fuel Used(gal)	1	4	0	1	5	2	1	0	1	4	6	
CO Emissions (g/hr)	86	314	28	79	333	127	69	11	47	293	390	
NOx Emissions (g/hr)	17	61	5	15	65	25	13	2	9	57	76	
VOC Emissions (g/hr)	20	73	6	18	77	30	16	3	11	68	90	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	23	43	0	25	108	4	11	1	0	67	30	
Queue Length 95th (ft)	74	95	0	78	247	56	47	13	0	#216	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	487	1829	892	496	962	959	165	839	581	511	2204	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023

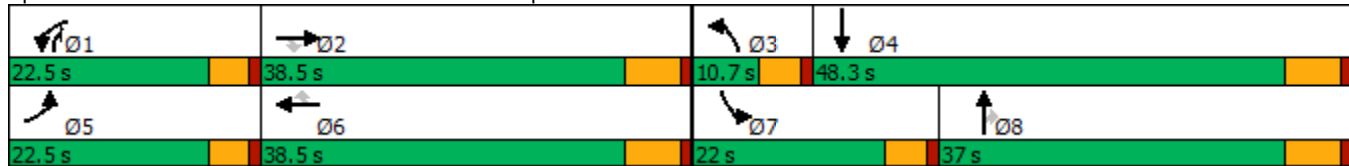


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.17	0.05	0.15	0.36	0.28	0.19	0.00	0.07	0.42	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	63.2
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	19.2
Intersection LOS:	B
Intersection Capacity Utilization:	55.7%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	74.9
50th %ile Actuated Cycle:	61.7
30th %ile Actuated Cycle:	55.6
10th %ile Actuated Cycle:	34
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	273	44	65	314	244	29	4	35	195	175	150
Future Volume (veh/h)	59	273	44	65	314	244	29	4	35	195	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	303	49	72	349	271	32	4	39	217	194	167
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, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	138	891	401	141	469	411	55	138	263	272	394	321
Arrive On Green	0.09	0.28	0.28	0.09	0.28	0.28	0.03	0.09	0.09	0.17	0.22	0.22
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	303	49	72	349	271	32	4	39	217	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.2	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Cycle Q Clear(g_c), s	2.3	4.2	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	138	891	401	141	469	411	55	138	263	272	377	339
V/C Ratio(X)	0.48	0.34	0.12	0.51	0.74	0.66	0.58	0.03	0.15	0.80	0.49	0.52
Avail Cap(c_a), veh/h	492	1853	833	500	975	854	167	854	946	486	1256	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.4	15.4	24.7	18.7	18.2	27.0	23.6	19.8	22.6	19.2	19.3
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.9	2.4	1.8	9.3	0.1	0.3	5.3	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.4	1.0	4.0	3.0	0.5	0.0	0.4	3.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	16.6	15.5	27.6	21.1	20.0	36.2	23.7	20.0	27.9	20.2	20.6
LnGrp LOS	C	B	B	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		418			692			75			578	
Approach Delay, s/veh		18.2			21.3			27.1			23.2	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	21.6	6.7	18.7	9.7	21.6	14.4	11.0				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	4.4	6.2	3.1	7.8	4.3	12.6	9.4	3.3				
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1				

Intersection Summary

HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	103	47	506	274	34	277	51	126	17	83
Future Volume (vph)	112	288	103	47	506	274	34	277	51	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.977				0.876
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3135	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3135	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			288			16			97
Link Speed (mph)		30			45			35				30
Link Distance (ft)		720			275			1384				978
Travel Time (s)		16.4			4.2			27.0				22.2
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	130	335	120	55	588	319	40	322	59	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	120	55	588	319	40	381	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.3	43.3	10.4	39.8	39.8	10.2	18.4		13.4	28.5	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.18		0.13	0.28	
v/c Ratio	0.49	0.46	0.18	0.37	0.88	0.42	0.26	0.67		0.74	0.26	
Control Delay	54.4	26.9	5.0	55.7	46.1	5.9	53.0	44.8		68.4	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.4	26.9	5.0	55.7	46.1	5.9	53.0	44.8		68.4	11.6	
LOS	D	C	A	E	D	A	D	D		E	B	
Approach Delay		28.5			33.3			45.6			43.2	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	20.0		14.3	24.3	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	44.3	44.3	10.0	44.3	44.3	10.0	17.8		14.3	22.1	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.5	37.5	10.0	37.5	37.5	0.0	15.5		14.1	34.3	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.3	42.3	0.0	27.6	27.6	0.0	11.7		10.1	26.5	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	42	427	34	32	279		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	8		3	1	
CO Emissions (g/hr)	170	302	52	91	888	153	66	585		231	79	
NOx Emissions (g/hr)	33	59	10	18	173	30	13	114		45	15	
VOC Emissions (g/hr)	39	70	12	21	206	35	15	136		54	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	166	0	36	354	13	26	127		99	11	
Queue Length 95th (ft)	80	275	34	81	#585	66	63	169		#207	52	
Internal Link Dist (ft)		640			195			1304			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	268	762	715	155	778	827	152	905		216	520	

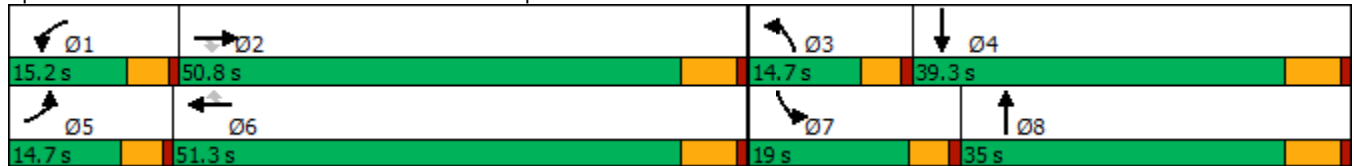




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.44	0.17	0.35	0.76	0.39	0.26	0.42		0.68	0.23	

Intersection Summary	
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	103.6
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.88
Intersection Signal Delay:	35.5
Intersection LOS:	D
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	120
70th %ile Actuated Cycle:	111
50th %ile Actuated Cycle:	107.8
30th %ile Actuated Cycle:	98.5
10th %ile Actuated Cycle:	80.8
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↖↗		↖	↗	
Traffic Volume (veh/h)	112	288	103	47	506	274	34	277	51	126	17	83
Future Volume (veh/h)	112	288	103	47	506	274	34	277	51	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	120	55	588	319	40	322	59	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	297	705	598	127	669	571	110	437	79	176	50	245
Arrive On Green	0.11	0.40	0.40	0.08	0.38	0.38	0.07	0.16	0.16	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2733	495	1556	249	1207
Grp Volume(v), veh/h	130	335	120	55	588	319	40	189	192	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1612	1556	0	1456
Q Serve(g_s), s	3.9	12.7	4.7	3.1	27.9	15.0	2.2	10.0	10.2	8.3	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.7	4.7	3.1	27.9	15.0	2.2	10.0	10.2	8.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.83
Lane Grp Cap(c), veh/h	297	705	598	127	669	571	110	259	258	176	0	295
V/C Ratio(X)	0.44	0.47	0.20	0.43	0.88	0.56	0.36	0.73	0.75	0.83	0.00	0.40
Avail Cap(c_a), veh/h	310	873	740	180	890	760	175	524	522	249	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	19.6	17.3	39.0	25.8	21.8	39.7	35.8	35.9	38.9	0.0	30.9
Incr Delay (d2), s/veh	1.0	0.5	0.2	2.3	8.0	0.9	2.0	4.0	4.3	15.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.0	1.6	1.2	11.9	5.1	0.9	4.1	4.2	3.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.1	17.4	41.3	33.8	22.7	41.7	39.7	40.1	54.2	0.0	31.8
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		585			962			421				264
Approach Delay, s/veh		23.7			30.6			40.1				44.3
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	42.2	11.0	24.2	14.3	40.1	14.8	20.3				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0				
Max Q Clear Time (g_c+I1), s	5.1	14.7	4.2	8.2	5.9	29.9	10.3	12.2				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.7	0.1	4.2	0.1	2.0				

Intersection Summary

HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	6	356	8	3	164
Future Volume (vph)	17	6	356	8	3	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.962		0.997			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1638	0	1759	0	1676	1765
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1638	0	1759	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	755		1312			1384
Travel Time (s)	17.2		25.6			27.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	18	7	387	9	3	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	396	0	3	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	17	6	356	8	3	164
Future Vol, veh/h	17	6	356	8	3	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	7	387	9	3	178
























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	576	392	0	0	396
Stage 1	392	-	-	-	-
Stage 2	184	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	479	657	-	-	1163
Stage 1	683	-	-	-	-
Stage 2	848	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	478	657	-	-	1163
Mov Cap-2 Maneuver	478	-	-	-	-
Stage 1	683	-	-	-	-
Stage 2	845	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	515	1163
HCM Lane V/C Ratio	-	-	0.049	0.003
HCM Control Delay (s)	-	-	12.3	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario A)  
01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	186	125	181	402	103	161	230	116	60	112	9
Future Volume (vph)	31	186	125	181	402	103	161	230	116	60	112	9
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1679	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1679	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		16				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	200	134	195	432	111	173	247	125	65	120	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	200	134	195	543	0	173	247	125	65	120	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario A)

01/13/2023



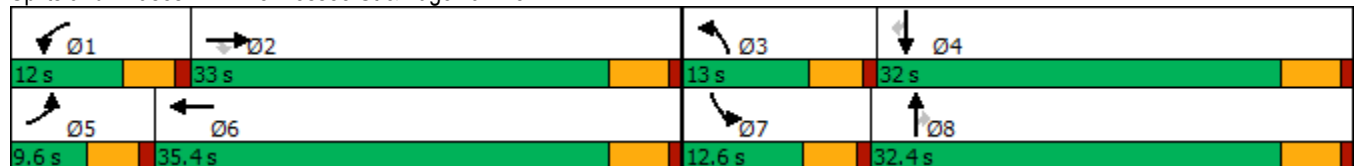
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.6	17.9	17.9	8.3	28.1		9.5	18.5	18.5	7.7	14.4	14.4
Actuated g/C Ratio	0.08	0.27	0.27	0.12	0.42		0.14	0.28	0.28	0.11	0.21	0.21
v/c Ratio	0.28	0.22	0.27	1.03	0.76		0.79	0.53	0.25	0.36	0.33	0.02
Control Delay	43.6	20.8	6.0	113.9	29.1		63.0	28.4	5.8	40.4	26.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	20.8	6.0	113.9	29.1		63.0	28.4	5.8	40.4	26.9	0.1
LOS	D	C	A	F	C		E	C	A	D	C	A
Approach Delay		17.5			51.5			34.2			30.0	
Approach LOS		B			D			C			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.4	19.4	8.1	19.0	19.0
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	0.0	18.4	18.4	7.5	30.4		8.5	16.5	16.5	8.1	16.1	16.1
50th %ile Term Code	Skip	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	13.8	13.8	7.5	25.8		8.5	21.4	21.4	0.0	8.4	8.4
30th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.4	6.4	7.5	18.4		8.9	8.4	8.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	31	125	18	113	362		110	178	16	54	83	0
Fuel Used(gal)	1	3	1	6	8		5	5	1	1	2	0
CO Emissions (g/hr)	53	217	74	412	565		322	358	105	103	161	6
NOx Emissions (g/hr)	10	42	14	80	110		63	70	20	20	31	1
VOC Emissions (g/hr)	12	50	17	96	131		75	83	24	24	37	1
Dilemma Vehicles (#)	0	10	0	0	31		0	12	0	0	5	0
Queue Length 50th (ft)	14	35	0	~102	178		74	94	0	26	43	0
Queue Length 95th (ft)	#52	70	40	#289	#493		#244	186	36	77	95	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	118	1547	752	189	849		220	766	728	207	755	741



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.13	0.18	1.03	0.64		0.79	0.32	0.17	0.31	0.16	0.01

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	67
Natural Cycle:	95
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	37.3
Intersection LOS:	D
Intersection Capacity Utilization	66.2%
ICU Level of Service	C
Analysis Period (min)	15
90th %ile Actuated Cycle:	89.6
70th %ile Actuated Cycle:	82
50th %ile Actuated Cycle:	69.5
30th %ile Actuated Cycle:	57.2
10th %ile Actuated Cycle:	36.8
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

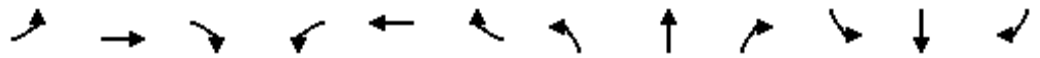
Splits and Phases: 4: Tennessee St & Lugonia Ave



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	31	186	125	181	402	103	161	230	116	60	112	9
Future Volume (veh/h)	31	186	125	181	402	103	161	230	116	60	112	9
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	33	200	134	195	432	111	173	247	125	65	120	10
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, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	51	957	425	202	511	131	209	343	295	88	210	184
Arrive On Green	0.04	0.28	0.28	0.13	0.38	0.38	0.13	0.20	0.20	0.06	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1348	346	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	33	200	134	195	0	543	173	247	125	65	120	10
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1695	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.3	2.6	4.1	7.2	0.0	16.9	6.2	7.8	4.3	2.4	3.8	0.3
Cycle Q Clear(g_c), s	1.3	2.6	4.1	7.2	0.0	16.9	6.2	7.8	4.3	2.4	3.8	0.3
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	957	425	202	0	642	209	343	295	88	210	184
V/C Ratio(X)	0.65	0.21	0.32	0.96	0.00	0.85	0.83	0.72	0.42	0.74	0.57	0.05
Avail Cap(c_a), veh/h	126	1635	725	202	0	894	231	815	701	220	804	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	15.7	16.2	24.9	0.0	16.4	24.3	21.6	20.2	26.8	23.9	22.3
Incr Delay (d2), s/veh	13.0	0.1	0.4	52.6	0.0	5.5	19.8	2.9	1.0	11.4	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	1.3	5.4	0.0	6.5	3.2	3.1	1.4	1.1	1.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	15.8	16.6	77.5	0.0	21.8	44.1	24.4	21.1	38.2	26.3	22.5
LnGrp LOS	D	B	B	E	A	C	D	C	C	D	C	C
Approach Vol, veh/h		367			738			545				195
Approach Delay, s/veh		18.3			36.6			29.9				30.1
Approach LOS		B			D			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	21.4	12.2	12.1	6.6	26.8	7.7	16.5				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4				
Max Q Clear Time (g_c+I1), s	9.2	6.1	8.2	5.8	3.3	18.9	4.4	9.8				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.6	0.0	2.7	0.0	1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				30.3								
HCM 6th LOS				C								



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (vph)	0	0	0	217	5	167	209	444	0	0	332	157
Future Volume (vph)	0	0	0	217	5	167	209	444	0	0	332	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936						0.941	
Flt Protected					0.973		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Flt Permitted					0.973		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					172						167	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1108			612			817	
Travel Time (s)		19.4			25.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	224	5	172	215	458	0	0	342	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	401	0	215	458	0	0	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.70		0.70	0.19			0.35	
Control Delay					27.0		36.4	7.5			12.1	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.0		36.4	7.5			12.1	
LOS					C		D	A			B	
Approach Delay					27.0			16.7			12.1	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					207		193	251			216	
Fuel Used(gal)					7		4	5			8	
CO Emissions (g/hr)					464		274	317			563	
NOx Emissions (g/hr)					90		53	62			110	
VOC Emissions (g/hr)					108		64	73			130	
Dilemma Vehicles (#)					0		0	29			27	
Queue Length 50th (ft)					64		117	90			66	
Queue Length 95th (ft)					105		189	110			136	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					859		452	2358			1590	

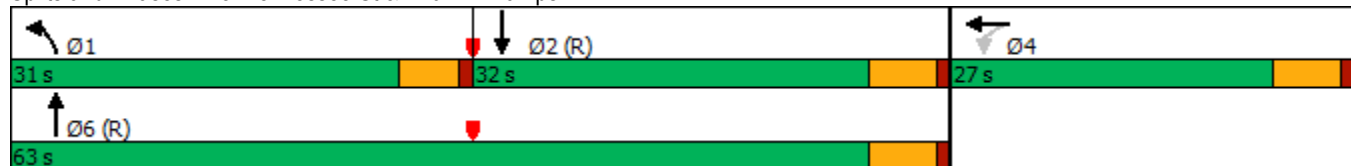


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.48	0.19			0.35	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization	59.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 5: Tennessee St & I-10 WB Ramps



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (veh/h)	0	0	0	217	5	167	209	444	0	0	332	157
Future Volume (veh/h)	0	0	0	217	5	167	209	444	0	0	332	157
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	172	215	458	0	0	342	221
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				274	7	238	246	2264	0	0	960	608
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	39	1338	1581	3318	0	0	2049	1243
Grp Volume(v), veh/h				224	0	177	215	458	0	0	290	273
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1534
Q Serve(g_s), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Cycle Q Clear(g_c), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				274	0	244	246	2264	0	0	817	751
V/C Ratio(X)				0.82	0.00	0.72	0.88	0.20	0.00	0.00	0.36	0.36
Avail Cap(c_a), veh/h				368	0	329	457	2264	0	0	817	751
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.9	30.2	0.0	0.0	0.0	14.2	14.3
Incr Delay (d2), s/veh				10.2	0.0	5.1	8.8	0.2	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.9	4.2	0.1	0.0	0.0	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.8	0.0	40.0	39.0	0.2	0.0	0.0	15.4	15.6
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					401			673			563	
Approach Delay, s/veh					43.3			12.6			15.5	
Approach LOS					D			B			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.5		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	11.9		14.6		2.0						
Green Ext Time (p_c), s	0.5	3.0		1.4		3.3						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											21.1	
HCM 6th LOS											C	

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↘	↕↕	
Traffic Volume (vph)	143	144	321	0	0	0	0	510	112	124	425	0
Future Volume (vph)	143	144	321	0	0	0	0	510	112	124	425	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.921						0.973				
Flt Protected		0.988								0.950		
Satd. Flow (prot)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.988								0.950		
Satd. Flow (perm)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		316						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	146	147	328	0	0	0	0	520	114	127	434	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	0	0	0	634	0	127	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		16.7						44.7		12.6	62.3	
Actuated g/C Ratio		0.19						0.50		0.14	0.69	
v/c Ratio		0.77						0.40		0.59	0.19	
Control Delay		22.7						16.3		41.9	2.7	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		22.7						16.3		41.9	2.7	
LOS		C						B		D	A	
Approach Delay		22.7						16.3			11.6	
Approach LOS		C						B			B	
90th %ile Green (s)	24.5	24.5						31.9		17.6	54.5	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	20.0	20.0						39.4		14.6	59.0	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	16.5	16.5						44.9		12.6	62.5	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	13.7	13.7						49.8		10.5	65.3	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.8	8.8						57.7		7.5	70.2	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		282						372		110	108	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		709						523		170	204	
NOx Emissions (g/hr)		138						102		33	40	
VOC Emissions (g/hr)		164						121		39	47	
Dilemma Vehicles (#)		0						35		0	8	
Queue Length 50th (ft)		86						106		64	12	
Queue Length 95th (ft)		131						196		93	16	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1070						1603		267	2321	

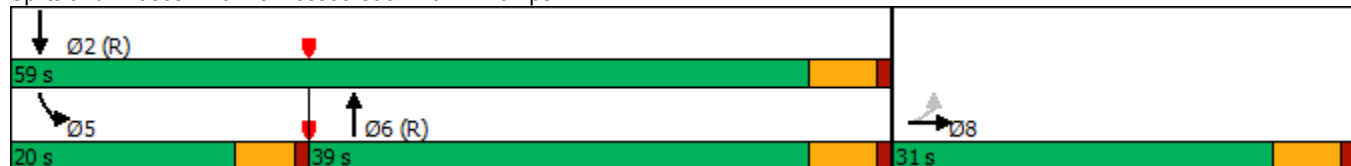


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.58						0.40		0.48	0.19	

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	17.0
Intersection LOS:	B
Intersection Capacity Utilization	59.2%
ICU Level of Service	B
Analysis Period (min)	15

















Splits and Phases: 6: Tennessee St & I-10 EB Ramps



Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario A)

01/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	144	321	0	0	0	0	510	112	124	425	0
Future Volume (veh/h)	143	144	321	0	0	0	0	510	112	124	425	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	146	147	328				0	520	114	127	434	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	213	214	370				0	1249	273	157	2090	0
Arrive On Green	0.26	0.26	0.26				0.00	0.47	0.47	0.03	0.20	0.00
Sat Flow, veh/h	827	833	1442				0	2769	585	1569	3455	0
Grp Volume(v), veh/h	293	0	328				0	318	316	127	434	0
Grp Sat Flow(s),veh/h/ln	1660	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	14.3	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Cycle Q Clear(g_c), s	14.3	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Prop In Lane	0.50		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	426	0	370				0	765	756	157	2090	0
V/C Ratio(X)	0.69	0.00	0.89				0.00	0.42	0.42	0.81	0.21	0.00
Avail Cap(c_a), veh/h	470	0	409				0	765	756	261	2090	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	30.2	0.0	32.2				0.0	15.9	16.0	42.7	17.4	0.0
Incr Delay (d2), s/veh	3.7	0.0	19.0				0.0	1.7	1.7	9.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	8.6				0.0	4.4	4.4	3.3	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	51.1				0.0	17.6	17.7	51.7	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		621						634			561	
Approach Delay, s/veh		43.0						17.6			25.3	
Approach LOS		D						B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			14.0	47.4		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			9.2	13.6		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.7		1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	196	474	98	146	64
Future Volume (vph)	14	196	474	98	146	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3214	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3214	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			59			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	206	499	103	154	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	206	602	0	154	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



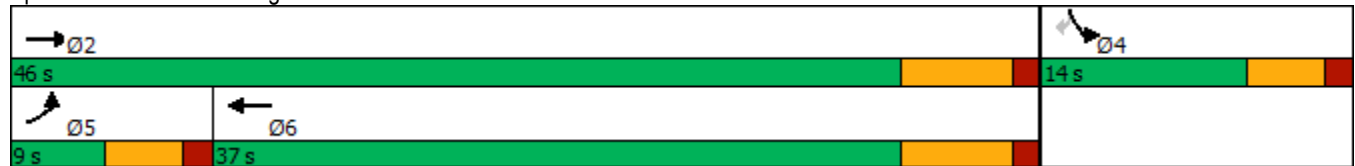
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)				7.0		
Flash Dont Walk (s)				19.0		
Pedestrian Calls (#/hr)				0		
Act Effct Green (s)	4.3	19.3	18.0		7.3	7.3
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.11	0.35		0.25	0.18
Control Delay	17.1	5.4	7.4		13.6	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.1	5.4	7.4		13.6	6.3
LOS	B	A	A		B	A
Approach Delay	6.2		7.4		11.3	
Approach LOS	A		A		B	
90th %ile Green (s)	4.2	27.0	18.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	12.3	12.3		7.6	7.6
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.6	11.6		7.0	7.0
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.7	16.7		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.5	21.5		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	90	303		108	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	314	502		279	101
NOx Emissions (g/hr)	6	61	98		54	20
VOC Emissions (g/hr)	7	73	116		65	24
Dilemma Vehicles (#)	0	23	63		0	0
Queue Length 50th (ft)	2	9	28		9	0
Queue Length 95th (ft)	17	22	91		38	24
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	202	3213	2918		809	463



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.21		0.19	0.14

Intersection Summary	
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	34
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization	31.3%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	47.3
70th %ile Actuated Cycle:	31
50th %ile Actuated Cycle:	29.7
30th %ile Actuated Cycle:	34.4
10th %ile Actuated Cycle:	27.8

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	196	474	98	146	64
Future Volume (veh/h)	14	196	474	98	146	64
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	206	499	103	154	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1668	906	186	403	206
Arrive On Green	0.01	0.50	0.33	0.33	0.14	0.14
Sat Flow, veh/h	1594	3428	2824	562	2910	1490
Grp Volume(v), veh/h	15	206	301	301	154	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1643	1455	1490
Q Serve(g_s), s	0.3	1.0	4.6	4.6	1.5	1.2
Cycle Q Clear(g_c), s	0.3	1.0	4.6	4.6	1.5	1.2
Prop In Lane	1.00			0.34	1.00	1.00
Lane Grp Cap(c), veh/h	19	1668	548	543	403	206
V/C Ratio(X)	0.80	0.12	0.55	0.55	0.38	0.33
Avail Cap(c_a), veh/h	219	4329	1660	1646	874	447
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	15.1	4.1	8.4	8.4	12.0	11.9
Incr Delay (d2), s/veh	52.9	0.0	0.9	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	1.0	1.0	0.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	68.0	4.1	9.2	9.3	12.6	12.8
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		221	602		221	
Approach Delay, s/veh		8.5	9.3		12.7	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.6		9.0	5.2	16.4
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		3.0		3.5	2.3	6.6
Green Ext Time (p_c), s		1.3		0.3	0.0	3.5
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			9.8			
HCM 6th LOS			A			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↘	
Traffic Volume (vph)	0	419	678	0	7	52
Future Volume (vph)	0	419	678	0	7	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.882	
Flt Protected					0.994	
Satd. Flow (prot)	0	4818	3353	0	1547	0
Flt Permitted					0.994	
Satd. Flow (perm)	0	4818	3353	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	455	737	0	8	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	455	737	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↓	
Traffic Vol, veh/h	0	419	678	0	7	52
Future Vol, veh/h	0	419	678	0	7	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	455	737	0	8	57
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	919	369
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	303	628
Stage 1	0	-	-	0	422	-
Stage 2	0	-	-	0	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	303	628
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	792	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	12			
HCM LOS						B
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	578			
HCM Lane V/C Ratio	-	-	0.111			
HCM Control Delay (s)	-	-	12			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.4			

