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## Traffic Feasibility Study

Town Center South  
Robbinsville Township, Mercer County, New Jersey

December 19, 2017

*Prepared For*

Robbinsville Township  
Department of Community Development  
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## TABLE OF CONTENTS

I. INTRODUCTION .....	1
II. EXISTING ROADWAY CONDITIONS.....	3
III. EXISTING TRAFFIC CONDITIONS .....	6
IV. TRIP GENERATION & DISTRIBUTION.....	8
V. 2027 NO-BUILD TRAFFIC CONDITIONS .....	13
VI. POTENTIAL IMPROVEMENT ALTERNATIVES .....	14
VII. 2027 BUILD TRAFFIC CONDITIONS .....	21
VIII. HCM CAPACITY ANALYSIS.....	22
IX. SUMMARY AND CONCLUSIONS .....	29

## TABLES

Table 1 – Data Collection Efforts and Established Peak Hours.....	6
Table 2 – Scenario A Site Generated Trips .....	8
Table 3 – Scenario B Site Generated Trips.....	9
Table 4 – Scenario A Site Generated Trips with Internal Capture and Pass-by Trips.....	10
Table 5 – Scenario B Site Generated Trips with Internal Capture and Pass-by Trips.....	10
Table 6 – HCM: Signalized & Unsignalized LOS/Delay Criteria .....	22
Table 7 – Level of Service Summary (1 of 2).....	23
Table 8 – Level of Service Summary (2 of 2).....	24
Table 9 – Land Use Scenarios for Trip Generation .....	29

## APPENDICES

Appendix A.....	Traffic Figures
Appendix B.....	Existing Data
Appendix C.....	Trip Generation
Appendix D.....	Capacity Analysis

## **I. INTRODUCTION**

This Traffic Feasibility Study has been prepared for the Robbinsville Township Department of Community Development to analyze existing and future conditions, as well as recommend infrastructure improvements, in the vicinity of a potential mixed-use development known as “Town Center South” within Robbinsville Township, Mercer County, New Jersey. The subject property is located within the Town Center South – Redevelopment Area (TCS-RA) Zoning District. The study area for the project is along NJSH Route 33 between Washington Boulevard and Route 130. A study location map is included as **Figure 1** in **Appendix A**.

### **Study Area**

The infrastructure in the vicinity of the subject property services regional transient and local traffic volumes as NJSH Route 33 and US Route 130 are both urban principal arterials and Robbinsville-Allentown Road is an urban minor arterial. The following intersections were analyzed in the existing and future conditions in the vicinity of the subject property:

- NJSH Route 33 & Washington Boulevard/Golden Crest Driveway;
- NJSH Route 33 & Lake Drive;
- NJSH Route 33 & North Commerce Square;
- NJSH Route 33 & Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526);
- US Route 130 & Robbinsville-Allentown Road; and
- US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526).

### **Development Scenarios**

Potential redevelopment scenarios of the subject property include a mix of land uses. Two land use development scenarios were reviewed. The development scenarios include the following land uses:

- Apartment residential units;
- Age-restricted residential units;
- Ground floor commercial space;
- Hotel;
- Community Center;
- Medical Office Space; and
- Open Space (i.e. park).

### **Analysis Methodology**

The two development scenarios were established by performing a trip intensity sensitivity analysis. The maximum trip limits were established based upon traffic operations and permitting potential. The capacity analysis conducted was based upon the maximum trip limits of the development scenarios.

This study presents an evaluation of the current and future traffic conditions in the vicinity of the potential development and recommends infrastructure to support the increase in site generated trips. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the project, including the existing physical and traffic operating characteristics;
- Determination of the Existing Conditions;
- Site Generated Trips described in the ITE Trip Generation Manual, 10<sup>th</sup> Edition;
- Trip Distributions and Assignments;
- Forecast of 2027 No-Build Traffic Conditions;
- Improvement Alternatives Assessment;
- Forecast of 2027 Build Traffic Conditions;
- Peak Hour Capacity Analysis for the 2027 No-Build and Build Conditions; and
- Summary and Conclusions.

## II. EXISTING ROADWAY CONDITIONS

A field investigation was conducted adjacent to the project site to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

### Roadways

**NJSH Route 33** is an east-west oriented urban principal arterial under the jurisdiction of the New Jersey Department of Transportation (“NJDOT”). Within the project vicinity, the roadway supports one travel lane in each direction divided by a two-way left-turn lane. Shoulders are provided in both directions with a parking lane in the westbound direction. The posted speed limit is 45 MPH.