Neighborhoods at Lugonia Village  
9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario A)  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	309	84	40	538	6	88	2	26	13	7	52
Future Volume (vph)	33	309	84	40	538	6	88	2	26	13	7	52
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98									
Frt			0.850		0.998			0.969			0.903	
Flt Protected	0.950			0.950				0.964			0.991	
Satd. Flow (prot)	1676	3257	1515	1583	3346	0	0	1608	0	0	1579	0
Flt Permitted	0.418			0.950				0.727			0.934	
Satd. Flow (perm)	738	3257	1481	1583	3346	0	0	1213	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		3			18			57	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			1									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	5%	1%	2%	2%	2%	3%	2%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	351	95	45	611	7	100	2	30	14	8	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	351	95	45	618	0	0	132	0	0	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		23.0	23.0	
Total Split (s)	39.0	39.0	39.0	17.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	48.8%	48.8%	48.8%	21.3%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	33.7	33.7	33.7	12.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1	1				0	0		0	0	
Act Effct Green (s)	24.2	24.2	24.2	11.4	28.7			11.8			17.2	
Actuated g/C Ratio	0.59	0.59	0.59	0.28	0.70			0.29			0.42	
v/c Ratio	0.08	0.18	0.10	0.10	0.27			0.37			0.12	
Control Delay	14.6	11.6	4.8	17.9	6.0			15.8			7.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	14.6	11.6	4.8	17.9	6.0			15.8			7.6	
LOS	B	B	A	B	A			B			A	
Approach Delay		10.5			6.8			15.8			7.6	
Approach LOS		B			A			B			A	
90th %ile Green (s)	16.0	16.0	16.0	10.0	31.0		15.0	15.0		15.0	15.0	
90th %ile Term Code	Gap	Gap	Gap	Min	Hold		Hold	Hold		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	10.0	30.0		15.0	15.0		15.0	15.0	
70th %ile Term Code	Min	Min	Min	Min	Hold		Hold	Hold		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		15.0	15.0		15.0	15.0	
50th %ile Term Code	Min	Min	Min	Skip	Min		Hold	Hold		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		0.0	0.0		0.0	0.0	
30th %ile Term Code	Min	Min	Min	Skip	Min		Skip	Skip		Skip	Skip	
10th %ile Green (s)	30.0	30.0	30.0	0.0	30.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Skip	Dwell		Skip	Skip		Skip	Skip	
Stops (vph)	26	173	18	34	218			73			25	
Fuel Used(gal)	0	3	1	0	4			2			0	
CO Emissions (g/hr)	29	217	36	35	249			130			32	
NOx Emissions (g/hr)	6	42	7	7	48			25			6	
VOC Emissions (g/hr)	7	50	8	8	58			30			7	
Dilemma Vehicles (#)	0	17	0	0	29			10			0	
Queue Length 50th (ft)	5	26	0	8	51			16			3	
Queue Length 95th (ft)	28	77	26	35	75			72			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	593	2618	1209	527	3235			665			832	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.06	0.13	0.08	0.09	0.19			0.20			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	41.2
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization	54.6%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	55.8
70th %ile Actuated Cycle:	54.8
50th %ile Actuated Cycle:	39.8
30th %ile Actuated Cycle:	20.3
10th %ile Actuated Cycle:	35.3

Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	309	84	40	538	6	88	2	26	13	7	52
Future Volume (veh/h)	33	309	84	40	538	6	88	2	26	13	7	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1730	1786	1673	1772	1772	1758	1772	1660	1772	1772	1772
Adj Flow Rate, veh/h	36	351	95	45	611	7	100	2	30	14	8	57
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	1	2	2	2	3	2	10	2	2	2
Cap, veh/h	398	1017	468	149	1726	20	427	23	94	127	85	323
Arrive On Green	0.31	0.31	0.31	0.09	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	805	3287	1511	1594	3409	39	1016	80	322	135	292	1107
Grp Volume(v), veh/h	36	351	95	45	302	316	132	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	805	1643	1511	1594	1683	1765	1419	0	0	1534	0	0
Q Serve(g_s), s	1.6	4.0	2.2	1.3	5.2	5.2	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	4.0	2.2	1.3	5.2	5.2	3.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.76		0.23	0.18		0.72
Lane Grp Cap(c), veh/h	398	1017	468	149	852	894	544	0	0	534	0	0
V/C Ratio(X)	0.09	0.35	0.20	0.30	0.35	0.35	0.24	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	708	2285	1051	395	1761	1846	697	0	0	701	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	12.9	12.3	20.5	7.2	7.2	13.2	0.0	0.0	12.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	1.1	0.2	0.2	0.2	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(50%),veh/ln	0.2	1.2	0.7	0.5	1.4	1.4	0.9	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	13.1	12.5	21.6	7.4	7.4	13.5	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		482			663			132			79	
Approach Delay, s/veh		13.0			8.4			13.5			12.9	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.5	20.3		18.6		29.8		18.6				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	12.0	33.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.3	6.0		3.8		7.2		5.2				
Green Ext Time (p_c), s	0.0	2.9		0.3		4.0		0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.8								
HCM 6th LOS				B								



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	320	541	3	6	43
Future Volume (vph)	28	320	541	3	6	43
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt			0.999		0.882	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1568	3226	1763	0	1547	0
Flt Permitted	0.950				0.994	
Satd. Flow (perm)	1568	3226	1763	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	32	364	615	3	7	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	364	618	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	320	541	3	6	43
Future Vol, veh/h	28	320	541	3	6	43
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	32	364	615	3	7	49

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	619	0	-	0	864 618
Stage 1	-	-	-	-	618 -
Stage 2	-	-	-	-	246 -
Critical Hdwy	4.145	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.2285	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	953	-	-	-	309 488
Stage 1	-	-	-	-	537 -
Stage 2	-	-	-	-	773 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	952	-	-	-	298 488
Mov Cap-2 Maneuver	-	-	-	-	298 -
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	772 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	952	-	-	-	453
HCM Lane V/C Ratio	0.033	-	-	-	0.123
HCM Control Delay (s)	8.9	-	-	-	14.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	0	0	23	0	3	0	6	25	0	6	0
Future Volume (vph)	0	0	0	23	0	3	0	6	25	0	6	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr <sub>t</sub>					0.983			0.891				
Fl <sub>t</sub> Protected					0.958							
Satd. Flow (prot)	0	1765	0	0	1678	0	0	1563	0	0	1782	0
Fl <sub>t</sub> Permitted					0.958							
Satd. Flow (perm)	0	1765	0	0	1678	0	0	1563	0	0	1782	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			965			1320			301	
Travel Time (s)		7.5			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	28	0	4	0	7	30	0	7	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	32	0	0	37	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	23	0	3	0	6	25	0	6	0
Future Vol, veh/h	0	0	0	23	0	3	0	6	25	0	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	0	0	28	0	4	0	7	30	0	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	1	0	0	-	61	1	78	59	-
Stage 1	-	-	-	-	-	-	-	1	-	58	58	-
Stage 2	-	-	-	-	-	-	-	60	-	20	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.23	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.327	3.509	4.009	-
Pot Cap-1 Maneuver	1618	-	-	1628	-	-	0	832	1081	913	834	0
Stage 1	-	-	-	-	-	-	0	897	-	956	849	0
Stage 2	-	-	-	-	-	-	0	847	-	1001	897	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1628	-	-	-	818	1081	870	820	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	818	-	870	820	-
Stage 1	-	-	-	-	-	-	-	897	-	956	835	-
Stage 2	-	-	-	-	-	-	-	833	-	965	897	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			6.4			8.7			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1018	1618	-	-	1628	-	-	820
HCM Lane V/C Ratio	0.037	-	-	-	0.017	-	-	0.009
HCM Control Delay (s)	8.7	0	-	-	7.2	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Neighborhoods at Lugonia Village  
12: Texas St & Pennsylvania Ave

Existing + Project AM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	27	10	15	131	25	49	5	189	44	42	254	7
Future Volume (vph)	27	10	15	131	25	49	5	189	44	42	254	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.961			0.967			0.975			0.997	
Flt Protected		0.975			0.969			0.999			0.993	
Satd. Flow (prot)	0	1618	0	0	1662	0	0	1726	0	0	1762	0
Flt Permitted		0.975			0.969			0.999			0.993	
Satd. Flow (perm)	0	1618	0	0	1662	0	0	1726	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	11	16	138	26	52	5	199	46	44	267	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	216	0	0	250	0	0	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.1%
ICU Level of Service	B
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	10	15	131	25	49	5	189	44	42	254	7
Future Vol, veh/h	27	10	15	131	25	49	5	189	44	42	254	7
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
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	28	11	16	138	26	52	5	199	46	44	267	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	11.1	10.8	12.2
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	52%	64%	14%
Vol Thru, %	79%	19%	12%	84%
Vol Right, %	18%	29%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	52	205	303
LT Vol	5	27	131	42
Through Vol	189	10	25	254
RT Vol	44	15	49	7
Lane Flow Rate	251	55	216	319
Geometry Grp	1	1	1	1
Degree of Util (X)	0.35	0.087	0.326	0.451
Departure Headway (Hd)	5.036	5.698	5.443	5.085
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	714	628	660	711
Service Time	3.068	3.743	3.478	3.085
HCM Lane V/C Ratio	0.352	0.088	0.327	0.449
HCM Control Delay	10.8	9.3	11.1	12.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.6	0.3	1.4	2.4





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	239	45	191	427	25	45	174	94	23	295	74
Future Volume (vph)	42	239	45	191	427	25	45	174	94	23	295	74
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.992				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3214	0	1599	3315	0	0	1764	1443	0	1773	1500
Flt Permitted	0.950			0.950				0.797			0.966	
Satd. Flow (perm)	1599	3214	0	1599	3315	0	0	1420	1443	0	1719	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			8				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	260	49	208	464	27	49	189	102	25	321	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	309	0	208	491	0	0	238	102	0	346	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	11.0		13.0	23.1			17.2	17.2		17.2	17.2
Actuated g/C Ratio	0.11	0.20		0.23	0.41			0.31	0.31		0.31	0.31
v/c Ratio	0.25	0.47		0.56	0.36			0.55	0.19		0.66	0.14
Control Delay	31.9	22.8		27.5	14.5			22.6	2.9		24.5	1.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	31.9	22.8		27.5	14.5			22.6	2.9		24.5	1.5
LOS	C	C		C	B			C	A		C	A
Approach Delay		24.0			18.4			16.7			20.2	
Approach LOS		C			B			B			C	
90th %ile Green (s)	6.4	15.5		19.3	28.4		27.3	27.3	27.3	27.3	27.3	27.3
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.8		15.9	22.3		20.7	20.7	20.7	20.7	20.7	20.7
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	6.4	10.8		12.9	17.3		16.7	16.7	16.7	16.7	16.7	16.7
50th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	9.1		10.4	24.2		13.5	13.5	13.5	13.5	13.5	13.5
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.3		7.8	19.8		9.9	9.9	9.9	9.9	9.9	9.9
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	39	210		153	286			165	7		250	3
Fuel Used(gal)	1	5		3	5			4	1		7	1
CO Emissions (g/hr)	60	342		206	363			254	39		484	50
NOx Emissions (g/hr)	12	67		40	71			49	7		94	10
VOC Emissions (g/hr)	14	79		48	84			59	9		112	12
Dilemma Vehicles (#)	0	17		0	28			14	0		21	0
Queue Length 50th (ft)	14	43		59	64			63	0		96	0
Queue Length 95th (ft)	53	100		149	126			150	18		210	9
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	192	1662		580	2489			782	855		947	886



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.24	0.19		0.36	0.20			0.30	0.12		0.37	0.09

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	56.1
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	19.6
Intersection LOS:	B
Intersection Capacity Utilization:	66.0%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	76.2
70th %ile Actuated Cycle:	63.5
50th %ile Actuated Cycle:	54.5
30th %ile Actuated Cycle:	47.1
10th %ile Actuated Cycle:	39.1

Splits and Phases: 13: Texas St & Lugonia Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↖	↗
Traffic Volume (veh/h)	42	239	45	191	427	25	45	174	94	23	295	74
Future Volume (veh/h)	42	239	45	191	427	25	45	174	94	23	295	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	46	260	49	208	464	27	49	189	102	25	321	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	70	408	76	253	841	49	71	218	683	63	466	705
Arrive On Green	0.04	0.15	0.15	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2789	518	1606	3234	188	3	465	1454	1	992	1502
Grp Volume(v), veh/h	46	153	156	208	241	250	238	0	102	346	0	80
Grp Sat Flow(s),veh/h/ln	1606	1657	1651	1606	1683	1738	468	0	1454	993	0	1502
Q Serve(g_s), s	1.8	5.4	5.6	7.8	7.7	7.7	0.2	0.0	2.5	0.2	0.0	1.9
Cycle Q Clear(g_c), s	1.8	5.4	5.6	7.8	7.7	7.7	29.2	0.0	2.5	29.2	0.0	1.9
Prop In Lane	1.00		0.31	1.00		0.11	0.21		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	70	242	241	253	438	452	289	0	683	529	0	705
V/C Ratio(X)	0.66	0.63	0.65	0.82	0.55	0.55	0.82	0.00	0.15	0.65	0.00	0.11
Avail Cap(c_a), veh/h	165	727	724	498	1088	1123	291	0	685	531	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	25.0	25.0	25.4	19.9	19.9	15.1	0.0	9.4	12.8	0.0	9.2
Incr Delay (d2), s/veh	9.9	2.7	2.9	6.6	1.1	1.1	16.9	0.0	0.1	2.9	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(50%),veh/ln	0.8	2.1	2.2	3.2	2.9	3.0	3.1	0.0	0.7	3.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	27.7	27.9	31.9	21.0	21.0	32.0	0.0	9.5	15.7	0.0	9.3
LnGrp LOS	D	C	C	C	C	C	C	A	A	B	A	A
Approach Vol, veh/h		355			699			340			426	
Approach Delay, s/veh		29.3			24.2			25.3			14.5	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	13.8		34.0	7.4	20.9		34.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.8	7.6		31.2	3.8	9.7		31.2				
Green Ext Time (p_c), s	0.4	1.6		0.0	0.0	3.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

























\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# **Appendix F: Existing Year With Project (Scenario A) PM Peak Hour Analysis Worksheets**

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	582	85	125	232	129	49	61	269	161	256	125
Future Volume (vph)	102	582	85	125	232	129	49	61	269	161	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			113			75
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	105	600	88	129	239	133	51	63	277	166	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	600	88	129	239	133	51	63	277	166	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.4	21.3	21.3	12.4	26.2	26.2	7.5	10.1	25.0	15.2	20.0	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.26	
v/c Ratio	0.46	0.66	0.17	0.52	0.42	0.22	0.34	0.28	0.50	0.55	0.46	
Control Delay	43.0	30.8	0.8	43.6	28.2	4.3	47.7	38.6	15.9	42.3	23.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	30.8	0.8	43.6	28.2	4.3	47.7	38.6	15.9	42.3	23.8	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.1			25.8			23.7			29.3	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.3	25.6	25.6	14.8	27.1	27.1	7.7	10.0	14.8	17.3	19.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Max	Hold	
50th %ile Green (s)	11.1	21.6	21.6	12.3	22.8	22.8	7.7	8.5	12.3	14.9	15.7	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.1	17.6	17.6	10.0	18.5	18.5	0.0	7.2	10.0	12.1	24.0	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.1	22.9	22.9	0.0	0.0	7.1	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	473	0	106	172	11	45	51	113	132	237	
Fuel Used(gal)	2	12	1	2	4	1	2	2	7	4	8	
CO Emissions (g/hr)	160	806	55	168	251	63	122	142	479	279	531	
NOx Emissions (g/hr)	31	157	11	33	49	12	24	28	93	54	103	
VOC Emissions (g/hr)	37	187	13	39	58	15	28	33	111	65	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	48	136	0	59	96	0	24	29	59	75	73	
Queue Length 95th (ft)	124	253	2	147	216	32	76	77	147	#200	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	394	1518	764	396	772	754	170	765	683	379	1828	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023

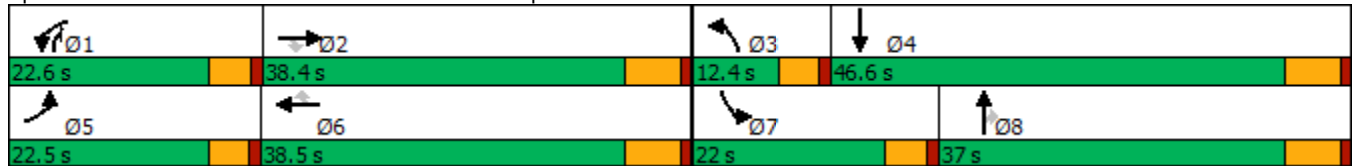


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.40	0.12	0.33	0.31	0.18	0.30	0.08	0.41	0.44	0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	78.3
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	27.5
Intersection LOS:	C
Intersection Capacity Utilization:	59.4%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	110.4
70th %ile Actuated Cycle:	89.1
50th %ile Actuated Cycle:	78.7
30th %ile Actuated Cycle:	68.3
10th %ile Actuated Cycle:	44.9
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave





Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	582	85	125	232	129	49	61	269	161	256	125
Future Volume (veh/h)	102	582	85	125	232	129	49	61	269	161	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	600	88	129	239	133	51	63	277	166	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	150	843	376	175	455	392	71	362	471	214	653	310
Arrive On Green	0.09	0.25	0.25	0.11	0.27	0.27	0.04	0.20	0.20	0.14	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	600	88	129	239	133	51	63	277	166	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.5	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.0	7.2	6.7	7.0
Cycle Q Clear(g_c), s	4.5	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.0	7.2	6.7	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	150	843	376	175	455	392	71	362	471	214	497	466
V/C Ratio(X)	0.70	0.71	0.23	0.74	0.52	0.34	0.72	0.17	0.59	0.78	0.40	0.42
Avail Cap(c_a), veh/h	398	1532	683	401	783	675	172	772	818	384	960	901
HCM Platoon Ratio	1.00	1.00	1.00	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	31.3	24.3	21.3	30.7	22.3	21.1	33.6	23.4	20.5	29.7	20.1	20.2
Incr Delay (d2), s/veh	5.7	1.1	0.3	6.0	0.9	0.5	12.6	0.2	1.2	6.0	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(50%),veh/ln	1.9	4.5	1.1	2.4	3.3	1.7	1.1	0.8	3.7	3.0	2.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	25.5	21.6	36.7	23.3	21.6	46.2	23.6	21.7	35.7	20.6	20.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		793			501			391			559	
Approach Delay, s/veh		26.6			26.3			25.2			25.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	23.8	7.9	27.0	11.4	24.9	14.3	20.6				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	7.6	13.6	4.2	9.0	6.5	10.5	9.2	13.0				
Green Ext Time (p_c), s	0.2	4.2	0.0	2.6	0.2	1.8	0.3	1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			25.9									
HCM 6th LOS			C									
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	482	137	25	320	160	56	384	37	184	12	110
Future Volume (vph)	393	482	137	25	320	160	56	384	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987				0.864
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198			8			113
Link Speed (mph)		30			40			35				30
Link Distance (ft)		720			275			1384				996
Travel Time (s)		16.4			4.7			27.0				22.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	405	497	141	26	330	165	58	396	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	497	141	26	330	165	58	434	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	39.4	39.4	10.3	24.0	24.0	10.5	18.7		16.4	28.8	
Actuated g/C Ratio	0.18	0.40	0.40	0.10	0.24	0.24	0.11	0.19		0.16	0.29	
v/c Ratio	0.76	0.71	0.21	0.16	0.78	0.32	0.35	0.69		0.74	0.25	
Control Delay	50.8	35.5	4.1	49.9	50.9	4.3	53.9	44.6		60.2	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.8	35.5	4.1	49.9	50.9	4.3	53.9	44.6		60.2	8.9	
LOS	D	D	A	D	D	A	D	D		E	A	
Approach Delay		37.2			36.1			45.7			39.8	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	26.0		18.8	34.4	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.6		18.8	30.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	36.9	36.9	10.0	26.3	26.3	10.0	19.3		18.8	28.1	
50th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Min	Gap		Max	Hold	
30th %ile Green (s)	17.2	42.5	42.5	0.0	20.6	20.6	10.0	16.0		15.2	21.2	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.2	32.2	0.0	14.6	14.6	0.0	12.0		10.9	27.6	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	347	386	13	24	283	10	51	367		159	22	
Fuel Used(gal)	8	8	1	1	8	1	2	11		5	1	
CO Emissions (g/hr)	572	581	67	44	549	78	109	754		319	90	
NOx Emissions (g/hr)	111	113	13	9	107	15	21	147		62	17	
VOC Emissions (g/hr)	133	135	15	10	127	18	25	175		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	134	305	0	17	209	0	38	145		123	6	
Queue Length 95th (ft)	#223	#506	35	48	336	33	86	207		#248	52	
Internal Link Dist (ft)		640			195			1304			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	617	752	722	164	547	600	169	1000		305	638	

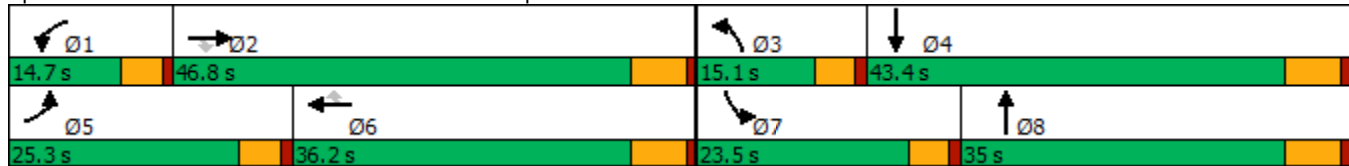


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.66	0.66	0.20	0.16	0.60	0.28	0.34	0.43		0.62	0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99.6
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	39.1
Intersection LOS:	D
Intersection Capacity Utilization	76.8%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	117
70th %ile Actuated Cycle:	112.6
50th %ile Actuated Cycle:	106.4
30th %ile Actuated Cycle:	90.4
10th %ile Actuated Cycle:	71.8
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↖↗		↖	↗	
Traffic Volume (veh/h)	393	482	137	25	320	160	56	384	37	184	12	110
Future Volume (veh/h)	393	482	137	25	320	160	56	384	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	497	141	26	330	165	58	396	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	501	615	517	88	405	343	146	548	52	228	33	310
Arrive On Green	0.17	0.35	0.35	0.06	0.23	0.23	0.09	0.18	0.18	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3105	296	1581	144	1356
Grp Volume(v), veh/h	405	497	141	26	330	165	58	214	220	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1719	1581	0	1500
Q Serve(g_s), s	10.3	19.7	5.3	1.2	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.3	19.7	5.3	1.2	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.90
Lane Grp Cap(c), veh/h	501	615	517	88	405	343	146	297	303	228	0	343
V/C Ratio(X)	0.81	0.81	0.27	0.29	0.82	0.48	0.40	0.72	0.73	0.83	0.00	0.36
Avail Cap(c_a), veh/h	776	935	786	206	687	582	213	632	645	385	0	726
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00
Uniform Delay (d), s/veh	30.8	22.9	18.2	35.1	28.2	25.7	33.1	30.0	30.1	32.2	0.0	25.1
Incr Delay (d2), s/veh	3.6	3.1	0.3	1.8	4.0	1.0	1.8	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.2	1.7	0.5	5.8	2.6	1.1	3.8	4.0	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	26.0	18.5	36.9	32.2	26.8	34.8	33.3	33.4	39.9	0.0	25.8
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1043			521			492				315
Approach Delay, s/veh		28.3			30.7			33.5				34.3
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	32.8	11.8	23.7	18.0	23.8	15.8	19.6				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0				
Max Q Clear Time (g_c+I1), s	3.2	21.7	4.7	7.4	12.3	15.7	11.0	11.4				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	1.0	2.1	0.3	2.3				

Intersection Summary

HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	13	4	473	17	6	168
Future Vol, veh/h	13	4	473	17	6	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	4	514	18	7	183

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	720	523	0	0	532	0
Stage 1	523	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	395	554	-	-	1036	-
Stage 1	595	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	392	554	-	-	1036	-
Mov Cap-2 Maneuver	392	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	421	1036
HCM Lane V/C Ratio	-	-	0.044	0.006
HCM Control Delay (s)	-	-	13.9	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	4	473	17	6	168
Future Volume (vph)	13	4	473	17	6	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.970		0.995			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1648	0	1756	0	1676	1765
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1648	0	1756	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	755		1312			1384
Travel Time (s)	17.2		25.6			27.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	14	4	514	18	7	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	532	0	7	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
























**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.4%
ICU Level of Service	A
Analysis Period (min)	15

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	784	404	151	452	117	301	309	265	89	83	9
Future Volume (vph)	64	784	404	151	452	117	301	309	265	89	83	9
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		0.99				0.99			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1701	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1701	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302		15				241			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1312	
Travel Time (s)		5.9			8.2			12.9			25.6	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	808	416	156	466	121	310	319	273	92	86	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	808	416	156	587	0	310	319	273	92	86	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



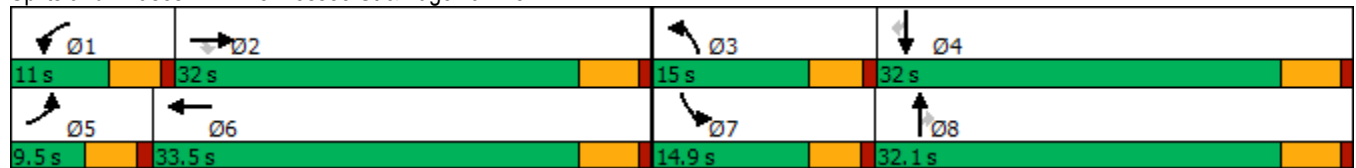
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.3	25.4	25.4	6.8	30.0		11.2	19.6	19.6	9.0	17.6	17.6
Actuated g/C Ratio	0.07	0.33	0.33	0.09	0.39		0.14	0.25	0.25	0.12	0.23	0.23
v/c Ratio	0.62	0.74	0.61	1.12	0.88		1.36	0.72	0.50	0.50	0.22	0.02
Control Delay	67.2	29.9	11.8	153.2	43.9		221.3	37.3	8.7	46.2	25.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	29.9	11.8	153.2	43.9		221.3	37.3	8.7	46.2	25.9	0.1
LOS	E	C	B	F	D		F	D	A	D	C	A
Approach Delay		26.0			66.8			91.9			34.6	
Approach LOS		C			E			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	25.3	25.3	10.4	25.2	25.2
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	20.9	20.9	10.1	20.5	20.5
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	16.5	16.5	8.3	14.3	14.3
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	0.0	17.5	17.5	6.5	28.5		10.9	10.4	10.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Hold	Hold	Max	Max		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	52	652	112	100	416		198	263	48	79	60	0
Fuel Used(gal)	2	16	4	6	11		18	8	4	2	2	0
CO Emissions (g/hr)	123	1101	309	431	761		1277	533	256	159	117	6
NOx Emissions (g/hr)	24	214	60	84	148		248	104	50	31	23	1
VOC Emissions (g/hr)	29	255	72	100	176		296	124	59	37	27	1
Dilemma Vehicles (#)	0	45	0	0	32		0	15	0	0	4	0
Queue Length 50th (ft)	35	196	43	~104	297		~233	153	13	46	36	0
Queue Length 95th (ft)	#110	294	149	#239	#574		#420	242	74	99	72	0
Internal Link Dist (ft)		269			341			583			1232	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	107	1227	729	139	666		228	648	685	223	640	620



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.66	0.57	1.12	0.88		1.36	0.49	0.40	0.41	0.13	0.01

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	77.6
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.36
Intersection Signal Delay:	55.3
Intersection LOS:	E
Intersection Capacity Utilization:	77.6%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	88.2
50th %ile Actuated Cycle:	83.5
30th %ile Actuated Cycle:	77.3
10th %ile Actuated Cycle:	48.9
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: Tennessee St & Lugonia Ave



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	784	404	151	452	117	301	309	265	89	83	9
Future Volume (veh/h)	64	784	404	151	452	117	301	309	265	89	83	9
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		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	66	808	416	156	466	121	310	319	273	92	86	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	81	1132	501	143	508	132	230	426	354	115	295	250
Arrive On Green	0.05	0.34	0.34	0.09	0.38	0.38	0.14	0.24	0.24	0.07	0.17	0.17
Sat Flow, veh/h	1594	3367	1491	1594	1355	352	1594	1772	1472	1594	1758	1488
Grp Volume(v), veh/h	66	808	416	156	0	587	310	319	273	92	86	9
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1707	1594	1772	1472	1594	1758	1488
Q Serve(g_s), s	3.0	15.2	18.7	6.5	0.0	23.8	10.5	12.1	12.6	4.1	3.1	0.4
Cycle Q Clear(g_c), s	3.0	15.2	18.7	6.5	0.0	23.8	10.5	12.1	12.6	4.1	3.1	0.4
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1132	501	143	0	640	230	426	354	115	295	250
V/C Ratio(X)	0.82	0.71	0.83	1.09	0.00	0.92	1.35	0.75	0.77	0.80	0.29	0.04
Avail Cap(c_a), veh/h	110	1252	554	143	0	670	230	661	549	228	654	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	21.0	22.2	33.1	0.0	21.6	31.1	25.5	25.7	33.2	26.4	25.3
Incr Delay (d2), s/veh	27.9	1.7	9.5	102.6	0.0	17.1	181.5	2.7	3.6	12.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.6	7.2	6.5	0.0	11.5	15.4	5.1	4.4	1.9	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	22.8	31.6	135.7	0.0	38.7	212.5	28.2	29.3	45.3	27.0	25.4
LnGrp LOS	E	C	C	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		1290			743			902				187
Approach Delay, s/veh		27.7			59.1			91.9				35.9
Approach LOS		C			E			F				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	29.4	15.0	17.2	8.2	32.2	9.7	22.5				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1				
Max Q Clear Time (g_c+I1), s	8.5	20.7	12.5	5.1	5.0	25.8	6.1	14.6				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.4	0.0	1.0	0.1	2.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				54.2								
HCM 6th LOS				D								

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario A)

01/13/2023

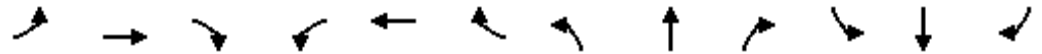


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↕	
Traffic Volume (vph)	0	0	0	119	3	231	223	732	0	0	530	136
Future Volume (vph)	0	0	0	119	3	231	223	732	0	0	530	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.902							0.969
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					243							38
Link Speed (mph)		30			30			35				35
Link Distance (ft)		855			1063			612				817
Travel Time (s)		19.4			24.2			11.9				15.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	0	0	125	3	243	235	771	0	0	558	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	371	0	235	771	0	0	701	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0				5.0
Minimum Split (s)				22.5	22.5		10.0	23.5				22.5
Total Split (s)				24.0	24.0		30.0	66.0				36.0
Total Split (%)				26.7%	26.7%		33.3%	73.3%				40.0%
Maximum Green (s)				18.5	18.5		25.0	60.5				30.5
Yellow Time (s)				4.5	4.5		4.0	4.5				4.5
All-Red Time (s)				1.0	1.0		1.0	1.0				1.0
Lost Time Adjust (s)					0.0		0.0	0.0				0.0
Total Lost Time (s)					5.5		5.0	5.5				5.5
Lead/Lag							Lead					Lag
Lead-Lag Optimize?							Yes					Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0				3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0				3.0
Time Before Reduce (s)				0.0	0.0		0.0	0.0				0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0				0.0
Recall Mode				None	None		None	C-Min				C-Min
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					10.0		18.6	69.0				45.4
Actuated g/C Ratio					0.11		0.21	0.77				0.50
v/c Ratio					0.68		0.73	0.30				0.42
Control Delay					19.8		43.0	1.1				15.9
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					19.8		43.0	1.1				15.9
LOS					B		D	A				B
Approach Delay					19.8			10.9				15.9
Approach LOS					B			B				B
90th %ile Green (s)				15.5	15.5		25.3	63.5				33.2
90th %ile Term Code				Gap	Gap		Gap	Coord				Coord
70th %ile Green (s)				11.7	11.7		21.5	67.3				40.8
70th %ile Term Code				Gap	Gap		Gap	Coord				Coord
50th %ile Green (s)				9.6	9.6		18.7	69.4				45.7
50th %ile Term Code				Gap	Gap		Gap	Coord				Coord
30th %ile Green (s)				7.5	7.5		15.8	71.5				50.7
30th %ile Term Code				Gap	Gap		Gap	Coord				Coord
10th %ile Green (s)				5.5	5.5		11.7	73.5				56.8
10th %ile Term Code				Gap	Gap		Gap	Coord				Coord
Stops (vph)					120		183	72				396
Fuel Used(gal)					5		4	4				12
CO Emissions (g/hr)					350		302	275				857
NOx Emissions (g/hr)					68		59	54				167
VOC Emissions (g/hr)					81		70	64				199
Dilemma Vehicles (#)					0		0	22				37
Queue Length 50th (ft)					36		112	13				117
Queue Length 95th (ft)					75		m105	m18				212
Internal Link Dist (ft)		775			983			532				737
Turn Bay Length (ft)							150					
Base Capacity (vph)					800		436	2572				1659



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario A)

01/13/2023



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↔	
Traffic Volume (veh/h)	0	0	0	119	3	231	223	732	0	0	530	136
Future Volume (veh/h)	0	0	0	119	3	231	223	732	0	0	530	136
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	243	235	771	0	0	558	143
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				306	7	278	265	2331	0	0	1246	318
Arrive On Green				0.19	0.19	0.19	0.34	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2744	678
Grp Volume(v), veh/h				128	0	243	235	771	0	0	353	348
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1650
Q Serve(g_s), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Cycle Q Clear(g_c), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h				313	0	278	265	2331	0	0	790	774
V/C Ratio(X)				0.41	0.00	0.87	0.89	0.33	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h				347	0	309	439	2331	0	0	790	774
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	35.6	29.1	0.0	0.0	0.0	16.0	16.1
Incr Delay (d2), s/veh				0.9	0.0	21.5	6.2	0.2	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.7	4.2	0.1	0.0	0.0	4.9	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.2	0.0	57.2	35.3	0.2	0.0	0.0	17.9	17.9
LnGrp LOS				C	A	E	D	A	A	A	B	B
Approach Vol, veh/h					371			1006			701	
Approach Delay, s/veh					48.9			8.4			17.9	
Approach LOS					D			A			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	47.7		22.2		67.8						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	14.8		16.2		2.0						
Green Ext Time (p_c), s	0.5	3.8		0.5		6.2						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.8								
HCM 6th LOS				B								

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project PM (Scenario A)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.949						0.971				
Flt Protected		0.984								0.950		
Satd. Flow (prot)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.984								0.950		
Satd. Flow (perm)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	352	366	373	0	0	0	0	654	157	252	432	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1091	0	0	0	0	0	811	0	252	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		31.3						26.9		15.8	47.7	
Actuated g/C Ratio		0.35						0.30		0.18	0.53	
v/c Ratio		0.94						0.81		0.91	0.25	
Control Delay		43.3						35.2		63.6	15.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		43.3						35.2		63.6	15.1	
LOS		D						D		E	B	
Approach Delay		43.3						35.2			33.0	
Approach LOS		D						D			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	35.2	35.2						23.9		14.9	43.8	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		809						666		208	284	
Fuel Used(gal)		23						14		6	5	
CO Emissions (g/hr)		1636						964		400	364	
NOx Emissions (g/hr)		318						188		78	71	
VOC Emissions (g/hr)		379						223		93	84	
Dilemma Vehicles (#)		0						43		0	19	
Queue Length 50th (ft)		293						211		146	108	
Queue Length 95th (ft)		#446						280		#281	48	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1156						1054		281	1826	

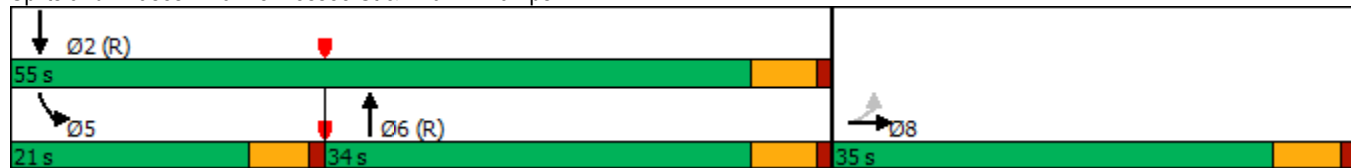


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.94						0.77		0.90	0.24	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 38.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 83.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Tennessee St & I-10 EB Ramps



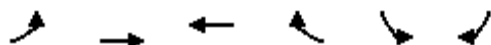
Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project PM (Scenario A)

01/13/2023



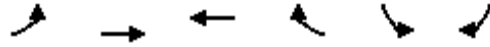
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↕	↕↕	
Traffic Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	352	366	373				0	654	157	252	432	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	332	357	386				0	853	205	283	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	1014	1088	1179				0	2782	646	1594	3428	0
Grp Volume(v), veh/h	598	0	493				0	408	403	252	432	0
Grp Sat Flow(s),veh/h/ln	1721	0	1560				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Cycle Q Clear(g_c), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Prop In Lane	0.59		0.76				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	564	0	511				0	533	524	283	1837	0
V/C Ratio(X)	1.06	0.00	0.97				0.00	0.77	0.77	0.89	0.24	0.00
Avail Cap(c_a), veh/h	564	0	511				0	533	524	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.7				0.0	27.7	27.8	41.5	20.6	0.0
Incr Delay (d2), s/veh	54.5	0.0	31.0				0.0	10.1	10.3	25.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	0.0	14.4				0.0	9.0	8.9	8.0	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	0.0	60.7				0.0	37.8	38.1	66.9	20.9	0.0
LnGrp LOS	F	A	E				A	D	D	E	C	A
Approach Vol, veh/h		1091						811			684	
Approach Delay, s/veh		73.9						38.0			37.9	
Approach LOS		E						D			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			21.0	34.0		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		12.0			16.1	21.8		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.7		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			53.1									
HCM 6th LOS			D									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	748	464	298	504	129
Future Volume (vph)	62	748	464	298	504	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			310			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	779	483	310	525	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	779	793	0	525	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)				7.0		
Flash Dont Walk (s)				19.0		
Pedestrian Calls (#/hr)				6		
Act Effct Green (s)	4.5	20.7	16.1		12.2	12.2
Actuated g/C Ratio	0.10	0.46	0.36		0.27	0.27
v/c Ratio	0.41	0.50	0.59		0.67	0.26
Control Delay	34.9	9.0	9.3		22.7	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.9	9.0	9.3		22.7	6.0
LOS	C	A	A		C	A
Approach Delay	11.0		9.3		19.3	
Approach LOS	B		A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	27.0	18.0		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.8	14.8		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	13.1	13.1		10.9	10.9
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.9	9.9		8.9	8.9
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	53	432	336		392	25
Fuel Used(gal)	2	19	9		15	3
CO Emissions (g/hr)	142	1298	641		1041	196
NOx Emissions (g/hr)	28	253	125		202	38
VOC Emissions (g/hr)	33	301	149		241	45
Dilemma Vehicles (#)	0	63	69		0	0
Queue Length 50th (ft)	18	67	56		66	0
Queue Length 95th (ft)	#73	98	98		#164	36
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	158	2709	2119		908	563



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.29	0.37		0.58	0.24

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	44.7
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	12.8
Intersection LOS:	B
Intersection Capacity Utilization:	57.8%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	59.3
70th %ile Actuated Cycle:	51.3
50th %ile Actuated Cycle:	48.1
30th %ile Actuated Cycle:	35.1
10th %ile Actuated Cycle:	29.9
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr



Neighborhoods at Lugonia Village  
7: Lugonia Ave & Citrus Plaza Dr

Existing + Project PM (Scenario A)

01/13/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	748	464	298	504	129
Future Volume (veh/h)	62	748	464	298	504	129
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	779	483	310	525	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1721	699	447	687	355
Arrive On Green	0.05	0.51	0.35	0.35	0.24	0.24
Sat Flow, veh/h	1594	3455	2058	1259	2910	1502
Grp Volume(v), veh/h	65	779	413	380	525	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1545	1455	1502
Q Serve(g_s), s	1.8	6.5	9.2	9.3	7.4	3.3
Cycle Q Clear(g_c), s	1.8	6.5	9.2	9.3	7.4	3.3
Prop In Lane	1.00			0.81	1.00	1.00
Lane Grp Cap(c), veh/h	75	1721	597	548	687	355
V/C Ratio(X)	0.86	0.45	0.69	0.69	0.76	0.38
Avail Cap(c_a), veh/h	152	2735	1023	939	874	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	6.8	12.1	12.1	15.6	14.1
Incr Delay (d2), s/veh	23.8	0.2	1.4	1.6	3.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	2.7	2.5	2.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	7.0	13.5	13.7	18.7	14.7
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		844	793		659	
Approach Delay, s/veh		9.9	13.6		17.9	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.8		15.2	6.9	21.9
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.5		9.4	3.8	11.3
Green Ext Time (p_c), s		5.5		1.0	0.0	4.3

Intersection Summary

HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↘	
Traffic Volume (vph)	0	1233	711	0	4	32
Future Volume (vph)	0	1233	711	0	4	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.879	
Flt Protected					0.995	
Satd. Flow (prot)	0	4818	3353	0	1543	0
Flt Permitted					0.995	
Satd. Flow (perm)	0	4818	3353	0	1543	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1340	773	0	4	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1340	773	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.1%
ICU Level of Service	A
Analysis Period (min)	15

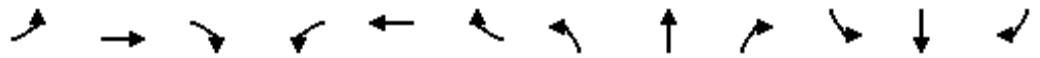


Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑	
Traffic Vol, veh/h	0	1233	711	0	4	32
Future Vol, veh/h	0	1233	711	0	4	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1340	773	0	4	35
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	1309	387
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	180	611
Stage 1	0	-	-	0	405	-
Stage 2	0	-	-	0	518	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	180	611
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	518	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	12.1			
HCM LOS						B
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	543			
HCM Lane V/C Ratio	-	-	0.072			
HCM Control Delay (s)	-	-	12.1			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.2			

Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	965	162	40	510	21	169	7	58	8	5	32
Future Volume (vph)	110	965	162	40	510	21	169	7	58	8	5	32
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Fr <sub>t</sub>			0.850		0.994			0.967			0.904	
Fl <sub>t</sub> Protected	0.950			0.950				0.965			0.991	
Satd. Flow (prot)	1676	3353	1485	1568	3333	0	0	1647	0	0	1581	0
Fl <sub>t</sub> Permitted	0.432			0.950				0.755			0.937	
Satd. Flow (perm)	762	3353	1448	1568	3333	0	0	1288	0	0	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		10			20			35	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	120	1060	178	44	560	23	186	8	64	9	5	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1060	178	44	583	0	0	258	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		22.5	22.5	
Total Split (s)	41.0	41.0	41.0	15.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	51.3%	51.3%	51.3%	18.8%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	2	2	2				0	0		0	0	
Act Effct Green (s)	28.9	28.9	28.9	10.9	36.3			18.5			18.5	
Actuated g/C Ratio	0.44	0.44	0.44	0.17	0.55			0.28			0.28	
v/c Ratio	0.36	0.72	0.24	0.17	0.31			0.68			0.11	
Control Delay	17.8	19.1	3.4	32.6	7.4			35.1			12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	17.8	19.1	3.4	32.6	7.4			35.1			12.6	
LOS	B	B	A	C	A			D			B	
Approach Delay		16.9			9.1			35.1			12.6	
Approach LOS		B			A			D			B	
90th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
90th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
70th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	35.1	35.1	35.1	10.0	50.1		19.5	19.5		19.5	19.5	
50th %ile Term Code	Gap	Gap	Gap	Max	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	22.0	22.0	22.0	0.0	22.0		15.0	15.0		15.0	15.0	
30th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
10th %ile Green (s)	16.7	16.7	16.7	0.0	16.7		15.0	15.0		15.0	15.0	
10th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
Stops (vph)	68	716	17	36	229			172			17	
Fuel Used(gal)	1	12	1	1	4			5			0	
CO Emissions (g/hr)	90	873	56	44	262			344			24	
NOx Emissions (g/hr)	18	170	11	9	51			67			5	
VOC Emissions (g/hr)	21	202	13	10	61			80			5	
Dilemma Vehicles (#)	0	62	0	0	29			15			0	
Queue Length 50th (ft)	38	217	0	20	58			110			5	
Queue Length 95th (ft)	81	288	33	50	83			#234			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	452	1988	931	260	2605			430			507	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.27	0.53	0.19	0.17	0.22			0.60			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	65.5
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	16.8
Intersection LOS:	B
Intersection Capacity Utilization:	69.5%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	80
70th %ile Actuated Cycle:	80
50th %ile Actuated Cycle:	79.4
30th %ile Actuated Cycle:	46.8
10th %ile Actuated Cycle:	41.5
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



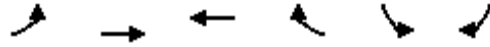
Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	965	162	40	510	21	169	7	58	8	5	32
Future Volume (veh/h)	110	965	162	40	510	21	169	7	58	8	5	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1758	1660	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	120	1060	178	44	560	23	186	8	64	9	5	35
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3	3	2	2	2	2	2	2	2	2
Cap, veh/h	475	1451	640	136	1971	81	342	21	87	107	72	274
Arrive On Green	0.43	0.43	0.43	0.09	0.60	0.60	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	832	3367	1486	1581	3296	135	995	87	357	157	295	1130
Grp Volume(v), veh/h	120	1060	178	44	286	297	258	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	832	1683	1486	1581	1683	1748	1438	0	0	1583	0	0
Q Serve(g_s), s	5.9	16.1	4.8	1.6	5.1	5.1	8.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.9	16.1	4.8	1.6	5.1	5.1	10.1	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.72		0.25	0.18		0.71
Lane Grp Cap(c), veh/h	475	1451	640	136	1007	1045	450	0	0	453	0	0
V/C Ratio(X)	0.25	0.73	0.28	0.32	0.28	0.28	0.57	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	600	1954	863	257	1388	1440	554	0	0	564	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	14.5	11.3	26.4	6.0	6.0	21.3	0.0	0.0	18.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.2	1.4	0.2	0.1	1.2	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(50%),veh/ln	1.0	5.3	1.4	0.6	1.3	1.4	3.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	15.5	11.6	27.8	6.1	6.1	22.5	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		1358			627			258			49	
Approach Delay, s/veh		14.7			7.7			22.5			18.3	
Approach LOS		B			A			C			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.3	31.8		19.4		42.1		19.4				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	10.0	35.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.6	18.1		3.5		7.1		12.1				
Green Ext Time (p_c), s	0.0	8.4		0.2		3.8		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	90	941	540	9	4	31
Future Volume (vph)	90	941	540	9	4	31
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.880	
Flt Protected	0.950				0.995	
Satd. Flow (prot)	1583	3353	1761	0	1545	0
Flt Permitted	0.950				0.995	
Satd. Flow (perm)	1583	3353	1761	0	1545	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	97	1012	581	10	4	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	1012	591	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	941	540	9	4	31
Future Vol, veh/h	90	941	540	9	4	31
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	1012	581	10	4	33

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	592	0	-	0	1287 587
Stage 1	-	-	-	-	587 -
Stage 2	-	-	-	-	700 -
Critical Hdwy	4.13	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.219	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	982	-	-	-	168 509
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	455 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	981	-	-	-	151 509
Mov Cap-2 Maneuver	-	-	-	-	151 -
Stage 1	-	-	-	-	500 -
Stage 2	-	-	-	-	455 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	981	-	-	-	400
HCM Lane V/C Ratio	0.099	-	-	-	0.094
HCM Control Delay (s)	9.1	-	-	-	14.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	0	0	23	0	2	0	14	53	2	7	0
Future Volume (vph)	0	0	0	23	0	2	0	14	53	2	7	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Flt					0.988			0.893				
Flt Protected					0.957						0.988	
Satd. Flow (prot)	0	1765	0	0	1685	0	0	1591	0	0	1761	0
Flt Permitted					0.957						0.988	
Satd. Flow (perm)	0	1765	0	0	1685	0	0	1591	0	0	1761	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		331			965			1320			300	
Travel Time (s)		7.5			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	30	0	3	0	18	69	3	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	33	0	0	87	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.2%
Analysis Period (min)	15
	ICU Level of Service A



Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	23	0	2	0	14	53	2	7	0
Future Vol, veh/h	0	0	0	23	0	2	0	14	53	2	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	0	0	30	0	3	0	18	69	3	9	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	1	0	0	-	64	1	107	63	-
Stage 1	-	-	-	-	-	-	-	1	-	62	62	-
Stage 2	-	-	-	-	-	-	-	63	-	45	1	-
Critical Hdwy	4.12	-	-	4.11	-	-	-	6.51	6.21	7.11	6.51	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	-	4.009	3.309	3.509	4.009	-
Pot Cap-1 Maneuver	1619	-	-	1628	-	-	0	829	1087	875	830	0
Stage 1	-	-	-	-	-	-	0	897	-	952	845	0
Stage 2	-	-	-	-	-	-	0	844	-	971	897	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1619	-	-	1628	-	-	-	814	1087	795	815	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	814	-	795	815	-
Stage 1	-	-	-	-	-	-	-	897	-	952	830	-
Stage 2	-	-	-	-	-	-	-	829	-	891	897	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			6.7			8.9			9.5		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1016	1619	-	-	1628	-	-	810
HCM Lane V/C Ratio	0.086	-	-	-	0.018	-	-	0.014
HCM Control Delay (s)	8.9	0	-	-	7.3	0	-	9.5
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Neighborhoods at Lugonia Village  
12: Texas St & Pennsylvania Ave

Existing + Project PM (Scenario A)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	17	39	11	68	16	24	7	269	89	26	190	18
Future Volume (vph)	17	39	11	68	16	24	7	269	89	26	190	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.970			0.967			0.990	
Flt Protected		0.987			0.969			0.999			0.995	
Satd. Flow (prot)	0	1688	0	0	1675	0	0	1720	0	0	1756	0
Flt Permitted		0.987			0.969			0.999			0.995	
Satd. Flow (perm)	0	1688	0	0	1675	0	0	1720	0	0	1756	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	41	12	72	17	25	7	283	94	27	200	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	114	0	0	384	0	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary





















Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.8%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	39	11	68	16	24	7	269	89	26	190	18
Future Vol, veh/h	17	39	11	68	16	24	7	269	89	26	190	18
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
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	18	41	12	72	17	25	7	283	94	27	200	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	9.8	12.3	10.3
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	63%	11%
Vol Thru, %	74%	58%	15%	81%
Vol Right, %	24%	16%	22%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	365	67	108	234
LT Vol	7	17	68	26
Through Vol	269	39	16	190
RT Vol	89	11	24	18
Lane Flow Rate	384	71	114	246
Geometry Grp	1	1	1	1
Degree of Util (X)	0.496	0.11	0.176	0.331
Departure Headway (Hd)	4.651	5.609	5.563	4.836
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	768	642	648	734
Service Time	2.729	3.614	3.566	2.924
HCM Lane V/C Ratio	0.5	0.111	0.176	0.335
HCM Control Delay	12.3	9.3	9.8	10.3
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.8	0.4	0.6	1.4

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	780	93	86	402	12	105	259	143	18	222	40
Future Volume (vph)	72	780	93	86	402	12	105	259	143	18	222	40
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3341	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.780			0.959	
Satd. Flow (perm)	1599	3332	0	1583	3341	0	0	1390	1515	0	1709	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		426			523			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	821	98	91	423	13	111	273	151	19	234	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	919	0	91	436	0	0	384	151	0	253	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.8	26.3		8.9	26.2		26.1	26.1	26.1	26.1	26.1	26.1
Actuated g/C Ratio	0.12	0.36		0.12	0.36		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.39	0.76		0.47	0.36		0.77	0.25	0.41	0.07		
Control Delay	42.3	26.7		45.4	20.1		34.7	11.4	21.9	1.6		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	42.3	26.7		45.4	20.1		34.7	11.4	21.9	1.6		
LOS	D	C		D	C		C	B	C	A		
Approach Delay		27.9			24.5		28.1		19.0			
Approach LOS		C			C		C		B			
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.3	29.3		9.3	29.3		29.2	29.2	29.2	29.2	29.2	29.2
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.5	23.1		8.1	23.7		21.8	21.8	21.8	21.8	21.8	21.8
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.7		0.0	13.7		12.4	12.4	12.4	12.4	12.4	12.4
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	64	702		75	276		299	48	163	2		
Fuel Used(gal)	2	16		2	5		7	1	5	0		
CO Emissions (g/hr)	112	1131		118	373		501	102	339	28		
NOx Emissions (g/hr)	22	220		23	73		98	20	66	5		
VOC Emissions (g/hr)	26	262		27	86		116	24	78	6		
Dilemma Vehicles (#)	0	51		0	20		21	0	12	0		
Queue Length 50th (ft)	37	212		45	84		172	25	96	0		
Queue Length 95th (ft)	85	310		#107	135		295	68	166	7		
Internal Link Dist (ft)		346			443		591		1254			
Turn Bay Length (ft)	105			100				50				50
Base Capacity (vph)	247	1676		228	1638		739	841	908	841		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	0.55		0.40	0.27			0.52	0.18		0.28	0.05

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	72.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	26.1
Intersection LOS:	C
Intersection Capacity Utilization:	80.8%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	90
50th %ile Actuated Cycle:	81.9
30th %ile Actuated Cycle:	67.1
10th %ile Actuated Cycle:	35.5
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 13: Texas St & Lugonia Ave



Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing + Project PM (Scenario A)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	780	93	86	402	12	105	259	143	18	222	40
Future Volume (veh/h)	72	780	93	86	402	12	105	259	143	18	222	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	76	821	98	91	423	13	111	273	151	19	234	42
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	2	2	1	1	1	1	1	1	1
Cap, veh/h	95	992	118	113	1124	34	58	97	648	48	405	648
Arrive On Green	0.06	0.33	0.33	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3053	364	1594	3335	102	0	226	1514	0	946	1514
Grp Volume(v), veh/h	76	456	463	91	213	223	384	0	151	253	0	42
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1754	226	0	1514	946	0	1514
Q Serve(g_s), s	3.7	19.9	19.9	4.5	7.7	7.7	0.0	0.0	5.1	0.0	0.0	1.3
Cycle Q Clear(g_c), s	3.7	19.9	19.9	4.5	7.7	7.7	34.3	0.0	5.1	34.3	0.0	1.3
Prop In Lane	1.00		0.21	1.00		0.06	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	95	552	559	113	567	591	155	0	648	453	0	648
V/C Ratio(X)	0.80	0.83	0.83	0.80	0.38	0.38	2.48	0.00	0.23	0.56	0.00	0.06
Avail Cap(c_a), veh/h	200	684	693	185	664	691	155	0	648	453	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	25.0	25.0	36.7	20.2	20.2	20.0	0.0	14.6	17.4	0.0	13.5
Incr Delay (d2), s/veh	14.4	6.9	6.8	12.4	0.4	0.4	685.3	0.0	0.2	1.5	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(50%),veh/ln	1.8	8.5	8.6	2.1	2.9	3.0	31.1	0.0	1.6	3.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	31.8	31.8	49.1	20.6	20.6	705.2	0.0	14.7	19.0	0.0	13.5
LnGrp LOS	D	C	C	D	C	C	F	A	B	B	A	B
Approach Vol, veh/h		995			527			535				295
Approach Delay, s/veh		33.3			25.5			510.4				18.2
Approach LOS		C			C			F				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.8		39.0	9.4	31.7		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.9		36.3	5.7	9.7		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	138.2
HCM 6th LOS	F

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# **Appendix G: Existing Year With Project (Scenario B) AM Peak Hour Analysis Worksheets**



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

01/13/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	274	44	65	315	244	28	4	35	195	175	150
Future Volume (vph)	59	274	44	65	315	244	28	4	35	195	175	150
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1553	3196	1443	1583	1682	1485	1568	1538	1485	1583	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			255			113			167
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	7%	6%	2%	7%	3%	3%	17%	3%	2%	2%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	66	304	49	72	350	271	31	4	39	217	194	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	304	49	72	350	271	31	4	39	217	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.5	38.5	22.5	38.5	38.5	10.7	37.0	22.5	22.0	48.3	
Total Split (%)	18.8%	32.1%	32.1%	18.8%	32.1%	32.1%	8.9%	30.8%	18.8%	18.3%	40.3%	
Maximum Green (s)	17.8	32.5	32.5	17.8	32.5	32.5	6.0	31.0	17.8	17.3	42.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	8.9	20.4	20.4	9.2	20.7	20.7	6.5	6.4	11.0	18.6	15.6	
Actuated g/C Ratio	0.14	0.32	0.32	0.15	0.33	0.33	0.10	0.10	0.17	0.29	0.25	
v/c Ratio	0.30	0.29	0.09	0.31	0.64	0.41	0.19	0.03	0.11	0.47	0.41	
Control Delay	34.1	18.4	0.3	33.9	26.0	5.6	37.5	35.8	0.7	28.1	15.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	18.4	0.3	33.9	26.0	5.6	37.5	35.8	0.7	28.1	15.5	
LOS	C	B	A	C	C	A	D	D	A	C	B	
Approach Delay		18.8			18.8			18.0			20.2	
Approach LOS		B			B			B			C	
90th %ile Green (s)	12.3	32.1	32.1	12.7	32.5	32.5	6.0	6.5	12.7	17.3	17.8	
90th %ile Term Code	Gap	Hold	Hold	Gap	Max	Max	Max	Gap	Gap	Max	Hold	
70th %ile Green (s)	10.0	25.0	25.0	10.3	25.3	25.3	6.0	0.0	10.3	24.3	12.3	
70th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Max	Skip	Gap	Hold	Gap	
50th %ile Green (s)	8.6	20.2	20.2	8.9	20.5	20.5	0.0	0.0	8.9	17.3	16.0	
50th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Max	Hold	
30th %ile Green (s)	7.2	16.1	16.1	7.4	16.3	16.3	0.0	0.0	7.4	16.7	15.4	
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Skip	Skip	Gap	Gap	Hold	
10th %ile Green (s)	0.0	10.5	10.5	0.0	10.5	10.5	0.0	0.0	0.0	12.8	11.5	
10th %ile Term Code	Skip	Hold	Hold	Skip	Gap	Gap	Skip	Skip	Skip	Gap	Hold	
Stops (vph)	51	181	0	56	243	32	26	7	0	145	140	
Fuel Used(gal)	1	5	0	1	5	2	1	0	1	4	6	
CO Emissions (g/hr)	86	315	28	79	334	127	66	11	47	293	391	
NOx Emissions (g/hr)	17	61	5	15	65	25	13	2	9	57	76	
VOC Emissions (g/hr)	20	73	6	18	77	30	15	3	11	68	91	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	23	43	0	25	109	4	11	1	0	67	30	
Queue Length 95th (ft)	74	96	0	78	248	57	46	13	0	#216	92	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	486	1828	892	495	962	958	165	839	581	511	2203	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

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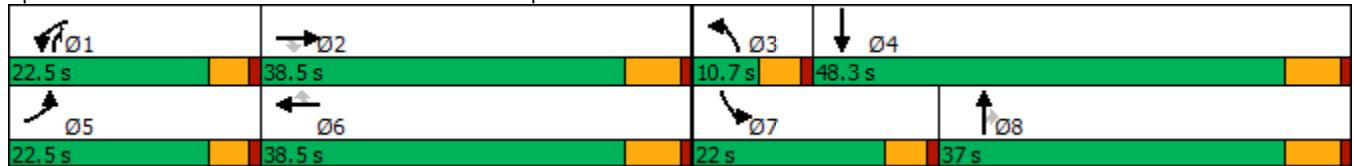


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.17	0.05	0.15	0.36	0.28	0.19	0.00	0.07	0.42	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	63.3
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	19.2
Intersection LOS:	B
Intersection Capacity Utilization:	55.7%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	75
50th %ile Actuated Cycle:	61.8
30th %ile Actuated Cycle:	55.6
10th %ile Actuated Cycle:	34
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	274	44	65	315	244	28	4	35	195	175	150
Future Volume (veh/h)	59	274	44	65	315	244	28	4	35	195	175	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1647	1702	1716	1673	1702	1758	1660	1561	1758	1673	1772	1744
Adj Flow Rate, veh/h	66	304	49	72	350	271	31	4	39	217	194	167
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, %	4	7	6	2	7	3	3	17	3	2	2	4
Cap, veh/h	138	893	402	140	470	412	54	137	262	272	396	322
Arrive On Green	0.09	0.28	0.28	0.09	0.28	0.28	0.03	0.09	0.09	0.17	0.22	0.22
Sat Flow, veh/h	1569	3233	1454	1594	1702	1490	1581	1561	1490	1594	1763	1434
Grp Volume(v), veh/h	66	304	49	72	350	271	31	4	39	217	185	176
Grp Sat Flow(s),veh/h/ln	1569	1617	1454	1594	1702	1490	1581	1561	1490	1594	1683	1514
Q Serve(g_s), s	2.3	4.3	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Cycle Q Clear(g_c), s	2.3	4.3	1.4	2.4	10.6	9.1	1.1	0.1	1.3	7.4	5.4	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.95
Lane Grp Cap(c), veh/h	138	893	402	140	470	412	54	137	262	272	378	340
V/C Ratio(X)	0.48	0.34	0.12	0.51	0.74	0.66	0.58	0.03	0.15	0.80	0.49	0.52
Avail Cap(c_a), veh/h	492	1852	833	500	975	853	167	853	945	486	1255	1128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.4	15.4	24.7	18.7	18.2	27.0	23.7	19.8	22.6	19.2	19.3
Incr Delay (d2), s/veh	2.5	0.2	0.1	2.9	2.4	1.8	9.3	0.1	0.3	5.4	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.4	1.0	4.1	2.9	0.5	0.0	0.4	3.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	16.6	15.5	27.6	21.1	20.0	36.3	23.7	20.0	28.0	20.2	20.5
LnGrp LOS	C	B	B	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		419			693			74			578	
Approach Delay, s/veh		18.2			21.3			27.1			23.2	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	21.7	6.6	18.7	9.7	21.7	14.4	11.0				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.5	* 6	42.3	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	4.4	6.3	3.1	7.8	4.3	12.6	9.4	3.3				
Green Ext Time (p_c), s	0.1	2.2	0.0	2.4	0.1	3.0	0.4	0.1				

Intersection Summary

HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	288	104	46	506	273	35	279	49	126	17	83
Future Volume (vph)	112	288	104	46	506	273	35	279	49	126	17	83
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt			0.850			0.850		0.978				0.876
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2730	1731	1471	1509	1748	1500	1553	3137	0	1538	1383	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2730	1731	1471	1509	1748	1500	1553	3137	0	1538	1383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			286			16			97
Link Speed (mph)		30			45			35				30
Link Distance (ft)		720			275			1347				978
Travel Time (s)		16.4			4.2			26.2				22.2
Confl. Peds. (#/hr)									1			
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	4%	4%	7%	3%	2%	4%	7%	3%	5%	9%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	130	335	121	53	588	317	41	324	57	147	20	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	335	121	53	588	317	41	381	0	147	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	14.7	50.8	50.8	15.2	51.3	51.3	14.7	35.0		19.0	39.3	
Total Split (%)	12.3%	42.3%	42.3%	12.7%	42.8%	42.8%	12.3%	29.2%		15.8%	32.8%	
Maximum Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		1			0	
Act Effct Green (s)	10.2	43.3	43.3	10.4	39.8	39.8	10.2	18.4		13.4	28.5	
Actuated g/C Ratio	0.10	0.42	0.42	0.10	0.38	0.38	0.10	0.18		0.13	0.28	
v/c Ratio	0.49	0.46	0.18	0.35	0.88	0.42	0.27	0.67		0.74	0.26	
Control Delay	54.4	26.9	5.0	55.3	46.1	5.9	53.2	44.8		68.4	11.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.4	26.9	5.0	55.3	46.1	5.9	53.2	44.8		68.4	11.6	
LOS	D	C	A	E	D	A	D	D		E	B	
Approach Delay		28.5			33.3			45.6			43.2	
Approach LOS		C			C			D			D	
90th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	29.0		14.3	33.3	
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Ped		Max	Hold	
70th %ile Green (s)	10.0	44.8	44.8	10.5	45.3	45.3	10.0	20.0		14.3	24.3	
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	10.0	44.3	44.3	10.0	44.3	44.3	10.0	17.8		14.3	22.1	
50th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Max	Gap		Max	Hold	
30th %ile Green (s)	10.0	37.5	37.5	10.0	37.5	37.5	0.0	15.5		14.1	34.3	
30th %ile Term Code	Max	Hold	Hold	Min	Gap	Gap	Skip	Gap		Gap	Hold	
10th %ile Green (s)	10.0	42.3	42.3	0.0	27.6	27.6	0.0	11.7		10.1	26.5	
10th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	102	203	12	43	427	34	32	279		107	22	
Fuel Used(gal)	2	4	1	1	13	2	1	8		3	1	
CO Emissions (g/hr)	170	302	53	90	888	153	67	579		231	79	
NOx Emissions (g/hr)	33	59	10	18	173	30	13	113		45	15	
VOC Emissions (g/hr)	39	70	12	21	206	35	16	134		54	18	
Dilemma Vehicles (#)	0	0	0	0	21	0	0	12		0	0	
Queue Length 50th (ft)	44	166	0	35	354	13	27	127		99	11	
Queue Length 95th (ft)	80	275	34	79	#585	65	65	169		#207	52	
Internal Link Dist (ft)		640			195			1267			898	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	268	762	715	155	778	826	152	905		216	520	

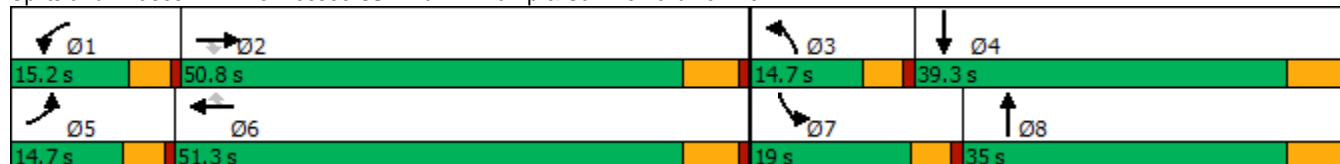


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.44	0.17	0.34	0.76	0.38	0.27	0.42		0.68	0.23	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	103.6
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.88
Intersection Signal Delay:	35.5
Intersection LOS:	D
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	120
70th %ile Actuated Cycle:	111
50th %ile Actuated Cycle:	107.8
30th %ile Actuated Cycle:	98.5
10th %ile Actuated Cycle:	80.8
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project AM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↖	↑	↗	↖	↕↔		↖	↗	
Traffic Volume (veh/h)	112	288	104	46	506	273	35	279	49	126	17	83
Future Volume (veh/h)	112	288	104	46	506	273	35	279	49	126	17	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1500	1744	1744	1607	1758	1772	1647	1702	1758	1634	1674	1589
Adj Flow Rate, veh/h	130	335	121	53	588	317	41	324	57	147	20	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	4	4	7	3	2	4	7	3	5	9	15
Cap, veh/h	298	708	600	125	669	571	112	440	77	176	50	243
Arrive On Green	0.11	0.41	0.41	0.08	0.38	0.38	0.07	0.16	0.16	0.11	0.20	0.20
Sat Flow, veh/h	2772	1744	1478	1531	1758	1502	1569	2752	479	1556	249	1207
Grp Volume(v), veh/h	130	335	121	53	588	317	41	189	192	147	0	117
Grp Sat Flow(s),veh/h/ln	1386	1744	1478	1531	1758	1502	1569	1617	1614	1556	0	1456
Q Serve(g_s), s	3.9	12.6	4.7	2.9	27.9	14.8	2.2	9.9	10.2	8.3	0.0	6.2
Cycle Q Clear(g_c), s	3.9	12.6	4.7	2.9	27.9	14.8	2.2	9.9	10.2	8.3	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.83
Lane Grp Cap(c), veh/h	298	708	600	125	669	571	112	258	258	176	0	294
V/C Ratio(X)	0.44	0.47	0.20	0.42	0.88	0.55	0.37	0.73	0.75	0.83	0.00	0.40
Avail Cap(c_a), veh/h	310	873	740	180	890	760	175	524	523	249	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	19.5	17.2	39.1	25.8	21.8	39.6	35.8	35.8	38.8	0.0	31.0
Incr Delay (d2), s/veh	1.0	0.5	0.2	2.3	8.0	0.8	2.0	4.0	4.2	15.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.0	1.6	1.1	12.0	5.1	0.9	4.1	4.2	3.9	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.0	17.4	41.3	33.8	22.6	41.6	39.7	40.1	54.1	0.0	31.9
LnGrp LOS	D	C	B	D	C	C	D	D	D	D	A	C
Approach Vol, veh/h		586			958			422				264
Approach Delay, s/veh		23.6			30.5			40.1				44.3
Approach LOS		C			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	42.3	11.1	24.0	14.3	40.0	14.8	20.3				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 11	44.8	* 10	33.3	* 10	45.3	* 14	29.0				
Max Q Clear Time (g_c+I1), s	4.9	14.6	4.2	8.2	5.9	29.9	10.3	12.2				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.7	0.1	4.2	0.1	2.0				

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Neighborhoods at Lugonia Village  
3: Tennessee St & Pennsylvania Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	7	356	16	3	164
Future Volume (vph)	27	7	356	16	3	164
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971		0.994			
Flt Protected	0.962				0.950	
Satd. Flow (prot)	1648	0	1754	0	1676	1765
Flt Permitted	0.962				0.950	
Satd. Flow (perm)	1648	0	1754	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	1715		1348			1347
Travel Time (s)	39.0		26.3			26.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	8	387	17	3	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	0	404	0	3	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.8%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	27	7	356	16	3	164
Future Vol, veh/h	27	7	356	16	3	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	8	387	17	3	178

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	580	396	0	0	404
Stage 1	396	-	-	-	-
Stage 2	184	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	477	653	-	-	1155
Stage 1	680	-	-	-	-
Stage 2	848	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	476	653	-	-	1155
Mov Cap-2 Maneuver	476	-	-	-	-
Stage 1	680	-	-	-	-
Stage 2	845	-	-	-	-
























Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	504	1155
HCM Lane V/C Ratio	-	-	0.073	0.003
HCM Control Delay (s)	-	-	12.7	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	179	125	177	393	102	161	233	114	58	116	17
Future Volume (vph)	37	179	125	177	393	102	161	233	114	58	116	17
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		1.00				0.99			
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1404	3353	1500	1538	1679	0	1553	1698	1471	1553	1698	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1404	3353	1475	1538	1679	0	1553	1698	1452	1553	1698	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		16				133			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1348	
Travel Time (s)		5.9			8.2			12.9			26.3	
Confl. Peds. (#/hr)			5			1			1			
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	15%	2%	2%	5%	3%	5%	4%	6%	4%	4%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	40	192	134	190	423	110	173	251	123	62	125	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	192	134	190	533	0	173	251	123	62	125	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.6	33.0	33.0	12.0	35.4		13.0	32.4	32.4	12.6	32.0	32.0
Total Split (%)	10.7%	36.7%	36.7%	13.3%	39.3%		14.4%	36.0%	36.0%	14.0%	35.6%	35.6%
Maximum Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.4	27.4	8.1	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		5	5		1			1	1		0	0
Act Effct Green (s)	5.7	19.2	19.2	8.4	27.8		9.6	18.8	18.8	7.8	14.6	14.6
Actuated g/C Ratio	0.08	0.28	0.28	0.12	0.40		0.14	0.27	0.27	0.11	0.21	0.21
v/c Ratio	0.34	0.21	0.26	1.02	0.77		0.80	0.54	0.25	0.35	0.35	0.04
Control Delay	47.4	20.4	5.9	112.6	30.9		65.8	29.7	5.7	41.2	28.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	20.4	5.9	112.6	30.9		65.8	29.7	5.7	41.2	28.1	0.2
LOS	D	C	A	F	C		E	C	A	D	C	A
Approach Delay		18.0			52.4			35.7			29.6	
Approach LOS		B			D			D			C	
90th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	27.0	27.0	8.1	26.6	26.6
90th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Ped	Ped	Max	Hold	Hold
70th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	19.6	19.6	8.1	19.2	19.2
70th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.1	28.0	28.0	7.5	30.4		8.5	16.7	16.7	8.1	16.3	16.3
50th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Max	Hold	Hold
30th %ile Green (s)	0.0	12.2	12.2	7.5	24.2		8.5	21.5	21.5	0.0	8.5	8.5
30th %ile Term Code	Skip	Hold	Hold	Max	Gap		Max	Hold	Hold	Skip	Gap	Gap
10th %ile Green (s)	0.0	6.3	6.3	7.5	18.3		8.9	8.4	8.4	0.0	0.0	0.0
10th %ile Term Code	Skip	Gap	Gap	Max	Hold		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	33	116	18	107	365		109	181	15	52	86	0
Fuel Used(gal)	1	3	1	6	8		5	5	1	1	2	0
CO Emissions (g/hr)	63	204	74	398	573		328	368	102	101	171	12
NOx Emissions (g/hr)	12	40	14	77	111		64	72	20	20	33	2
VOC Emissions (g/hr)	15	47	17	92	133		76	85	24	23	40	3
Dilemma Vehicles (#)	0	9	0	0	30		0	12	0	0	5	0
Queue Length 50th (ft)	20	33	0	~123	225		~94	116	0	29	53	0
Queue Length 95th (ft)	#66	67	40	#282	#481		#244	188	34	74	99	0
Internal Link Dist (ft)		269			341			583			1268	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	116	1523	743	187	836		217	755	719	204	744	731