**US Route 130** is a north-south oriented urban principal arterial under the jurisdiction of the NJDOT. Within the project vicinity, the roadway supports two travel lanes in each direction divided by a grass median. Shoulders are provided in both directions. The posted speed limit is 55 MPH.

**Robbinsville-Edinburg Road (CR 526)** is a north-south oriented urban minor arterial under the jurisdiction of Mercer County. Within the project vicinity, the roadway supports one travel lane in each direction with shoulders. In the vicinity of the existing Washington Town Center, Robbinsville-Edinburg Road provided left-turn lanes at Union Street, Yard Street and Park Street. The posted speed limit is 35 MPH.

**Robbinsville-Allentown Road** is a northwest-southeast oriented urban minor arterial under the jurisdiction of Robbinsville Township. South of its intersection with NJSH Route 33, the roadway name is Robbinsville-Edinburg Road (CR 526). Within the project vicinity, the roadway supports one travel lane in each direction with shoulders. The posted speed limit is 35 MPH.

**Washington Boulevard** is a north-south oriented urban major collector under the jurisdiction of Robbinsville Township. Within the vicinity of the project, the roadway supports one travel lane in each direction divided by a grass median. Shoulders are provided in both directions. The posted speed limit is 35 MPH.

**Lake Drive** is a north-south oriented roadway providing access to the existing Washington Town Center on the north side of NJSH Route 33. Within the vicinity of the project, the roadway supports one travel lane in each direction. The posted speed limit is 25 MPH.

**North Commerce Square** is a north-south oriented roadway providing access to the existing Washington Town Center on the north side of NJSH Route 33. Within the vicinity of the project, the roadway supports one lane in each direction divided by a grass median. There is no posted speed limit.

### **Signalized Intersections**

**NJSH Route 33 and Washington Boulevard/Golden Crest Driveway** is a signalized four-leg intersection controlled by a traffic signal. NJSH Route 33 represents the eastbound and westbound approaches. Washington Boulevard represents the southbound approach and Golden Crest Driveway represents the northbound approach. The eastbound and westbound approaches provide one dedicated left-turn lane, one dedicated through lane, and one dedicated right-turn lane. The northbound approach provides one dedicated left-turn lane and one shared through/right-turn lane. The southbound approach provides one shared left-turn/through lane and one dedicated right-turn lane. The traffic signal is semi-actuated and coordinated on a 90 second cycle length with three phases in the following sequence:

- NJSH Route 33 eastbound and westbound lead lefts;
- NJSH Route 33 eastbound and westbound ROW; and
- Washington Boulevard/Golden Crest Driveway northbound/southbound ROW.

**NJSH Route 33 and Lake Drive** is a signalized four-leg intersection controlled by a traffic signal. NJSH Route 33 represents the eastbound and westbound approaches. Lake Drive represents the northbound and southbound approaches. The eastbound and westbound approaches each provide one dedicated left-turn lane and one shared through/right turn lane. The northbound and southbound approaches each provide one dedicated left-turn lane and one shared through/right-turn lane. The traffic signal is semi-actuated and coordinated on a 90 second cycle length with three phases in the following sequence:

- NJSH Route 33 eastbound and westbound lead lefts;
- NJSH Route 33 eastbound and westbound ROW; and
- Lake Drive northbound and southbound ROW.

**NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526)** is a signalized four-leg intersection controlled by a traffic signal. NJSH Route 33 represents the eastbound and westbound approaches. Robbinsville-Edinburg Road (CR 526) represents the southbound approach and Robbinsville-Allentown Road represents the northwestbound approach. The eastbound approach provides one dedicated left-turn lane, one dedicated through lane, and one dedicated right-turn lane. The westbound approach provides one dedicated through lane and one dedicated right-turn lane. The southbound approach provides one dedicated left-turn lane to NJSH Route 33, one dedicated left-turn lane to Robbinsville-Allentown Road, and one dedicated right-turn lane. The northwestbound approach provides one shared lane for all movements. The traffic signal is semi-actuated on a variable 67-124 second cycle length with four phases in the following sequence:

- NJSH Route 33 eastbound lead left;
- NJSH Route 33 eastbound and westbound ROW;
- Robbinsville-Edinburg Road (CR 526) southbound ROW; and
- Robbinsville-Allentown Road northbound ROW.