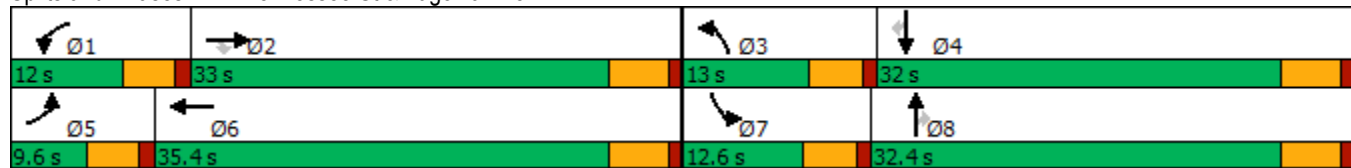


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.13	0.18	1.02	0.64		0.80	0.33	0.17	0.30	0.17	0.02

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	68.7
Natural Cycle:	95
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	38.1
Intersection LOS:	D
Intersection Capacity Utilization:	65.8%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	89.6
70th %ile Actuated Cycle:	82.2
50th %ile Actuated Cycle:	79.3
30th %ile Actuated Cycle:	55.7
10th %ile Actuated Cycle:	36.7
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

**Splits and Phases:** 4: Tennessee St & Lugonia Ave



Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	179	125	177	393	102	161	233	114	58	116	17
Future Volume (veh/h)	37	179	125	177	393	102	161	233	114	58	116	17
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1501	1772	1772	1634	1758	1730	1647	1716	1744	1647	1716	1772
Adj Flow Rate, veh/h	40	192	134	190	423	110	173	251	123	62	125	18
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, %	15	2	2	5	3	5	4	6	4	4	6	2
Cap, veh/h	59	957	425	202	502	131	209	347	298	86	212	185
Arrive On Green	0.04	0.28	0.28	0.13	0.37	0.37	0.13	0.20	0.20	0.05	0.12	0.12
Sat Flow, veh/h	1430	3367	1494	1556	1345	350	1569	1716	1476	1569	1716	1502
Grp Volume(v), veh/h	40	192	134	190	0	533	173	251	123	62	125	18
Grp Sat Flow(s),veh/h/ln	1430	1683	1494	1556	0	1694	1569	1716	1476	1569	1716	1502
Q Serve(g_s), s	1.6	2.5	4.1	7.0	0.0	16.6	6.2	7.9	4.2	2.2	4.0	0.6
Cycle Q Clear(g_c), s	1.6	2.5	4.1	7.0	0.0	16.6	6.2	7.9	4.2	2.2	4.0	0.6
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	957	425	202	0	632	209	347	298	86	212	185
V/C Ratio(X)	0.68	0.20	0.32	0.94	0.00	0.84	0.83	0.72	0.41	0.72	0.59	0.10
Avail Cap(c_a), veh/h	126	1632	724	202	0	892	231	814	700	220	802	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	15.7	16.2	24.9	0.0	16.5	24.4	21.5	20.0	26.9	23.9	22.5
Incr Delay (d2), s/veh	13.1	0.1	0.4	46.5	0.0	5.2	19.8	2.9	0.9	11.0	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	1.3	5.0	0.0	6.3	3.3	3.1	1.4	1.0	1.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	15.8	16.7	71.4	0.0	21.8	44.2	24.4	21.0	37.9	26.6	22.7
LnGrp LOS	D	B	B	E	A	C	D	C	C	D	C	C
Approach Vol, veh/h		366			723			547			205	
Approach Delay, s/veh		18.8			34.8			29.9			29.6	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	21.4	12.2	12.1	6.9	26.6	7.7	16.7				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	7.5	28.0	8.5	27.0	5.1	30.4	8.1	27.4				
Max Q Clear Time (g_c+I1), s	9.0	6.1	8.2	6.0	3.6	18.6	4.2	9.9				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.6	0.0	2.7	0.0	1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											29.6	
HCM 6th LOS											C	

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (vph)	0	0	0	217	5	167	209	445	0	0	332	157
Future Volume (vph)	0	0	0	217	5	167	209	445	0	0	332	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.936						0.941	
Flt Protected					0.973		0.950					
Satd. Flow (prot)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Flt Permitted					0.973		0.950					
Satd. Flow (perm)	0	0	0	0	3050	0	1568	3196	0	0	3089	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					172						167	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		855			1108			612			817	
Travel Time (s)		19.4			25.2			11.9			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	13%	2%	3%	7%	2%	2%	3%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	224	5	172	215	459	0	0	342	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	401	0	215	459	0	0	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				27.0	27.0		31.0	63.0			32.0	
Total Split (%)				30.0%	30.0%		34.4%	70.0%			35.6%	
Maximum Green (s)				21.5	21.5		26.0	57.5			26.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								2				
Act Effct Green (s)					12.6		17.6	66.4			43.8	
Actuated g/C Ratio					0.14		0.20	0.74			0.49	
v/c Ratio					0.70		0.70	0.19			0.35	
Control Delay					27.0		36.4	7.5			12.1	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					27.0		36.4	7.5			12.1	
LOS					C		D	A			B	
Approach Delay					27.0			16.7			12.1	
Approach LOS					C			B			B	
90th %ile Green (s)				18.2	18.2		24.2	60.8			31.6	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				14.5	14.5		20.4	64.5			39.1	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				12.4	12.4		17.6	66.6			44.0	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				10.4	10.4		14.8	68.6			48.8	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				7.5	7.5		10.8	71.5			55.7	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					207		193	251			216	
Fuel Used(gal)					7		4	5			8	
CO Emissions (g/hr)					464		274	317			563	
NOx Emissions (g/hr)					90		53	62			110	
VOC Emissions (g/hr)					108		64	73			130	
Dilemma Vehicles (#)					0		0	29			27	
Queue Length 50th (ft)					64		117	90			66	
Queue Length 95th (ft)					105		188	110			136	
Internal Link Dist (ft)		775			1028			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					859		452	2358			1590	

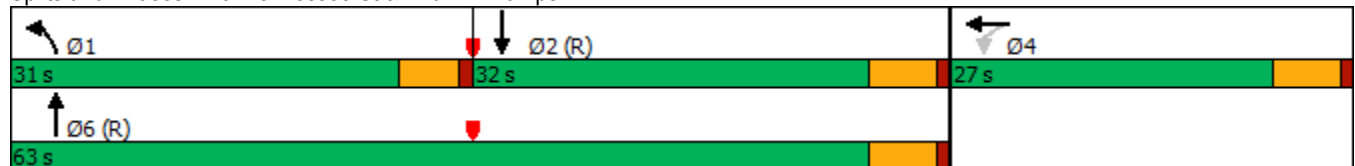




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.48	0.19			0.35	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	46.5 (52%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization	59.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 5: Tennessee St & I-10 WB Ramps



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project AM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (veh/h)	0	0	0	217	5	167	209	445	0	0	332	157
Future Volume (veh/h)	0	0	0	217	5	167	209	445	0	0	332	157
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1772	1617	1772	1660	1702	0	0	1758	1716
Adj Flow Rate, veh/h				224	5	172	215	459	0	0	342	221
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.71
Percent Heavy Veh, %				2	13	2	3	7	0	0	3	6
Cap, veh/h				274	7	238	246	2264	0	0	960	608
Arrive On Green				0.18	0.18	0.18	0.31	1.00	0.00	0.00	0.49	0.49
Sat Flow, veh/h				1540	39	1338	1581	3318	0	0	2049	1243
Grp Volume(v), veh/h				224	0	177	215	459	0	0	290	273
Grp Sat Flow(s),veh/h/ln				1540	0	1377	1581	1617	0	0	1670	1534
Q Serve(g_s), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Cycle Q Clear(g_c), s				12.6	0.0	10.9	11.6	0.0	0.0	0.0	9.7	9.9
Prop In Lane				1.00		0.97	1.00		0.00	0.00		0.81
Lane Grp Cap(c), veh/h				274	0	244	246	2264	0	0	817	751
V/C Ratio(X)				0.82	0.00	0.72	0.88	0.20	0.00	0.00	0.36	0.36
Avail Cap(c_a), veh/h				368	0	329	457	2264	0	0	817	751
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.6	0.0	34.9	30.2	0.0	0.0	0.0	14.2	14.3
Incr Delay (d2), s/veh				10.2	0.0	5.1	8.8	0.2	0.0	0.0	1.2	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
%ile BackOfQ(50%),veh/ln				5.4	0.0	3.9	4.2	0.1	0.0	0.0	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.8	0.0	40.0	39.0	0.2	0.0	0.0	15.4	15.6
LnGrp LOS				D	A	D	D	A	A	A	B	B
Approach Vol, veh/h					401			674			563	
Approach Delay, s/veh					43.3			12.6			15.5	
Approach LOS					D			B			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	49.5		21.5		68.5						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	26.0	26.5		21.5		57.5						
Max Q Clear Time (g_c+I1), s	13.6	11.9		14.6		2.0						
Green Ext Time (p_c), s	0.5	3.0		1.4		3.3						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											21.1	
HCM 6th LOS											C	

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↙	↕↕	
Traffic Volume (vph)	144	144	321	0	0	0	0	510	112	124	425	0
Future Volume (vph)	144	144	321	0	0	0	0	510	112	124	425	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.921						0.973				
Flt Protected		0.988								0.950		
Satd. Flow (prot)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Flt Permitted		0.988								0.950		
Satd. Flow (perm)	0	2980	0	0	0	0	0	3169	0	1553	3353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		316						33				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	7%	3%	2%	2%	2%	2%	5%	5%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	147	147	328	0	0	0	0	520	114	127	434	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	622	0	0	0	0	0	634	0	127	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	31.0	31.0						39.0		20.0	59.0	
Total Split (%)	34.4%	34.4%						43.3%		22.2%	65.6%	
Maximum Green (s)	25.5	25.5						33.5		15.0	53.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								3				
Act Effct Green (s)		16.7						44.7		12.6	62.3	
Actuated g/C Ratio		0.19						0.50		0.14	0.69	
v/c Ratio		0.77						0.40		0.59	0.19	
Control Delay		22.8						16.3		41.9	2.7	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		22.8						16.3		41.9	2.7	
LOS		C						B		D	A	
Approach Delay		22.8						16.3			11.6	
Approach LOS		C						B			B	
90th %ile Green (s)	24.5	24.5						31.9		17.6	54.5	
90th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
70th %ile Green (s)	20.0	20.0						39.4		14.6	59.0	
70th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
50th %ile Green (s)	16.5	16.5						44.9		12.6	62.5	
50th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
30th %ile Green (s)	13.7	13.7						49.8		10.5	65.3	
30th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
10th %ile Green (s)	8.9	8.9						57.6		7.5	70.1	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		283						372		110	109	
Fuel Used(gal)		10						7		2	3	
CO Emissions (g/hr)		711						523		170	205	
NOx Emissions (g/hr)		138						102		33	40	
VOC Emissions (g/hr)		165						121		39	47	
Dilemma Vehicles (#)		0						35		0	8	
Queue Length 50th (ft)		86						106		64	12	
Queue Length 95th (ft)		132						196		93	16	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1070						1602		267	2320	

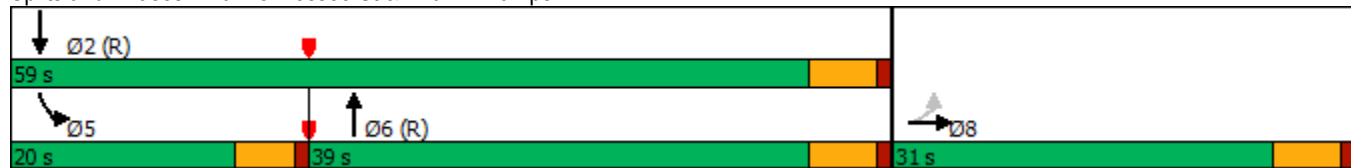


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.58						0.40		0.48	0.19	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	77.6 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	17.1
Intersection LOS:	B
Intersection Capacity Utilization	59.2%
ICU Level of Service	B
Analysis Period (min)	15

















Splits and Phases: 6: Tennessee St & I-10 EB Ramps



Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project AM (Scenario B)

01/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	144	321	0	0	0	0	510	112	124	425	0
Future Volume (veh/h)	144	144	321	0	0	0	0	510	112	124	425	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1730	1702	1758				0	1730	1730	1647	1772	0
Adj Flow Rate, veh/h	147	147	328				0	520	114	127	434	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	7	3				0	5	5	4	2	0
Cap, veh/h	213	213	370				0	1249	273	157	2090	0
Arrive On Green	0.26	0.26	0.26				0.00	0.47	0.47	0.03	0.20	0.00
Sat Flow, veh/h	830	830	1442				0	2769	585	1569	3455	0
Grp Volume(v), veh/h	294	0	328				0	318	316	127	434	0
Grp Sat Flow(s),veh/h/ln	1660	0	1442				0	1643	1624	1569	1683	0
Q Serve(g_s), s	14.4	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Cycle Q Clear(g_c), s	14.4	0.0	19.7				0.0	11.5	11.6	7.2	9.6	0.0
Prop In Lane	0.50		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	426	0	370				0	765	756	157	2090	0
V/C Ratio(X)	0.69	0.00	0.89				0.00	0.42	0.42	0.81	0.21	0.00
Avail Cap(c_a), veh/h	470	0	409				0	765	756	261	2090	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	30.2	0.0	32.2				0.0	15.9	16.0	42.7	17.4	0.0
Incr Delay (d2), s/veh	3.8	0.0	19.0				0.0	1.7	1.7	9.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	8.6				0.0	4.4	4.4	3.3	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	51.1				0.0	17.6	17.7	51.7	17.6	0.0
LnGrp LOS	C	A	D				A	B	B	D	B	A
Approach Vol, veh/h		622						634			561	
Approach Delay, s/veh		43.0						17.6			25.3	
Approach LOS		D						B			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		61.4			14.0	47.4		28.6				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		53.5			15.0	33.5		25.5				
Max Q Clear Time (g_c+I1), s		11.6			9.2	13.6		21.7				
Green Ext Time (p_c), s		3.1			0.1	3.7		1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	195	474	97	146	64
Future Volume (vph)	14	195	474	97	146	64
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.975			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3320	3217	0	2891	1485
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3320	3217	0	2891	1485
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			59			67
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	15	205	499	102	154	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	205	601	0	154	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	46.0	37.0		14.0	14.0
Total Split (%)	15.0%	76.7%	61.7%		23.3%	23.3%
Maximum Green (s)	4.2	39.7	30.7		9.2	9.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)				7.0		
Flash Dont Walk (s)				19.0		
Pedestrian Calls (#/hr)				0		
Act Effct Green (s)	4.3	19.3	18.0		7.3	7.3
Actuated g/C Ratio	0.13	0.57	0.53		0.21	0.21
v/c Ratio	0.07	0.11	0.35		0.25	0.18
Control Delay	17.1	5.4	7.4		13.6	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.1	5.4	7.4		13.6	6.3
LOS	B	A	A		B	A
Approach Delay	6.2		7.4		11.3	
Approach LOS	A		A		B	
90th %ile Green (s)	4.2	27.0	18.0		9.2	9.2
90th %ile Term Code	Max	Hold	Gap		Max	Max
70th %ile Green (s)	0.0	12.3	12.3		7.6	7.6
70th %ile Term Code	Skip	Hold	Gap		Gap	Gap
50th %ile Green (s)	0.0	11.6	11.6		7.0	7.0
50th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
30th %ile Green (s)	0.0	16.7	16.7		6.6	6.6
30th %ile Term Code	Skip	Dwell	Dwell		Gap	Gap
10th %ile Green (s)	0.0	21.5	21.5		0.0	0.0
10th %ile Term Code	Skip	Dwell	Dwell		Skip	Skip
Stops (vph)	16	90	302		108	20
Fuel Used(gal)	0	4	7		4	1
CO Emissions (g/hr)	31	313	500		279	101
NOx Emissions (g/hr)	6	61	97		54	20
VOC Emissions (g/hr)	7	73	116		65	24
Dilemma Vehicles (#)	0	23	63		0	0
Queue Length 50th (ft)	2	9	28		9	0
Queue Length 95th (ft)	17	21	91		38	24
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	202	3213	2921		809	463



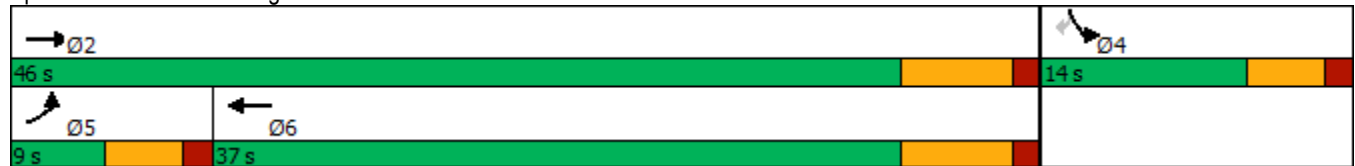


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.06	0.21		0.19	0.14

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	34
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization	31.3%
ICU Level of Service	A
Analysis Period (min)	15
90th %ile Actuated Cycle:	47.3
70th %ile Actuated Cycle:	31
50th %ile Actuated Cycle:	29.7
30th %ile Actuated Cycle:	34.4
10th %ile Actuated Cycle:	27.8

Splits and Phases: 7: Lugonia Ave & Citrus Plaza Dr





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	195	474	97	146	64
Future Volume (veh/h)	14	195	474	97	146	64
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1758	1744	1772	1575	1758
Adj Flow Rate, veh/h	15	205	499	102	154	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	3	4	2	2	3
Cap, veh/h	19	1667	906	184	403	206
Arrive On Green	0.01	0.50	0.33	0.33	0.14	0.14
Sat Flow, veh/h	1594	3428	2830	558	2910	1490
Grp Volume(v), veh/h	15	205	300	301	154	67
Grp Sat Flow(s),veh/h/ln	1594	1670	1657	1643	1455	1490
Q Serve(g_s), s	0.3	1.0	4.5	4.6	1.5	1.2
Cycle Q Clear(g_c), s	0.3	1.0	4.5	4.6	1.5	1.2
Prop In Lane	1.00			0.34	1.00	1.00
Lane Grp Cap(c), veh/h	19	1667	547	543	403	206
V/C Ratio(X)	0.80	0.12	0.55	0.55	0.38	0.32
Avail Cap(c_a), veh/h	219	4332	1661	1648	875	448
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	15.1	4.1	8.4	8.4	12.0	11.9
Incr Delay (d2), s/veh	52.9	0.0	0.9	0.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	1.0	1.0	0.4	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.9	4.1	9.2	9.3	12.6	12.8
LnGrp LOS	E	A	A	A	B	B
Approach Vol, veh/h		220	601		221	
Approach Delay, s/veh		8.5	9.3		12.7	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.6		9.0	5.2	16.4
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 40		* 9.2	* 4.2	* 31
Max Q Clear Time (g_c+I1), s		3.0		3.5	2.3	6.6
Green Ext Time (p_c), s		1.3		0.3	0.0	3.5
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			9.8			
HCM 6th LOS			A			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↘	
Traffic Volume (vph)	0	408	664	0	7	52
Future Volume (vph)	0	408	664	0	7	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.882	
Flt Protected					0.994	
Satd. Flow (prot)	0	4818	3353	0	1547	0
Flt Permitted					0.994	
Satd. Flow (perm)	0	4818	3353	0	1547	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	443	722	0	8	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	443	722	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↓	
Traffic Vol, veh/h	0	408	664	0	7	52
Future Vol, veh/h	0	408	664	0	7	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	443	722	0	8	57
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	899	361
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.67	3.32
Pot Cap-1 Maneuver	0	-	-	0	311	636
Stage 1	0	-	-	0	430	-
Stage 2	0	-	-	0	797	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	311	636
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	797	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	11.9			
HCM LOS						B
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	586			
HCM Lane V/C Ratio	-	-	0.109			
HCM Control Delay (s)	-	-	11.9			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.4			

Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	298	84	40	524	6	88	2	26	13	7	52
Future Volume (vph)	33	298	84	40	524	6	88	2	26	13	7	52
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98									
Frt			0.850		0.998			0.969			0.903	
Flt Protected	0.950			0.950				0.964			0.991	
Satd. Flow (prot)	1676	3257	1515	1583	3346	0	0	1608	0	0	1579	0
Flt Permitted	0.424			0.950				0.727			0.934	
Satd. Flow (perm)	748	3257	1481	1583	3346	0	0	1213	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95		3			18			57	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			1									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	5%	1%	2%	2%	2%	3%	2%	10%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	339	95	45	595	7	100	2	30	14	8	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	339	95	45	602	0	0	132	0	0	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		23.0	23.0	
Total Split (s)	39.0	39.0	39.0	17.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	48.8%	48.8%	48.8%	21.3%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	33.7	33.7	33.7	12.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1	1				0	0		0	0	
Act Effct Green (s)	24.1	24.1	24.1	11.4	28.6			11.8			17.1	
Actuated g/C Ratio	0.59	0.59	0.59	0.28	0.70			0.29			0.42	
v/c Ratio	0.08	0.18	0.10	0.10	0.26			0.37			0.12	
Control Delay	14.6	11.6	4.8	17.9	6.0			15.7			7.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	14.6	11.6	4.8	17.9	6.0			15.7			7.6	
LOS	B	B	A	B	A			B			A	
Approach Delay		10.5			6.8			15.7			7.6	
Approach LOS		B			A			B			A	
90th %ile Green (s)	15.7	15.7	15.7	10.0	30.7		15.0	15.0		15.0	15.0	
90th %ile Term Code	Gap	Gap	Gap	Min	Hold		Hold	Hold		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	10.0	30.0		15.0	15.0		15.0	15.0	
70th %ile Term Code	Min	Min	Min	Min	Hold		Hold	Hold		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		15.0	15.0		15.0	15.0	
50th %ile Term Code	Min	Min	Min	Skip	Min		Hold	Hold		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	0.0	15.0		0.0	0.0		0.0	0.0	
30th %ile Term Code	Min	Min	Min	Skip	Min		Skip	Skip		Skip	Skip	
10th %ile Green (s)	30.0	30.0	30.0	0.0	30.0		0.0	0.0		0.0	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Skip	Dwell		Skip	Skip		Skip	Skip	
Stops (vph)	26	167	19	34	212			74			25	
Fuel Used(gal)	0	3	1	0	3			2			0	
CO Emissions (g/hr)	29	209	36	34	242			130			32	
NOx Emissions (g/hr)	6	41	7	7	47			25			6	
VOC Emissions (g/hr)	7	49	8	8	56			30			7	
Dilemma Vehicles (#)	0	17	0	0	28			10			0	
Queue Length 50th (ft)	5	25	0	8	50			16			3	
Queue Length 95th (ft)	28	75	26	35	73			71			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	602	2620	1210	528	3238			665			832	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.06	0.13	0.08	0.09	0.19			0.20			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	41.1
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization:	54.2%
ICU Level of Service:	A
Analysis Period (min):	15
90th %ile Actuated Cycle:	55.5
70th %ile Actuated Cycle:	54.8
50th %ile Actuated Cycle:	39.8
30th %ile Actuated Cycle:	20.3
10th %ile Actuated Cycle:	35.3

Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Neighborhoods at Lugonia Village  
 9: New York St/Proj Drwy & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	298	84	40	524	6	88	2	26	13	7	52
Future Volume (veh/h)	33	298	84	40	524	6	88	2	26	13	7	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1730	1786	1673	1772	1772	1758	1772	1660	1772	1772	1772
Adj Flow Rate, veh/h	36	339	95	45	595	7	100	2	30	14	8	57
Peak Hour Factor	0.92	0.88	0.88	0.88	0.88	0.92	0.88	0.92	0.88	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	1	2	2	2	3	2	10	2	2	2
Cap, veh/h	401	1017	468	149	1726	20	427	23	94	127	85	323
Arrive On Green	0.31	0.31	0.31	0.09	0.51	0.51	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	817	3287	1511	1594	3408	40	1016	80	322	135	292	1107
Grp Volume(v), veh/h	36	339	95	45	294	308	132	0	0	79	0	0
Grp Sat Flow(s),veh/h/ln	817	1643	1511	1594	1683	1765	1419	0	0	1534	0	0
Q Serve(g_s), s	1.5	3.8	2.2	1.3	5.1	5.1	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.5	3.8	2.2	1.3	5.1	5.1	3.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.76		0.23	0.18		0.72
Lane Grp Cap(c), veh/h	401	1017	468	149	852	894	544	0	0	534	0	0
V/C Ratio(X)	0.09	0.33	0.20	0.30	0.34	0.34	0.24	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	717	2285	1051	395	1761	1846	697	0	0	701	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	12.9	12.3	20.5	7.2	7.2	13.2	0.0	0.0	12.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	1.1	0.2	0.2	0.2	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(50%),veh/ln	0.2	1.2	0.7	0.5	1.3	1.4	0.9	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	13.1	12.5	21.6	7.4	7.4	13.5	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		470			647			132			79	
Approach Delay, s/veh		12.9			8.4			13.5			12.9	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.5	20.3		18.6		29.8		18.6				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	12.0	33.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.3	5.8		3.8		7.1		5.2				
Green Ext Time (p_c), s	0.0	2.8		0.3		3.9		0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.8								
HCM 6th LOS				B								





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	318	540	3	6	30
Future Volume (vph)	19	318	540	3	6	30
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Flt			0.999		0.888	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1568	3226	1763	0	1555	0
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	1568	3226	1763	0	1555	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	6%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	22	361	614	3	7	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	361	617	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	318	540	3	6	30
Future Vol, veh/h	19	318	540	3	6	30
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	3	6	2	2	2	2
Mvmt Flow	22	361	614	3	7	34

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	618	0	-	0	842 617
Stage 1	-	-	-	-	617 -
Stage 2	-	-	-	-	225 -
Critical Hdwy	4.145	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.2285	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	954	-	-	-	318 489
Stage 1	-	-	-	-	537 -
Stage 2	-	-	-	-	792 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	953	-	-	-	310 489
Mov Cap-2 Maneuver	-	-	-	-	310 -
Stage 1	-	-	-	-	524 -
Stage 2	-	-	-	-	791 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	953	-	-	-	446
HCM Lane V/C Ratio	0.023	-	-	-	0.092
HCM Control Delay (s)	8.9	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	12	1	13	11	3	3	6	15	0	4	2
Future Volume (vph)	0	12	1	13	11	3	3	6	15	0	4	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr <sub>t</sub>		0.991			0.984			0.916			0.961	
Fl <sub>t</sub> Protected					0.976			0.993				
Satd. Flow (prot)	0	1749	0	0	1705	0	0	1599	0	0	1708	0
Fl <sub>t</sub> Permitted					0.976			0.993				
Satd. Flow (perm)	0	1749	0	0	1705	0	0	1599	0	0	1708	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1715			965			1320			301	
Travel Time (s)		39.0			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	3%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	14	1	16	13	4	4	7	18	0	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	33	0	0	29	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.1%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	12	1	13	11	3	3	6	15	0	4	2
Future Vol, veh/h	0	12	1	13	11	3	3	6	15	0	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	1	2	1	2	1	3	1	1	2
Mvmt Flow	0	14	1	16	13	4	4	7	18	0	5	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	15	0	0	66	64	15	74	62	15
Stage 1	-	-	-	-	-	-	15	15	-	47	47	-
Stage 2	-	-	-	-	-	-	51	49	-	27	15	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.12	6.51	6.23	7.11	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.518	4.009	3.327	3.509	4.009	3.318
Pot Cap-1 Maneuver	1600	-	-	1609	-	-	927	829	1062	919	831	1065
Stage 1	-	-	-	-	-	-	1005	885	-	969	858	-
Stage 2	-	-	-	-	-	-	962	856	-	993	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1600	-	-	1609	-	-	914	821	1062	891	823	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	914	821	-	891	823	-
Stage 1	-	-	-	-	-	-	1005	885	-	969	849	-
Stage 2	-	-	-	-	-	-	945	847	-	968	885	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.5			8.8			9.1		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	971	1600	-	-	1609	-	-	890
HCM Lane V/C Ratio	0.03	-	-	-	0.01	-	-	0.008
HCM Control Delay (s)	8.8	0	-	-	7.3	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Neighborhoods at Lugonia Village  
 12: Texas St & Pennsylvania Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	27	10	17	131	25	49	6	189	44	42	254	7
Future Volume (vph)	27	10	17	131	25	49	6	189	44	42	254	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.957			0.967			0.975			0.997	
Flt Protected		0.976			0.969			0.999			0.993	
Satd. Flow (prot)	0	1611	0	0	1662	0	0	1726	0	0	1762	0
Flt Permitted		0.976			0.969			0.999			0.993	
Satd. Flow (perm)	0	1611	0	0	1662	0	0	1726	0	0	1762	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	7%	8%	1%	1%	3%	1%	1%	4%	1%	1%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	11	18	138	26	52	6	199	46	44	267	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	216	0	0	251	0	0	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.6%
ICU Level of Service	B
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	10	17	131	25	49	6	189	44	42	254	7
Future Vol, veh/h	27	10	17	131	25	49	6	189	44	42	254	7
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
Heavy Vehicles, %	1	7	8	1	1	3	1	1	4	1	1	7
Mvmt Flow	28	11	18	138	26	52	6	199	46	44	267	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	11.1	10.8	12.2
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	50%	64%	14%
Vol Thru, %	79%	19%	12%	84%
Vol Right, %	18%	31%	24%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	54	205	303
LT Vol	6	27	131	42
Through Vol	189	10	25	254
RT Vol	44	17	49	7
Lane Flow Rate	252	57	216	319
Geometry Grp	1	1	1	1
Degree of Util (X)	0.353	0.09	0.327	0.451
Departure Headway (Hd)	5.045	5.683	5.45	5.096
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	629	658	711
Service Time	3.078	3.73	3.488	3.096
HCM Lane V/C Ratio	0.354	0.091	0.328	0.449
HCM Control Delay	10.8	9.3	11.1	12.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.6	0.3	1.4	2.4

Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing + Project AM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	237	45	191	426	26	45	174	94	25	295	74
Future Volume (vph)	42	237	45	191	426	26	45	174	94	25	295	74
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.991				0.850			0.850
Flt Protected	0.950			0.950				0.990			0.996	
Satd. Flow (prot)	1599	3214	0	1599	3312	0	0	1764	1443	0	1772	1500
Flt Permitted	0.950			0.950				0.796			0.962	
Satd. Flow (perm)	1599	3214	0	1599	3312	0	0	1419	1443	0	1712	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			9				135			135
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		425			524			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	4%	3%	1%	2%	8%	1%	1%	6%	3%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	258	49	208	463	28	49	189	102	27	321	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	307	0	208	491	0	0	238	102	0	348	80
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	11.1	32.0		24.0	44.9		34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	12.3%	35.6%		26.7%	49.9%		37.8%	37.8%	37.8%	37.8%	37.8%	37.8%
Maximum Green (s)	6.4	27.3		19.3	40.2		29.3	29.3	29.3	29.3	29.3	29.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7			4.7	4.7		4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	6.4	11.0		13.0	23.1			17.3	17.3		17.3	17.3
Actuated g/C Ratio	0.11	0.20		0.23	0.41			0.31	0.31		0.31	0.31
v/c Ratio	0.25	0.47		0.56	0.36			0.54	0.19		0.66	0.14
Control Delay	32.0	23.0		27.5	14.6			22.5	2.9		24.6	1.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	32.0	23.0		27.5	14.6			22.5	2.9		24.6	1.5
LOS	C	C		C	B			C	A		C	A
Approach Delay		24.1			18.4			16.6			20.3	
Approach LOS		C			B			B			C	
90th %ile Green (s)	6.4	15.4		19.3	28.3		27.5	27.5	27.5	27.5	27.5	27.5
90th %ile Term Code	Max	Gap		Max	Hold		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	6.4	12.8		16.0	22.4		20.9	20.9	20.9	20.9	20.9	20.9
70th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	6.4	10.7		12.9	17.2		16.9	16.9	16.9	16.9	16.9	16.9
50th %ile Term Code	Max	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
30th %ile Green (s)	0.0	9.1		10.5	24.3		13.6	13.6	13.6	13.6	13.6	13.6
30th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
10th %ile Green (s)	0.0	7.3		7.8	19.8		10.0	10.0	10.0	10.0	10.0	10.0
10th %ile Term Code	Skip	Gap		Gap	Hold		Hold	Hold	Hold	Gap	Gap	Gap
Stops (vph)	39	209		153	286			163	7		251	3
Fuel Used(gal)	1	5		3	5			4	1		7	1
CO Emissions (g/hr)	60	341		206	364			252	39		487	50
NOx Emissions (g/hr)	12	66		40	71			49	7		95	10
VOC Emissions (g/hr)	14	79		48	84			58	9		113	12
Dilemma Vehicles (#)	0	17		0	28			14	0		21	0
Queue Length 50th (ft)	14	42		59	64			63	0		96	0
Queue Length 95th (ft)	53	100		150	126			149	18		212	9
Internal Link Dist (ft)		345			444			591			1254	
Turn Bay Length (ft)	105			100					50			50
Base Capacity (vph)	192	1657		578	2481			779	853		940	884





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.24	0.19		0.36	0.20			0.31	0.12		0.37	0.09

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	56.2
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	19.6
Intersection LOS:	B
Intersection Capacity Utilization:	66.1%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	76.3
70th %ile Actuated Cycle:	63.8
50th %ile Actuated Cycle:	54.6
30th %ile Actuated Cycle:	47.3
10th %ile Actuated Cycle:	39.2

Splits and Phases: 13: Texas St & Lugonia Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	237	45	191	426	26	45	174	94	25	295	74
Future Volume (veh/h)	42	237	45	191	426	26	45	174	94	25	295	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1744	1758	1687	1772	1688	1786	1786	1716	1758	1786	1772
Adj Flow Rate, veh/h	46	258	49	208	463	28	49	189	102	27	321	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	4	3	1	2	8	1	1	6	3	1	2
Cap, veh/h	71	407	76	255	841	51	70	214	682	62	446	705
Arrive On Green	0.04	0.15	0.15	0.16	0.26	0.26	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1606	2786	521	1606	3226	195	0	456	1454	0	950	1502
Grp Volume(v), veh/h	46	152	155	208	241	250	238	0	102	348	0	80
Grp Sat Flow(s),veh/h/ln	1606	1657	1650	1606	1683	1737	456	0	1454	951	0	1502
Q Serve(g_s), s	1.8	5.4	5.5	7.8	7.7	7.8	0.0	0.0	2.5	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.8	5.4	5.5	7.8	7.7	7.8	29.3	0.0	2.5	29.3	0.0	1.9
Prop In Lane	1.00		0.32	1.00		0.11	0.21		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	71	242	241	255	439	453	284	0	682	508	0	705
V/C Ratio(X)	0.65	0.63	0.64	0.82	0.55	0.55	0.84	0.00	0.15	0.68	0.00	0.11
Avail Cap(c_a), veh/h	165	725	722	497	1084	1119	284	0	683	508	0	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	25.0	25.1	25.4	19.9	19.9	16.0	0.0	9.5	14.0	0.0	9.3
Incr Delay (d2), s/veh	9.7	2.7	2.9	6.3	1.1	1.1	19.5	0.0	0.1	3.8	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(50%),veh/ln	0.8	2.1	2.2	3.2	2.9	3.0	3.4	0.0	0.7	3.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	27.7	28.0	31.7	21.0	21.0	35.6	0.0	9.6	17.8	0.0	9.4
LnGrp LOS	D	C	C	C	C	C	D	A	A	B	A	A
Approach Vol, veh/h		353			699			340			428	
Approach Delay, s/veh		29.3			24.2			27.8			16.2	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	13.8		34.0	7.4	21.0		34.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 19	* 27		* 29	* 6.4	* 40		* 29				
Max Q Clear Time (g_c+I1), s	9.8	7.5		31.3	3.8	9.8		31.3				
Green Ext Time (p_c), s	0.4	1.6		0.0	0.0	3.0		0.0				

**Intersection Summary**

HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

**Notes**

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# **Appendix H: Existing Year With Project (Scenario B) PM Peak Hour Analysis Worksheets**

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	584	84	125	233	129	48	61	269	161	256	125
Future Volume (vph)	102	584	84	125	233	129	48	61	269	161	256	125
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	260		0	175		175	225		0	75		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor											1.00	
Frt			0.850			0.850			0.850		0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1500	1583	1698	1471	1583	1765	1500	1568	3164	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			155			113			75
Link Speed (mph)		30			30			35				30
Link Distance (ft)		1161			720			1341				1495
Travel Time (s)		26.4			16.4			26.1				34.0
Confl. Peds. (#/hr)												2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	6%	4%	2%	2%	2%	3%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	105	602	87	129	240	133	49	63	277	166	264	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	602	87	129	240	133	49	63	277	166	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases			2			6			8			
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	22.5	38.0	38.0	22.5	37.0	37.0	9.7	37.0	22.5	14.7	37.0	
Total Split (s)	22.5	38.4	38.4	22.6	38.5	38.5	12.4	37.0	22.6	22.0	46.6	
Total Split (%)	18.8%	32.0%	32.0%	18.8%	32.1%	32.1%	10.3%	30.8%	18.8%	18.3%	38.8%	
Maximum Green (s)	17.8	32.4	32.4	17.9	32.5	32.5	7.7	31.0	17.9	17.3	40.6	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0	3.7	3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0	4.7	4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		25.0	25.0		24.0	24.0		24.0			24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			2	
Act Effct Green (s)	11.4	21.3	21.3	12.4	26.2	26.2	7.5	10.1	25.0	15.2	20.0	
Actuated g/C Ratio	0.15	0.27	0.27	0.16	0.33	0.33	0.10	0.13	0.32	0.19	0.26	
v/c Ratio	0.46	0.66	0.17	0.52	0.42	0.22	0.33	0.28	0.50	0.55	0.46	
Control Delay	43.0	30.8	0.7	43.6	28.3	4.3	47.4	38.7	16.0	42.3	23.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.0	30.8	0.7	43.6	28.3	4.3	47.4	38.7	16.0	42.3	23.8	
LOS	D	C	A	D	C	A	D	D	B	D	C	
Approach Delay		29.1			25.9			23.6			29.3	
Approach LOS		C			C			C			C	
90th %ile Green (s)	17.4	32.4	32.4	17.9	32.9	32.9	7.7	21.4	17.9	17.3	31.0	
90th %ile Term Code	Gap	Max	Max	Max	Hold	Hold	Max	Hold	Max	Max	Ped	
70th %ile Green (s)	13.3	25.7	25.7	14.8	27.2	27.2	7.7	10.0	14.8	17.3	19.6	
70th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Max	Hold	
50th %ile Green (s)	11.1	21.6	21.6	12.3	22.8	22.8	7.7	8.5	12.3	14.9	15.7	
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Max	Gap	Gap	Gap	Hold	
30th %ile Green (s)	9.1	17.6	17.6	10.0	18.5	18.5	0.0	7.2	10.0	12.1	24.0	
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Skip	Gap	Gap	Gap	Hold	
10th %ile Green (s)	0.0	11.1	11.1	7.1	22.9	22.9	0.0	0.0	7.1	11.3	10.0	
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Skip	Gap	Hold	Min	
Stops (vph)	85	476	0	106	173	11	44	51	113	132	237	
Fuel Used(gal)	2	12	1	2	4	1	2	2	7	4	8	
CO Emissions (g/hr)	160	810	54	168	252	63	119	142	479	279	531	
NOx Emissions (g/hr)	31	157	11	33	49	12	23	28	93	54	103	
VOC Emissions (g/hr)	37	188	13	39	58	15	28	33	111	65	123	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	3	0	0	0	
Queue Length 50th (ft)	48	136	0	59	97	0	23	29	59	75	73	
Queue Length 95th (ft)	124	253	2	147	217	32	75	77	147	#200	141	
Internal Link Dist (ft)		1081			640			1261			1415	
Turn Bay Length (ft)	260			175		175	225			75		
Base Capacity (vph)	393	1518	764	396	772	753	170	764	683	379	1827	

Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023

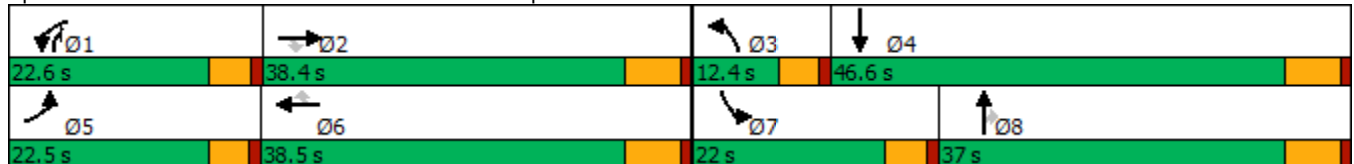


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.40	0.11	0.33	0.31	0.18	0.29	0.08	0.41	0.44	0.22	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	78.3
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	27.5
Intersection LOS:	C
Intersection Capacity Utilization:	59.5%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	110.4
70th %ile Actuated Cycle:	89.2
50th %ile Actuated Cycle:	78.7
30th %ile Actuated Cycle:	68.3
10th %ile Actuated Cycle:	44.9
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
 1: Citrus Plaza Dr/I-210 EB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	584	84	125	233	129	48	61	269	161	256	125
Future Volume (veh/h)	102	584	84	125	233	129	48	61	269	161	256	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1716	1744	1673	1772	1772	1660	1772	1758
Adj Flow Rate, veh/h	105	602	87	129	240	133	49	63	277	166	264	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	6	4	2	2	2	3	2	3
Cap, veh/h	150	844	377	174	456	393	69	362	471	214	655	311
Arrive On Green	0.09	0.25	0.25	0.11	0.27	0.27	0.04	0.20	0.20	0.14	0.30	0.30
Sat Flow, veh/h	1594	3367	1502	1594	1716	1478	1594	1772	1502	1581	2214	1050
Grp Volume(v), veh/h	105	602	87	129	240	133	49	63	277	166	199	194
Grp Sat Flow(s),veh/h/ln	1594	1683	1502	1594	1716	1478	1594	1772	1502	1581	1683	1580
Q Serve(g_s), s	4.6	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.1	7.2	6.7	7.0
Cycle Q Clear(g_c), s	4.6	11.6	3.3	5.6	8.5	5.2	2.2	2.1	11.1	7.2	6.7	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	150	844	377	174	456	393	69	362	471	214	498	468
V/C Ratio(X)	0.70	0.71	0.23	0.74	0.53	0.34	0.71	0.17	0.59	0.78	0.40	0.42
Avail Cap(c_a), veh/h	398	1530	683	400	782	674	172	771	817	384	959	900
HCM Platoon Ratio	1.00	1.00	1.00	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	31.3	24.4	21.2	30.8	22.3	21.1	33.6	23.4	20.6	29.8	20.0	20.1
Incr Delay (d2), s/veh	5.8	1.1	0.3	6.0	0.9	0.5	12.3	0.2	1.2	6.0	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(50%),veh/ln	1.9	4.5	1.1	2.4	3.4	1.7	1.0	0.8	3.7	3.0	2.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	25.5	21.5	36.8	23.3	21.6	45.9	23.6	21.7	35.8	20.6	20.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		794			502			389			559	
Approach Delay, s/veh		26.6			26.3			25.1			25.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	23.9	7.8	27.1	11.4	25.0	14.3	20.6				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 18	32.4	* 7.7	40.6	* 18	32.5	* 17	31.0				
Max Q Clear Time (g_c+I1), s	7.6	13.6	4.2	9.0	6.6	10.5	9.2	13.1				
Green Ext Time (p_c), s	0.2	4.3	0.0	2.6	0.2	1.8	0.3	1.2				

Intersection Summary

HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

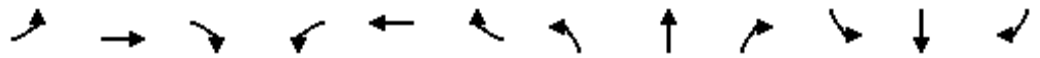
Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Neighborhoods at Lugonia Village  
 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	481	140	23	320	159	57	384	37	184	12	110
Future Volume (vph)	393	481	140	23	320	159	57	384	37	184	12	110
Ideal Flow (vphpl)	1600	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	245		0	160		0	100		100	110		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.987				0.864
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2891	1765	1485	1583	1748	1485	1568	3309	0	1568	1470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			198			8			113
Link Speed (mph)		30			40			35				30
Link Distance (ft)		720			275			1347				996
Travel Time (s)		16.4			4.7			26.2				22.6
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	3%	2%	2%	3%	4%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	405	496	144	24	330	164	59	396	38	190	12	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	496	144	24	330	164	59	434	0	190	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.24	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												



Neighborhoods at Lugonia Village  
2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	14.7	36.0	36.0	14.7	36.0	36.0	14.7	35.0		14.7	35.0	
Total Split (s)	25.3	46.8	46.8	14.7	36.2	36.2	15.1	35.0		23.5	43.4	
Total Split (%)	21.1%	39.0%	39.0%	12.3%	30.2%	30.2%	12.6%	29.2%		19.6%	36.2%	
Maximum Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	29.0		18.8	37.4	
Yellow Time (s)	3.7	5.0	5.0	3.7	5.0	5.0	3.7	5.0		3.7	5.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0	6.0	4.7	6.0	6.0	4.7	6.0		4.7	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		23.0	23.0		23.0	23.0		22.0			22.0	
Pedestrian Calls (#/hr)		0	0		0	0		0			0	
Act Effct Green (s)	18.4	41.9	41.9	10.3	23.8	23.8	10.5	18.7		16.4	28.8	
Actuated g/C Ratio	0.19	0.42	0.42	0.10	0.24	0.24	0.11	0.19		0.16	0.29	
v/c Ratio	0.76	0.67	0.20	0.15	0.79	0.32	0.36	0.69		0.73	0.25	
Control Delay	50.5	31.6	4.3	49.6	51.4	4.3	53.9	44.4		59.9	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.5	31.6	4.3	49.6	51.4	4.3	53.9	44.4		59.9	8.9	
LOS	D	C	A	D	D	A	D	D		E	A	
Approach Delay		35.2			36.4			45.6			39.7	
Approach LOS		D			D			D			D	
90th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	26.0		18.8	34.4	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
70th %ile Green (s)	20.6	40.8	40.8	10.0	30.2	30.2	10.4	21.6		18.8	30.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Gap		Max	Hold	
50th %ile Green (s)	20.6	50.4	50.4	0.0	25.1	25.1	10.0	19.3		18.8	28.1	
50th %ile Term Code	Max	Hold	Hold	Skip	Gap	Gap	Min	Gap		Max	Hold	
30th %ile Green (s)	17.2	42.5	42.5	0.0	20.6	20.6	10.0	16.0		15.2	21.2	
30th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Min	Gap		Gap	Hold	
10th %ile Green (s)	12.9	32.2	32.2	0.0	14.6	14.6	0.0	12.0		10.9	27.6	
10th %ile Term Code	Gap	Hold	Hold	Skip	Gap	Gap	Skip	Gap		Gap	Hold	
Stops (vph)	347	368	13	22	284	10	52	366		159	22	
Fuel Used(gal)	8	8	1	1	8	1	2	11		5	1	
CO Emissions (g/hr)	571	547	68	40	552	77	110	745		318	89	
NOx Emissions (g/hr)	111	106	13	8	107	15	21	145		62	17	
VOC Emissions (g/hr)	132	127	16	9	128	18	25	173		74	21	
Dilemma Vehicles (#)	0	0	0	0	14	0	0	15		0	0	
Queue Length 50th (ft)	132	234	0	15	209	0	38	143		121	6	
Queue Length 95th (ft)	#223	#504	37	45	336	32	88	207		#248	52	
Internal Link Dist (ft)		640			195			1267			916	
Turn Bay Length (ft)	245			160			100			110		
Base Capacity (vph)	618	786	747	164	548	601	169	1002		306	639	

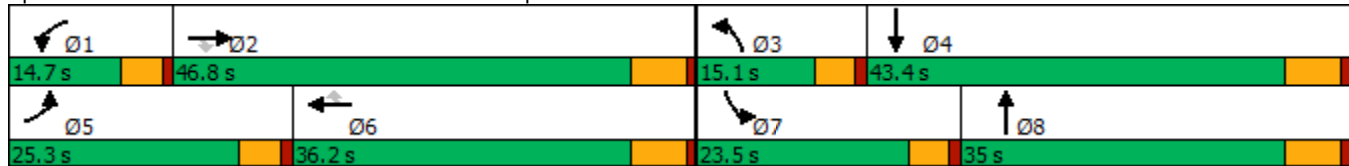


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.66	0.63	0.19	0.15	0.60	0.27	0.35	0.43		0.62	0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	99.4
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	38.2
Intersection LOS:	D
Intersection Capacity Utilization:	76.7%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	117
70th %ile Actuated Cycle:	112.6
50th %ile Actuated Cycle:	105.2
30th %ile Actuated Cycle:	90.4
10th %ile Actuated Cycle:	71.8
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 2: Tennessee St/I-210 WB Ramp & San Bernardino Ave



Neighborhoods at Lugonia Village  
2: Tennessee St/I-210 WB Ramp & San Bernardino Ave

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↖	↑	↗	↖	↕↔		↖	↗	
Traffic Volume (veh/h)	393	481	140	23	320	159	57	384	37	184	12	110
Future Volume (veh/h)	393	481	140	23	320	159	57	384	37	184	12	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1758	1673	1758	1758	1660	1772	1772	1660	1744	1716
Adj Flow Rate, veh/h	405	496	144	24	330	164	59	396	38	190	12	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	2	3	3	3	2	2	3	4	6
Cap, veh/h	501	621	522	83	405	343	147	548	52	228	33	309
Arrive On Green	0.17	0.35	0.35	0.05	0.23	0.23	0.09	0.18	0.18	0.14	0.23	0.23
Sat Flow, veh/h	2910	1772	1490	1594	1758	1490	1581	3105	296	1581	144	1356
Grp Volume(v), veh/h	405	496	144	24	330	164	59	214	220	190	0	125
Grp Sat Flow(s),veh/h/ln	1455	1772	1490	1594	1758	1490	1581	1683	1719	1581	0	1500
Q Serve(g_s), s	10.3	19.5	5.4	1.1	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Cycle Q Clear(g_c), s	10.3	19.5	5.4	1.1	13.7	7.4	2.7	9.3	9.4	9.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.90
Lane Grp Cap(c), veh/h	501	621	522	83	405	343	147	297	303	228	0	341
V/C Ratio(X)	0.81	0.80	0.28	0.29	0.82	0.48	0.40	0.72	0.73	0.83	0.00	0.37
Avail Cap(c_a), veh/h	776	935	786	206	687	582	213	632	645	385	0	726
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00
Uniform Delay (d), s/veh	30.8	22.6	18.0	35.3	28.2	25.7	33.0	30.0	30.1	32.2	0.0	25.1
Incr Delay (d2), s/veh	3.6	2.9	0.3	1.9	4.0	1.0	1.8	3.3	3.3	7.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.1	1.8	0.5	5.8	2.6	1.1	3.8	4.0	3.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	25.6	18.3	37.1	32.2	26.8	34.8	33.3	33.4	39.9	0.0	25.8
LnGrp LOS	C	C	B	D	C	C	C	C	C	D	A	C
Approach Vol, veh/h		1045			518			493				315
Approach Delay, s/veh		28.0			30.7			33.5				34.3
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	33.1	11.9	23.6	18.0	23.8	15.8	19.6				
Change Period (Y+Rc), s	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0	* 4.7	6.0				
Max Green Setting (Gmax), s	* 10	40.8	* 10	37.4	* 21	30.2	* 19	29.0				
Max Q Clear Time (g_c+I1), s	3.1	21.5	4.7	7.4	12.3	15.7	11.0	11.4				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	1.0	2.1	0.3	2.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			30.6									
HCM 6th LOS			C									
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Neighborhoods at Lugonia Village  
3: Tennessee St & Pennsylvania Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	5	473	37	7	168
Future Volume (vph)	22	5	473	37	7	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		100	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.977		0.990			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1655	0	1747	0	1676	1765
Flt Permitted	0.960				0.950	
Satd. Flow (perm)	1655	0	1747	0	1676	1765
Link Speed (mph)	30		35			35
Link Distance (ft)	1715		1348			1347
Travel Time (s)	39.0		26.3			26.2
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	24	5	514	40	8	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	554	0	8	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	22	5	473	37	7	168
Future Vol, veh/h	22	5	473	37	7	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	514	40	8	183

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	733	534	0	0	554
Stage 1	534	-	-	-	-
Stage 2	199	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	388	546	-	-	1016
Stage 1	588	-	-	-	-
Stage 2	835	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	385	546	-	-	1016
Mov Cap-2 Maneuver	385	-	-	-	-
Stage 1	588	-	-	-	-
Stage 2	828	-	-	-	-
























Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	1016
HCM Lane V/C Ratio	-	-	0.072	0.007
HCM Control Delay (s)	-	-	14.5	8.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	765	404	149	442	115	301	314	261	87	85	18
Future Volume (vph)	81	765	404	149	442	115	301	314	261	87	85	18
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1700	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	130		110	150		0	200		0	100		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98		0.99				0.99			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	3353	1500	1583	1701	0	1583	1765	1471	1583	1748	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1583	3353	1470	1583	1701	0	1583	1765	1449	1583	1748	1463
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			309		15				244			133
Link Speed (mph)		40			35			35			35	
Link Distance (ft)		349			421			663			1348	
Travel Time (s)		5.9			8.2			12.9			26.3	
Confl. Peds. (#/hr)			8			3			3			3
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	84	789	416	154	456	119	310	324	269	90	88	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	789	416	154	575	0	310	324	269	90	88	19
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	8	7	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0		9.5	32.0	32.0	9.5	32.0	32.0
Total Split (s)	9.5	32.0	32.0	11.0	33.5		15.0	32.1	32.1	14.9	32.0	32.0
Total Split (%)	10.6%	35.6%	35.6%	12.2%	37.2%		16.7%	35.7%	35.7%	16.6%	35.6%	35.6%
Maximum Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0		3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.0	5.0	4.5	5.0		4.5	5.0	5.0	4.5	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	Min	None	Min		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	20.0
Pedestrian Calls (#/hr)		8	8		3			3	3		3	3
Act Effct Green (s)	5.1	27.6	27.6	6.7	29.2		11.0	19.9	19.9	8.9	17.8	17.8
Actuated g/C Ratio	0.06	0.35	0.35	0.08	0.37		0.14	0.25	0.25	0.11	0.22	0.22
v/c Ratio	0.83	0.68	0.59	1.17	0.91		1.42	0.74	0.49	0.51	0.23	0.04
Control Delay	97.0	28.2	10.9	169.7	47.9		243.8	38.7	8.2	47.0	26.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.0	28.2	10.9	169.7	47.9		243.8	38.7	8.2	47.0	26.0	0.2
LOS	F	C	B	F	D		F	D	A	D	C	A
Approach Delay		27.1			73.7			100.0			33.1	
Approach LOS		C			E			F			C	
90th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	27.1	27.1	10.4	27.0	27.0
90th %ile Term Code	Max	Max	Max	Max	Max		Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	25.6	25.6	10.4	25.5	25.5
70th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Max	Hold	Hold
50th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	21.2	21.2	10.0	20.7	20.7
50th %ile Term Code	Max	Max	Max	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
30th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		10.5	16.6	16.6	8.2	14.3	14.3
30th %ile Term Code	Max	Hold	Hold	Max	Max		Max	Gap	Gap	Gap	Hold	Hold
10th %ile Green (s)	5.0	27.0	27.0	6.5	28.5		11.6	11.1	11.1	0.0	0.0	0.0
10th %ile Term Code	Max	Hold	Hold	Max	Max		Hold	Gap	Gap	Skip	Skip	Skip
Stops (vph)	59	630	108	103	422		204	270	42	78	61	0
Fuel Used(gal)	3	15	4	7	11		20	8	4	2	2	0
CO Emissions (g/hr)	185	1051	301	463	786		1376	550	247	158	121	12
NOx Emissions (g/hr)	36	205	59	90	153		268	107	48	31	24	2
VOC Emissions (g/hr)	43	244	70	107	182		319	127	57	37	28	3
Dilemma Vehicles (#)	0	43	0	0	31		0	15	0	0	4	0
Queue Length 50th (ft)	45	191	41	~102	288		~233	156	10	45	37	0
Queue Length 95th (ft)	#140	285	144	#236	#558		#420	246	69	97	73	0
Internal Link Dist (ft)		269			341			583			1268	
Turn Bay Length (ft)	130		110	150			200			100		50
Base Capacity (vph)	101	1162	711	132	632		219	614	663	211	606	594

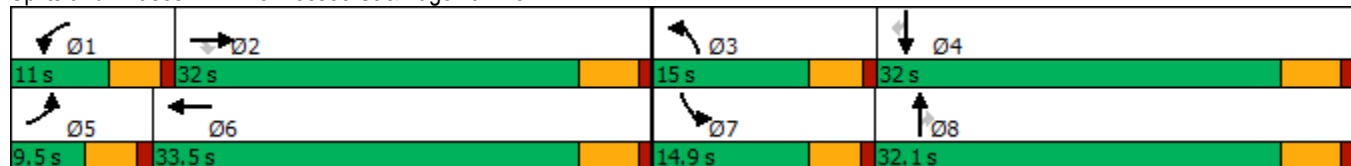


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.68	0.59	1.17	0.91		1.42	0.53	0.41	0.43	0.15	0.03

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	79.7
Natural Cycle:	105
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.42
Intersection Signal Delay:	59.5
Intersection LOS:	E
Intersection Capacity Utilization	77.9%
ICU Level of Service	D
Analysis Period (min)	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	88.5
50th %ile Actuated Cycle:	83.7
30th %ile Actuated Cycle:	77.3
10th %ile Actuated Cycle:	59.1
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 4: Tennessee St & Lugonia Ave





Neighborhoods at Lugonia Village  
4: Tennessee St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	765	404	149	442	115	301	314	261	87	85	18
Future Volume (veh/h)	81	765	404	149	442	115	301	314	261	87	85	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1744	1673	1758	1772
Adj Flow Rate, veh/h	84	789	416	154	456	119	310	324	269	90	88	19
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	4	2	3	2
Cap, veh/h	104	1148	509	142	495	129	230	422	351	112	289	245
Arrive On Green	0.06	0.34	0.34	0.09	0.37	0.37	0.14	0.24	0.24	0.07	0.16	0.16
Sat Flow, veh/h	1594	3367	1491	1594	1353	353	1594	1772	1472	1594	1758	1488
Grp Volume(v), veh/h	84	789	416	154	0	575	310	324	269	90	88	19
Grp Sat Flow(s),veh/h/ln	1594	1683	1491	1594	0	1707	1594	1772	1472	1594	1758	1488
Q Serve(g_s), s	3.8	14.7	18.6	6.5	0.0	23.5	10.5	12.4	12.4	4.1	3.2	0.8
Cycle Q Clear(g_c), s	3.8	14.7	18.6	6.5	0.0	23.5	10.5	12.4	12.4	4.1	3.2	0.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1148	509	142	0	624	230	422	351	112	289	245
V/C Ratio(X)	0.81	0.69	0.82	1.08	0.00	0.92	1.35	0.77	0.77	0.80	0.30	0.08
Avail Cap(c_a), veh/h	109	1248	553	142	0	668	230	659	548	228	652	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	20.6	21.9	33.2	0.0	22.1	31.2	25.8	25.8	33.4	26.8	25.7
Incr Delay (d2), s/veh	34.0	1.4	8.8	99.3	0.0	17.7	183.1	2.9	3.5	12.4	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.4	7.1	6.3	0.0	11.5	15.5	5.2	4.4	1.9	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	22.1	30.7	132.4	0.0	39.9	214.2	28.8	29.4	45.7	27.3	25.9
LnGrp LOS	E	C	C	F	A	D	F	C	C	D	C	C
Approach Vol, veh/h		1289			729			903			197	
Approach Delay, s/veh		27.8			59.4			92.6			35.6	
Approach LOS		C			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	29.8	15.0	17.0	9.2	31.6	9.6	22.4				
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0				
Max Green Setting (Gmax), s	6.5	27.0	10.5	27.0	5.0	28.5	10.4	27.1				
Max Q Clear Time (g_c+I1), s	8.5	20.6	12.5	5.2	5.8	25.5	6.1	14.4				
Green Ext Time (p_c), s	0.0	3.4	0.0	0.4	0.0	1.1	0.1	2.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			54.5									
HCM 6th LOS			D									

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔↔		↗	↕↕			↕↔	
Traffic Volume (vph)	0	0	0	119	3	232	223	732	0	0	530	136
Future Volume (vph)	0	0	0	119	3	232	223	732	0	0	530	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt					0.902							0.969
Flt Protected					0.983		0.950					
Satd. Flow (prot)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Flt Permitted					0.983		0.950					
Satd. Flow (perm)	0	0	0	0	2953	0	1568	3353	0	0	3249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					244							38
Link Speed (mph)		30			30			35				35
Link Distance (ft)		855			1063			612				817
Travel Time (s)		19.4			24.2			11.9				15.9
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%				0%
Adj. Flow (vph)	0	0	0	125	3	244	235	771	0	0	558	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	372	0	235	771	0	0	701	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2				2
Detector Template				Left	Thru		Left	Thru				Thru
Leading Detector (ft)				20	100		20	100				100
Trailing Detector (ft)				0	0		0	0				0
Turn Type				Perm	NA		Prot	NA				NA
Protected Phases					4		1	6				2
Permitted Phases				4								
Detector Phase				4	4		1	6				2
Switch Phase												

Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)				5.0	5.0		5.0	5.0			5.0	
Minimum Split (s)				22.5	22.5		10.0	23.5			22.5	
Total Split (s)				24.0	24.0		30.0	66.0			36.0	
Total Split (%)				26.7%	26.7%		33.3%	73.3%			40.0%	
Maximum Green (s)				18.5	18.5		25.0	60.5			30.5	
Yellow Time (s)				4.5	4.5		4.0	4.5			4.5	
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	
Total Lost Time (s)					5.5		5.0	5.5			5.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				None	None		None	C-Min			C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								11.0				
Pedestrian Calls (#/hr)								1				
Act Effct Green (s)					10.0		18.6	69.0			45.4	
Actuated g/C Ratio					0.11		0.21	0.77			0.50	
v/c Ratio					0.69		0.73	0.30			0.42	
Control Delay					19.8		43.0	1.1			15.9	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					19.8		43.0	1.1			15.9	
LOS					B		D	A			B	
Approach Delay					19.8			10.9			15.9	
Approach LOS					B			B			B	
90th %ile Green (s)				15.5	15.5		25.3	63.5			33.2	
90th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
70th %ile Green (s)				11.7	11.7		21.5	67.3			40.8	
70th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
50th %ile Green (s)				9.6	9.6		18.7	69.4			45.7	
50th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
30th %ile Green (s)				7.5	7.5		15.8	71.5			50.7	
30th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
10th %ile Green (s)				5.5	5.5		11.7	73.5			56.8	
10th %ile Term Code				Gap	Gap		Gap	Coord			Coord	
Stops (vph)					120		183	72			396	
Fuel Used(gal)					5		4	4			12	
CO Emissions (g/hr)					350		302	275			857	
NOx Emissions (g/hr)					68		59	54			167	
VOC Emissions (g/hr)					81		70	64			199	
Dilemma Vehicles (#)					0		0	22			37	
Queue Length 50th (ft)					36		112	13			117	
Queue Length 95th (ft)					75		m105	m18			212	
Internal Link Dist (ft)		775			983			532			737	
Turn Bay Length (ft)							150					
Base Capacity (vph)					800		436	2572			1659	

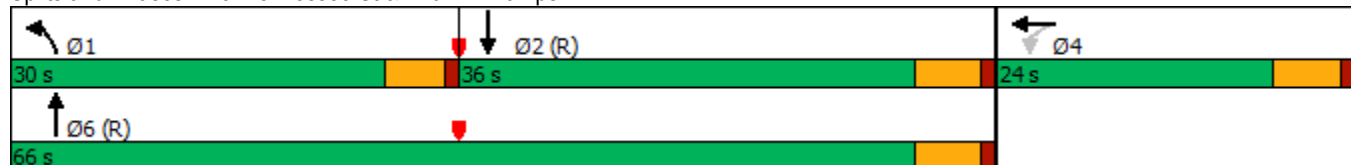


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.47		0.54	0.30			0.42	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	49 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	14.2
Intersection LOS:	B
Intersection Capacity Utilization:	83.7%
ICU Level of Service:	E
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Tennessee St & I-10 WB Ramps



Neighborhoods at Lugonia Village  
5: Tennessee St & I-10 WB Ramps

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕		↕	↕↕			↕↕	
Traffic Volume (veh/h)	0	0	0	119	3	232	223	732	0	0	530	136
Future Volume (veh/h)	0	0	0	119	3	232	223	732	0	0	530	136
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1744	1772	1772	1660	1772	0	0	1772	1772
Adj Flow Rate, veh/h				125	3	244	235	771	0	0	558	143
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				4	2	2	3	2	0	0	2	2
Cap, veh/h				307	7	279	265	2329	0	0	1244	318
Arrive On Green				0.19	0.19	0.19	0.34	1.00	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1650	40	1502	1581	3455	0	0	2744	678
Grp Volume(v), veh/h				128	0	244	235	771	0	0	353	348
Grp Sat Flow(s),veh/h/ln				1689	0	1502	1581	1683	0	0	1683	1650
Q Serve(g_s), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Cycle Q Clear(g_c), s				6.0	0.0	14.2	12.7	0.0	0.0	0.0	12.7	12.8
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.41
Lane Grp Cap(c), veh/h				314	0	279	265	2329	0	0	789	773
V/C Ratio(X)				0.41	0.00	0.87	0.89	0.33	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h				347	0	309	439	2329	0	0	789	773
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.48	0.48	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				32.3	0.0	35.6	29.1	0.0	0.0	0.0	16.1	16.1
Incr Delay (d2), s/veh				0.8	0.0	21.7	6.2	0.2	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	0.0	6.8	4.2	0.1	0.0	0.0	5.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.1	0.0	57.3	35.3	0.2	0.0	0.0	17.9	18.0
LnGrp LOS				C	A	E	D	A	A	A	B	B
Approach Vol, veh/h					372			1006			701	
Approach Delay, s/veh					49.0			8.4			17.9	
Approach LOS					D			A			B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.1	47.7		22.2		67.8						
Change Period (Y+Rc), s	5.0	5.5		5.5		5.5						
Max Green Setting (Gmax), s	25.0	30.5		18.5		60.5						
Max Q Clear Time (g_c+I1), s	14.7	14.8		16.2		2.0						
Green Ext Time (p_c), s	0.5	3.8		0.5		6.2						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.9								
HCM 6th LOS				B								

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕		↘	↕↕	
Traffic Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (vph)	334	348	354	0	0	0	0	621	149	239	410	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1700	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	200		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.949						0.971				
Flt Protected		0.984								0.950		
Satd. Flow (prot)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Flt Permitted		0.984								0.950		
Satd. Flow (perm)	0	3121	0	0	0	0	0	3256	0	1583	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		110						34				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1215			643			585			612	
Travel Time (s)		27.6			14.6			11.4			11.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	352	366	373	0	0	0	0	654	157	252	432	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1091	0	0	0	0	0	811	0	252	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.15	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2		1	2	
Detector Template	Left	Thru						Thru		Left	Thru	
Leading Detector (ft)	20	100						100		20	100	
Trailing Detector (ft)	0	0						0		0	0	
Turn Type	Perm	NA						NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8											
Detector Phase	8	8						6		5	2	
Switch Phase												

Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0						5.0		5.0	5.0	
Minimum Split (s)	23.5	23.5						31.5		10.0	23.5	
Total Split (s)	35.0	35.0						34.0		21.0	55.0	
Total Split (%)	38.9%	38.9%						37.8%		23.3%	61.1%	
Maximum Green (s)	29.5	29.5						28.5		16.0	49.5	
Yellow Time (s)	4.5	4.5						4.5		4.0	4.5	
All-Red Time (s)	1.0	1.0						1.0		1.0	1.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.5						5.5		5.0	5.5	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?								Yes		Yes		
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0						3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0						0.0		0.0	0.0	
Recall Mode	None	None						C-Min		None	C-Min	
Walk Time (s)								7.0				
Flash Dont Walk (s)								19.0				
Pedestrian Calls (#/hr)								0				
Act Effct Green (s)		31.3						26.9		15.8	47.7	
Actuated g/C Ratio		0.35						0.30		0.18	0.53	
v/c Ratio		0.94						0.81		0.91	0.25	
Control Delay		43.3						35.2		63.6	15.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		43.3						35.2		63.6	15.1	
LOS		D						D		E	B	
Approach Delay		43.3						35.2			33.0	
Approach LOS		D						D			C	
90th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
90th %ile Term Code	Max	Max						Coord		Max	Coord	
70th %ile Green (s)	29.5	29.5						28.5		16.0	49.5	
70th %ile Term Code	Max	Max						Coord		Max	Coord	
50th %ile Green (s)	30.0	30.0						28.0		16.0	49.0	
50th %ile Term Code	Max	Max						Coord		Max	Coord	
30th %ile Green (s)	32.3	32.3						25.7		16.0	46.7	
30th %ile Term Code	Max	Max						Coord		Max	Coord	
10th %ile Green (s)	35.2	35.2						23.9		14.9	43.8	
10th %ile Term Code	Gap	Gap						Coord		Gap	Coord	
Stops (vph)		809						666		208	284	
Fuel Used(gal)		23						14		6	5	
CO Emissions (g/hr)		1636						964		400	364	
NOx Emissions (g/hr)		318						188		78	71	
VOC Emissions (g/hr)		379						223		93	84	
Dilemma Vehicles (#)		0						43		0	19	
Queue Length 50th (ft)		293						211		146	108	
Queue Length 95th (ft)		#446						280		#280	48	
Internal Link Dist (ft)		1135			563			505			532	
Turn Bay Length (ft)										200		
Base Capacity (vph)		1156						1054		281	1826	

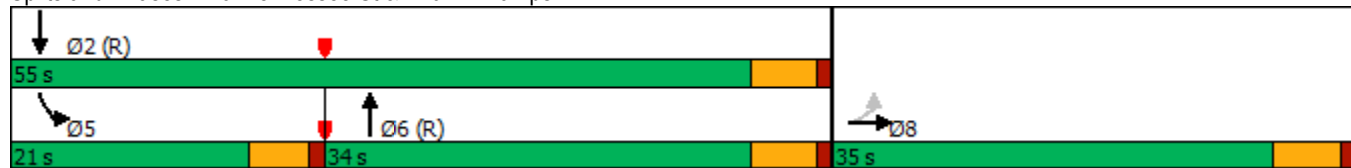


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.94						0.77		0.90	0.24	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	87.5 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	38.0
Intersection LOS:	D
Intersection Capacity Utilization	83.7%
ICU Level of Service	E
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 6: Tennessee St & I-10 EB Ramps





















Neighborhoods at Lugonia Village  
6: Tennessee St & I-10 EB Ramps

Existing + Project PM (Scenario B)

01/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Future Volume (veh/h)	334	348	354	0	0	0	0	621	149	239	410	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1772	1772				0	1772	1772	1673	1758	0
Adj Flow Rate, veh/h	352	366	373				0	654	157	252	432	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2				0	2	2	2	3	0
Cap, veh/h	332	357	386				0	853	205	283	1837	0
Arrive On Green	0.33	0.33	0.33				0.00	0.32	0.32	0.06	0.18	0.00
Sat Flow, veh/h	1014	1088	1179				0	2782	646	1594	3428	0
Grp Volume(v), veh/h	598	0	493				0	408	403	252	432	0
Grp Sat Flow(s),veh/h/ln	1721	0	1560				0	1683	1656	1594	1670	0
Q Serve(g_s), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Cycle Q Clear(g_c), s	29.5	0.0	28.0				0.0	19.7	19.8	14.1	10.0	0.0
Prop In Lane	0.59		0.76				0.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h	564	0	511				0	533	524	283	1837	0
V/C Ratio(X)	1.06	0.00	0.97				0.00	0.77	0.77	0.89	0.24	0.00
Avail Cap(c_a), veh/h	564	0	511				0	533	524	283	1837	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	30.3	0.0	29.7				0.0	27.7	27.8	41.5	20.6	0.0
Incr Delay (d2), s/veh	54.5	0.0	31.0				0.0	10.1	10.3	25.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	0.0	14.4				0.0	9.0	8.9	8.0	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.8	0.0	60.7				0.0	37.8	38.1	66.9	20.9	0.0
LnGrp LOS	F	A	E				A	D	D	E	C	A
Approach Vol, veh/h		1091						811			684	
Approach Delay, s/veh		73.9						38.0			37.9	
Approach LOS		E						D			D	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.0			21.0	34.0		35.0				
Change Period (Y+Rc), s		5.5			5.0	5.5		5.5				
Max Green Setting (Gmax), s		49.5			16.0	28.5		29.5				
Max Q Clear Time (g_c+I1), s		12.0			16.1	21.8		31.5				
Green Ext Time (p_c), s		3.0			0.0	2.7		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			53.1									
HCM 6th LOS			D									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	747	464	297	503	129
Future Volume (vph)	62	747	464	297	503	129
Ideal Flow (vphpl)	1700	1800	1800	1800	1600	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	185			0	200	0
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Ped Bike Factor						
Frt			0.941			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1583	3353	3155	0	2891	1500
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1583	3353	3155	0	2891	1500
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			309			134
Link Speed (mph)		40	40		35	
Link Distance (ft)		2554	510		1299	
Travel Time (s)		43.5	8.7		25.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	65	778	483	309	524	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	778	792	0	524	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane					Yes	
Headway Factor	1.15	1.07	1.07	1.07	1.24	1.07
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Detector Phase	5	2	6		4	4
Switch Phase						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	3.0	5.0	5.0		5.0	5.0
Minimum Split (s)	7.8	11.3	32.3		9.8	9.8
Total Split (s)	9.0	42.0	33.0		18.0	18.0
Total Split (%)	15.0%	70.0%	55.0%		30.0%	30.0%
Maximum Green (s)	4.2	35.7	26.7		13.2	13.2
Yellow Time (s)	3.5	5.0	5.0		3.5	3.5
All-Red Time (s)	1.3	1.3	1.3		1.3	1.3
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.8	6.3	6.3		4.8	4.8
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	Min	Min		None	None
Walk Time (s)				7.0		
Flash Dont Walk (s)				19.0		
Pedestrian Calls (#/hr)				6		
Act Effct Green (s)	4.5	20.7	16.1		12.2	12.2
Actuated g/C Ratio	0.10	0.46	0.36		0.27	0.27
v/c Ratio	0.41	0.50	0.59		0.67	0.26
Control Delay	34.9	9.0	9.3		22.7	6.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.9	9.0	9.3		22.7	6.0
LOS	C	A	A		C	A
Approach Delay	11.0		9.3		19.3	
Approach LOS	B		A		B	
90th %ile Green (s)	4.2	35.0	26.0		13.2	13.2
90th %ile Term Code	Max	Hold	Ped		Max	Max
70th %ile Green (s)	4.2	27.0	18.0		13.2	13.2
70th %ile Term Code	Max	Hold	Gap		Max	Max
50th %ile Green (s)	4.2	23.8	14.8		13.2	13.2
50th %ile Term Code	Max	Hold	Gap		Max	Max
30th %ile Green (s)	0.0	13.1	13.1		10.9	10.9
30th %ile Term Code	Skip	Gap	Hold		Gap	Gap
10th %ile Green (s)	0.0	9.9	9.9		8.9	8.9
10th %ile Term Code	Skip	Gap	Hold		Gap	Gap
Stops (vph)	53	431	336		391	25
Fuel Used(gal)	2	19	9		15	3
CO Emissions (g/hr)	142	1296	641		1038	196
NOx Emissions (g/hr)	28	252	125		202	38
VOC Emissions (g/hr)	33	300	149		241	45
Dilemma Vehicles (#)	0	63	68		0	0
Queue Length 50th (ft)	18	67	56		66	0
Queue Length 95th (ft)	#73	98	98		#163	36
Internal Link Dist (ft)	2474		430		1219	
Turn Bay Length (ft)	185				200	
Base Capacity (vph)	158	2709	2118		908	563



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.29	0.37		0.58	0.24

**Intersection Summary**

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	44.7
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	12.8
Intersection LOS:	B
Intersection Capacity Utilization:	57.7%
ICU Level of Service:	B
Analysis Period (min):	15
90th %ile Actuated Cycle:	59.3
70th %ile Actuated Cycle:	51.3
50th %ile Actuated Cycle:	48.1
30th %ile Actuated Cycle:	35.1
10th %ile Actuated Cycle:	29.9
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

**Splits and Phases:** 7: Lugonia Ave & Citrus Plaza Dr





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↖↗		↖↖	↘
Traffic Volume (veh/h)	62	747	464	297	503	129
Future Volume (veh/h)	62	747	464	297	503	129
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1575	1772
Adj Flow Rate, veh/h	65	778	483	309	524	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	1721	699	446	686	354
Arrive On Green	0.05	0.51	0.35	0.35	0.24	0.24
Sat Flow, veh/h	1594	3455	2061	1257	2910	1502
Grp Volume(v), veh/h	65	778	412	380	524	134
Grp Sat Flow(s),veh/h/ln	1594	1683	1683	1546	1455	1502
Q Serve(g_s), s	1.8	6.4	9.2	9.2	7.4	3.3
Cycle Q Clear(g_c), s	1.8	6.4	9.2	9.2	7.4	3.3
Prop In Lane	1.00			0.81	1.00	1.00
Lane Grp Cap(c), veh/h	75	1721	597	548	686	354
V/C Ratio(X)	0.86	0.45	0.69	0.69	0.76	0.38
Avail Cap(c_a), veh/h	153	2738	1024	940	875	452
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	20.8	6.8	12.1	12.1	15.6	14.1
Incr Delay (d2), s/veh	23.8	0.2	1.4	1.6	3.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	2.7	2.5	2.3	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	7.0	13.5	13.7	18.7	14.7
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		843	792		658	
Approach Delay, s/veh		9.9	13.6		17.9	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.7		15.2	6.9	21.9
Change Period (Y+Rc), s		* 6.3		* 4.8	* 4.8	* 6.3
Max Green Setting (Gmax), s		* 36		* 13	* 4.2	* 27
Max Q Clear Time (g_c+I1), s		8.4		9.4	3.8	11.2
Green Ext Time (p_c), s		5.5		1.0	0.0	4.3
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			13.5			
HCM 6th LOS			B			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Neighborhoods at Lugonia Village  
8: Lugonia Ave & Proj Drwy

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↓	
Traffic Volume (vph)	0	1208	697	0	4	32
Future Volume (vph)	0	1208	697	0	4	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			100	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.879	
Flt Protected					0.995	
Satd. Flow (prot)	0	4818	3353	0	1543	0
Flt Permitted					0.995	
Satd. Flow (perm)	0	4818	3353	0	1543	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		230	480		362	
Travel Time (s)		4.5	9.4		8.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	1313	758	0	4	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1313	758	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes				
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.6%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑	
Traffic Vol, veh/h	0	1208	697	0	4	32
Future Vol, veh/h	0	1208	697	0	4	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1313	758	0	4	35

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	1283 379
Stage 1	-	-	-	-	758 -
Stage 2	-	-	-	-	525 -
Critical Hdwy	-	-	-	-	6.29 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	6.04 -
Follow-up Hdwy	-	-	-	-	3.67 3.32
Pot Cap-1 Maneuver	0	-	-	0	187 619
Stage 1	0	-	-	0	412 -
Stage 2	0	-	-	0	525 -
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	-	-	-	-	187 619
Mov Cap-2 Maneuver	-	-	-	-	294 -
Stage 1	-	-	-	-	412 -
Stage 2	-	-	-	-	525 -

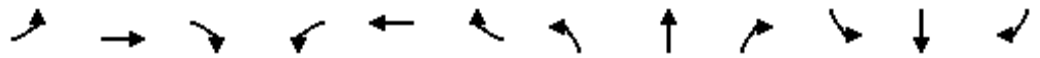
Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	551
HCM Lane V/C Ratio	-	-	0.071
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Neighborhoods at Lugonia Village  
9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	940	162	40	496	21	169	7	58	8	5	32
Future Volume (vph)	110	940	162	40	496	21	169	7	58	8	5	32
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97									
Frt			0.850		0.994			0.967			0.904	
Flt Protected	0.950			0.950				0.965			0.991	
Satd. Flow (prot)	1676	3353	1485	1568	3333	0	0	1647	0	0	1581	0
Flt Permitted	0.439			0.950				0.755			0.938	
Satd. Flow (perm)	775	3353	1448	1568	3333	0	0	1288	0	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178		10			20			35	
Link Speed (mph)		35			35			40			30	
Link Distance (ft)		480			320			976			370	
Travel Time (s)		9.4			6.2			16.6			8.4	
Confl. Peds. (#/hr)			2									
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	120	1033	178	44	545	23	186	8	64	9	5	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1033	178	44	568	0	0	258	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												



Neighborhoods at Lugonia Village  
9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario B)  
01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0	15.0	10.0	15.0		5.0	5.0		15.0	15.0	
Minimum Split (s)	23.3	23.3	23.3	15.0	23.3		22.5	22.5		22.5	22.5	
Total Split (s)	41.0	41.0	41.0	15.0	56.0		24.0	24.0		24.0	24.0	
Total Split (%)	51.3%	51.3%	51.3%	18.8%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
Yellow Time (s)	4.3	4.3	4.3	4.0	4.3		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.3	5.3	5.3	5.0	5.3			4.5			4.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0				11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	2	2	2				0	0		0	0	
Act Effct Green (s)	28.4	28.4	28.4	10.9	35.8			18.5			18.5	
Actuated g/C Ratio	0.44	0.44	0.44	0.17	0.55			0.28			0.28	
v/c Ratio	0.36	0.71	0.24	0.17	0.31			0.68			0.11	
Control Delay	17.8	18.9	3.4	32.4	7.4			34.7			12.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay	17.8	18.9	3.4	32.4	7.4			34.7			12.6	
LOS	B	B	A	C	A			C			B	
Approach Delay		16.7			9.2			34.7			12.6	
Approach LOS		B			A			C			B	
90th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
90th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
70th %ile Green (s)	35.7	35.7	35.7	10.0	50.7		19.5	19.5		19.5	19.5	
70th %ile Term Code	Max	Max	Max	Max	Hold		Max	Max		Hold	Hold	
50th %ile Green (s)	33.3	33.3	33.3	10.0	48.3		19.5	19.5		19.5	19.5	
50th %ile Term Code	Gap	Gap	Gap	Max	Hold		Max	Max		Hold	Hold	
30th %ile Green (s)	21.6	21.6	21.6	0.0	21.6		15.0	15.0		15.0	15.0	
30th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
10th %ile Green (s)	16.4	16.4	16.4	0.0	16.4		15.0	15.0		15.0	15.0	
10th %ile Term Code	Gap	Gap	Gap	Skip	Hold		Hold	Hold		Hold	Hold	
Stops (vph)	68	692	17	36	222			171			17	
Fuel Used(gal)	1	12	1	1	4			5			0	
CO Emissions (g/hr)	90	844	56	44	254			342			24	
NOx Emissions (g/hr)	18	164	11	9	49			67			5	
VOC Emissions (g/hr)	21	196	13	10	59			79			5	
Dilemma Vehicles (#)	0	61	0	0	29			15			0	
Queue Length 50th (ft)	38	209	0	19	57			107			5	
Queue Length 95th (ft)	80	278	33	50	81			#234			31	
Internal Link Dist (ft)		400			240			896			290	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	463	2004	937	262	2615			434			512	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0			0			0	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.26	0.52	0.19	0.17	0.22			0.59			0.10	

**Intersection Summary**

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	65
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	16.6
Intersection LOS:	B
Intersection Capacity Utilization:	68.8%
ICU Level of Service:	C
Analysis Period (min):	15
90th %ile Actuated Cycle:	80
70th %ile Actuated Cycle:	80
50th %ile Actuated Cycle:	77.6
30th %ile Actuated Cycle:	46.4
10th %ile Actuated Cycle:	41.2
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 9: New York St/Proj Drwy & Lugonia Ave



Neighborhoods at Lugonia Village  
9: New York St/Proj Drwy & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	940	162	40	496	21	169	7	58	8	5	32
Future Volume (veh/h)	110	940	162	40	496	21	169	7	58	8	5	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1772	1758	1660	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	120	1033	178	44	545	23	186	8	64	9	5	35
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	3	3	2	2	2	2	2	2	2	2
Cap, veh/h	477	1431	632	136	1953	82	345	22	88	108	72	277
Arrive On Green	0.42	0.42	0.42	0.09	0.59	0.59	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	843	3367	1486	1581	3292	139	992	90	357	156	295	1128
Grp Volume(v), veh/h	120	1033	178	44	278	290	258	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	843	1683	1486	1581	1683	1747	1438	0	0	1580	0	0
Q Serve(g_s), s	5.8	15.5	4.8	1.6	4.9	4.9	8.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.8	15.5	4.8	1.6	4.9	4.9	9.9	0.0	0.0	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08	0.72		0.25	0.18		0.71
Lane Grp Cap(c), veh/h	477	1431	632	136	999	1037	455	0	0	458	0	0
V/C Ratio(X)	0.25	0.72	0.28	0.32	0.28	0.28	0.57	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	614	1977	873	260	1404	1457	561	0	0	570	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	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.7	14.5	11.4	26.1	6.0	6.0	20.9	0.0	0.0	17.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.2	1.4	0.2	0.1	1.1	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(50%),veh/ln	1.0	5.1	1.4	0.6	1.3	1.4	3.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	15.3	11.7	27.5	6.2	6.2	22.0	0.0	0.0	18.0	0.0	0.0
LnGrp LOS	B	B	B	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		1331			612			258			49	
Approach Delay, s/veh		14.5			7.7			22.0			18.0	
Approach LOS		B			A			C			B	
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.2	31.1		19.4		41.4		19.4				
Change Period (Y+Rc), s	5.0	5.3		4.5		5.3		4.5				
Max Green Setting (Gmax), s	10.0	35.7		19.5		50.7		19.5				
Max Q Clear Time (g_c+I1), s	3.6	17.5		3.5		6.9		11.9				
Green Ext Time (p_c), s	0.0	8.4		0.2		3.7		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	939	538	9	4	19
Future Volume (vph)	67	939	538	9	4	19
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	90			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.887	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1583	3353	1761	0	1553	0
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	1583	3353	1761	0	1553	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		320	550		1320	
Travel Time (s)		6.2	10.7		30.0	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	72	1010	578	10	4	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	1010	588	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.15	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.9%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	939	538	9	4	19
Future Vol, veh/h	67	939	538	9	4	19
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	90	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	1010	578	10	4	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	589	0	-	0	1233 584
Stage 1	-	-	-	-	584 -
Stage 2	-	-	-	-	649 -
Critical Hdwy	4.13	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	2.219	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	984	-	-	-	182 511
Stage 1	-	-	-	-	556 -
Stage 2	-	-	-	-	483 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	983	-	-	-	168 511
Mov Cap-2 Maneuver	-	-	-	-	168 -
Stage 1	-	-	-	-	515 -
Stage 2	-	-	-	-	483 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	377
HCM Lane V/C Ratio	0.073	-	-	-	0.066
HCM Control Delay (s)	9	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Neighborhoods at Lugonia Village  
11: Karon St & Pennsylvania Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	24	3	14	11	2	2	14	31	2	4	3
Future Volume (vph)	0	24	3	14	11	2	2	14	31	2	4	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.988			0.911			0.955	
Flt Protected					0.975			0.998			0.988	
Satd. Flow (prot)	0	1738	0	0	1710	0	0	1620	0	0	1676	0
Flt Permitted					0.975			0.998			0.988	
Satd. Flow (perm)	0	1738	0	0	1710	0	0	1620	0	0	1676	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1715			965			1320			300	
Travel Time (s)		39.0			21.9			30.0			6.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	31	4	18	14	3	3	18	40	3	5	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	35	0	0	61	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	24	3	14	11	2	2	14	31	2	4	3
Future Vol, veh/h	0	24	3	14	11	2	2	14	31	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	1	2	1	2	1	1	1	1	2
Mvmt Flow	0	31	4	18	14	3	3	18	40	3	5	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	35	0	0	89	86	33	114	87	16
Stage 1	-	-	-	-	-	-	33	33	-	52	52	-
Stage 2	-	-	-	-	-	-	56	53	-	62	35	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.12	6.51	6.21	7.11	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.518	4.009	3.309	3.509	4.009	3.318
Pot Cap-1 Maneuver	1600	-	-	1583	-	-	896	806	1043	865	805	1063
Stage 1	-	-	-	-	-	-	983	870	-	963	854	-
Stage 2	-	-	-	-	-	-	956	853	-	952	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1600	-	-	1583	-	-	881	797	1043	811	796	1063
Mov Cap-2 Maneuver	-	-	-	-	-	-	881	797	-	811	796	-
Stage 1	-	-	-	-	-	-	983	870	-	963	845	-
Stage 2	-	-	-	-	-	-	936	844	-	896	868	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.8			9.1			9.2		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	948	1600	-	-	1583	-	-	873
HCM Lane V/C Ratio	0.064	-	-	-	0.011	-	-	0.013
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Neighborhoods at Lugonia Village  
12: Texas St & Pennsylvania Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	17	39	13	68	16	24	9	269	89	26	190	18
Future Volume (vph)	17	39	13	68	16	24	9	269	89	26	190	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.970			0.967			0.990	
Flt Protected		0.988			0.969			0.999			0.995	
Satd. Flow (prot)	0	1684	0	0	1675	0	0	1720	0	0	1756	0
Flt Permitted		0.988			0.969			0.999			0.995	
Satd. Flow (perm)	0	1684	0	0	1675	0	0	1720	0	0	1756	0
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		965			361			1334			655	
Travel Time (s)		21.9			8.2			22.7			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	3%	5%	1%	1%	1%	6%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	18	41	14	72	17	25	9	283	94	27	200	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	114	0	0	386	0	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.5%
ICU Level of Service	A
Analysis Period (min)	15



Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	39	13	68	16	24	9	269	89	26	190	18
Future Vol, veh/h	17	39	13	68	16	24	9	269	89	26	190	18
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
Heavy Vehicles, %	1	3	5	1	1	1	6	1	1	1	1	1
Mvmt Flow	18	41	14	72	17	25	9	283	94	27	200	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0





















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	9.8	12.4	10.4
HCM LOS	A	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	25%	63%	11%
Vol Thru, %	73%	57%	15%	81%
Vol Right, %	24%	19%	22%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	367	69	108	234
LT Vol	9	17	68	26
Through Vol	269	39	16	190
RT Vol	89	13	24	18
Lane Flow Rate	386	73	114	246
Geometry Grp	1	1	1	1
Degree of Util (X)	0.5	0.113	0.176	0.331
Departure Headway (Hd)	4.658	5.601	5.575	4.843
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	765	644	647	734
Service Time	2.737	3.605	3.577	2.935
HCM Lane V/C Ratio	0.505	0.113	0.176	0.335
HCM Control Delay	12.4	9.3	9.8	10.4
HCM Lane LOS	B	A	A	B
HCM 95th-tile Q	2.8	0.4	0.6	1.4

Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	778	93	86	400	14	105	259	143	20	222	40
Future Volume (vph)	72	778	93	86	400	14	105	259	143	20	222	40
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	105		0	100		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.984			0.995				0.850			0.850
Flt Protected	0.950			0.950				0.986			0.996	
Satd. Flow (prot)	1599	3332	0	1583	3337	0	0	1757	1515	0	1775	1515
Flt Permitted	0.950			0.950				0.778			0.954	
Satd. Flow (perm)	1599	3332	0	1583	3337	0	0	1387	1515	0	1700	1515
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			4				78			78
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		426			523			671			1334	
Travel Time (s)		8.3			10.2			11.4			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	76	819	98	91	421	15	111	273	151	21	234	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	917	0	91	436	0	0	384	151	0	255	42
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.15	1.07	1.07	1.15	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												

Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	31.7		9.7	31.7		31.7	31.7	31.7	31.7	31.7	31.7
Total Split (s)	14.7	37.0		14.0	36.3		39.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	16.3%	41.1%		15.6%	40.3%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.2	1.2		1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7		4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0		20.0	20.0	20.0	20.0	20.0	20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	0
Act Effct Green (s)	8.8	26.3		8.8	26.2		26.2	26.2	26.2	26.2	26.2	26.2
Actuated g/C Ratio	0.12	0.36		0.12	0.36		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.39	0.76		0.47	0.36		0.77	0.25	0.42	0.07		
Control Delay	42.3	26.7		45.5	20.2		34.7	11.4	22.0	1.6		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	42.3	26.7		45.5	20.2		34.7	11.4	22.0	1.6		
LOS	D	C		D	C		C	B	C	A		
Approach Delay		27.9			24.5		28.1		19.1			
Approach LOS		C			C		C		B			
90th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
90th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.0	32.3		9.3	31.6		34.3	34.3	34.3	34.3	34.3	34.3
70th %ile Term Code	Max	Max		Max	Hold		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	9.3	29.3		9.3	29.3		29.3	29.3	29.3	29.3	29.3	29.3
50th %ile Term Code	Gap	Gap		Max	Hold		Gap	Gap	Gap	Hold	Hold	Hold
30th %ile Green (s)	7.5	23.1		8.1	23.7		21.8	21.8	21.8	21.8	21.8	21.8
30th %ile Term Code	Gap	Gap		Gap	Hold		Gap	Gap	Gap	Hold	Hold	Hold
10th %ile Green (s)	0.0	13.7		0.0	13.7		12.5	12.5	12.5	12.5	12.5	12.5
10th %ile Term Code	Skip	Gap		Skip	Hold		Gap	Gap	Gap	Hold	Hold	Hold
Stops (vph)	64	700		75	276		298	48	164	2		
Fuel Used(gal)	2	16		2	5		7	1	5	0		
CO Emissions (g/hr)	112	1128		118	373		501	102	342	28		
NOx Emissions (g/hr)	22	219		23	73		97	20	66	5		
VOC Emissions (g/hr)	26	261		27	86		116	24	79	6		
Dilemma Vehicles (#)	0	51		0	20		21	0	12	0		
Queue Length 50th (ft)	37	212		45	84		172	25	97	0		
Queue Length 95th (ft)	85	308		#107	135		#296	68	168	7		
Internal Link Dist (ft)		346			443		591		1254			
Turn Bay Length (ft)	105			100				50				50
Base Capacity (vph)	247	1674		227	1634		736	841	902	841		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	0.55		0.40	0.27			0.52	0.18		0.28	0.05

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	72.9
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	26.1
Intersection LOS:	C
Intersection Capacity Utilization:	80.8%
ICU Level of Service:	D
Analysis Period (min):	15
90th %ile Actuated Cycle:	90
70th %ile Actuated Cycle:	90
50th %ile Actuated Cycle:	82
30th %ile Actuated Cycle:	67.1
10th %ile Actuated Cycle:	35.6
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 13: Texas St & Lugonia Ave



Neighborhoods at Lugonia Village  
13: Texas St & Lugonia Ave

Existing + Project PM (Scenario B)

01/13/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↖	↗
Traffic Volume (veh/h)	72	778	93	86	400	14	105	259	143	20	222	40
Future Volume (veh/h)	72	778	93	86	400	14	105	259	143	20	222	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1673	1772	1786	1786	1786	1786	1786	1786	1786
Adj Flow Rate, veh/h	76	819	98	91	421	15	111	273	151	21	234	42
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	2	2	1	1	1	1	1	1	1
Cap, veh/h	95	991	119	113	1116	40	58	97	648	49	383	648
Arrive On Green	0.06	0.32	0.32	0.07	0.34	0.34	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1606	3052	365	1594	3316	118	0	227	1514	0	895	1514
Grp Volume(v), veh/h	76	455	462	91	213	223	384	0	151	255	0	42
Grp Sat Flow(s),veh/h/ln	1606	1697	1720	1594	1683	1751	227	0	1514	895	0	1514
Q Serve(g_s), s	3.7	19.8	19.8	4.5	7.7	7.7	0.0	0.0	5.1	0.0	0.0	1.3
Cycle Q Clear(g_c), s	3.7	19.8	19.8	4.5	7.7	7.7	34.3	0.0	5.1	34.3	0.0	1.3
Prop In Lane	1.00		0.21	1.00		0.07	0.29		1.00	0.08		1.00
Lane Grp Cap(c), veh/h	95	551	558	113	567	589	155	0	648	432	0	648
V/C Ratio(X)	0.80	0.83	0.83	0.80	0.38	0.38	2.48	0.00	0.23	0.59	0.00	0.06
Avail Cap(c_a), veh/h	201	684	694	185	664	691	155	0	648	432	0	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	25.0	25.0	36.7	20.2	20.2	19.9	0.0	14.5	18.3	0.0	13.5
Incr Delay (d2), s/veh	14.4	6.8	6.7	12.4	0.4	0.4	683.6	0.0	0.2	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	8.5	8.6	2.1	2.9	3.0	31.0	0.0	1.6	3.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	31.8	31.7	49.1	20.6	20.6	703.5	0.0	14.7	20.5	0.0	13.5
LnGrp LOS	D	C	C	D	C	C	F	A	B	C	A	B
Approach Vol, veh/h		993			527			535				297
Approach Delay, s/veh		33.3			25.5			509.1				19.5
Approach LOS		C			C			F				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	30.7		39.0	9.4	31.7		39.0				
Change Period (Y+Rc), s	* 4.7	* 4.7		* 4.7	* 4.7	* 4.7		* 4.7				
Max Green Setting (Gmax), s	* 9.3	* 32		* 34	* 10	* 32		* 34				
Max Q Clear Time (g_c+I1), s	6.5	21.8		36.3	5.7	9.7		36.3				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	2.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	138.0
HCM 6th LOS	F

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.