**US Route 130 and Robbinsville-Allentown Road** is a signalized four-leg intersection controlled by a traffic signal. US Route 130 represents the northbound and southbound approaches. Robbinsville-Allentown Road represents the eastbound and westbound approaches. The northbound and southbound approaches provide one dedicated left-turn lane, two dedicated through lanes, and one dedicated right-turn lane. The eastbound approach provides one shared lane for all movements with right-turn channelization. The westbound approach provides one dedicated left-turn lane and one shared through/right-turn lane. The traffic signal is semi-actuated and coordinated on a 120 second cycle length during the AM peak period, a 130 second cycle length during the PM peak period, and a 115 second cycle length during the Saturday midday peak period with three phases in the following sequence:

- US Route 130 northbound and southbound ROW;
- Robbinsville-Allentown Road eastbound and westbound ROW; and
- US Route 130 northbound and southbound lead lefts.

**US Route 130 and NJSH Route 33** is a signalized four-leg intersection controlled by a traffic signal. NJSH Route 33 represents the eastbound and westbound approaches. US Route 130 represents the northbound and southbound approaches. The eastbound approach provides two dedicated left-turn lanes, one dedicated through lane, and a shared through/right-turn lane with channelization. The westbound approach provides one dedicated left-turn lane, one dedicated through lane, and one shared through/right-turn lane with channelization. The northbound approach provides two dedicated through lanes and a shared through/right-turn lane. Left-turns and U-turns are accommodated via a far-side jug handle. The southbound approach provides two dedicated through lanes and a shared through/right-turn lane with channelization. Left-turns and U-turns are accommodated via a far-side jug-handle. The traffic signal is semi-actuated and coordinated on a 120 second cycle length during the AM peak period, a 130 second cycle length during the PM peak period, and a 115 second cycle length during the Saturday midday peak period with three phases in the following sequence:

- US Route 130 northbound and southbound ROW;
- NJSH Route 33 eastbound and westbound lead lefts; and
- NJSH Route 33 eastbound and westbound ROW.

All traffic signal timing directives are provided in **Appendix B**.

### **Unsignalized Intersection**

**NJSH Route 33 and North Commerce Square** is an unsignalized T-intersection that is stop-controlled in the southbound direction. NJSH Route 33 represents the eastbound and westbound approaches. North Commerce Square represents the southbound approach. The eastbound approach provides one dedicated left-turn lane and one dedicated through lane. The westbound approach provides one shared through/right-turn lane. The southbound approach provides one dedicated right-turn lane. Egress southbound left-turn from North Commerce Square are prohibited.

### III. EXISTING TRAFFIC CONDITIONS

Traffic data was collected within the area to gain an understanding of the existing roadway conditions and operations. The following subsections summarize the data collection efforts.

#### MioVision Video Camera Installations

MioVision traffic video cameras were installed and collected intersection turning movement count data on Tuesday, September 12, 2017 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM and on Saturday, September 9, 2017 from 11:00 AM to 1:00 PM. MioVision traffic video cameras were installed at the following intersections:

- NJSH Route 33 and Washington Boulevard;
- NJSH Route 33 and Lake Drive;
- NJSH Route 33 and North Commerce Square;
- NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526);
- US Route 130 and Robbinsville-Allentown Road; and
- US Route 130 & NJSH Route 33.

The data collection occurred while local schools were on a normal schedule and not on any major holidays. The data collection efforts and the network peak hours are detailed in **Table 1**. The processed manual count data is provided in **Appendix B**.

**Table 1 – Data Collection Efforts and Established Peak Hours**

Peak Period	Date Collected	Traffic Count Time Frame	Network Peak Hour
Morning (AM) Peak Period	Tuesday, September 12, 2017	7:00 AM – 9:00 AM	7:30 AM – 8:30 AM
Evening (PM) Peak Period		4:00 PM – 6:00 PM	5:00 PM – 6:00 PM
Saturday Midday (SAT) Peak Period	Saturday, September 9, 2017	11:00 AM – 1:00PM	12:00 PM – 1:00 PM

#### Automatic Traffic Recorders

Automatic Traffic Recorders (“ATRs”) were installed within the study area at the following locations:

- US Route 130 north of NJSH Route 33;
- NJSH Route 33 between Robbinsville-Edinburg Road (CR 526) and US Route 130; and
- NJSH Route 33 between Washington Boulevard and Lake Drive.

The ATRs were installed from Thursday, September 7, 2017 to Thursday, September 14, 2017 to capture a week of traffic data. The processed automatic count data is provided in **Appendix B**.



### **Existing Traffic Volumes**

The ATR and MioVision data were cross-referenced to establish the Existing Traffic Conditions. The ATR data was consistent with the MioVision data. The volume differentials between the intersections studied were balanced in an upward fashion to provide a conservative analysis. The existing data was processed and validated.

A Volume Flow Diagram illustrating the Existing Traffic Volumes is provided as **Figure 2** in **Appendix A**.

## IV. TRIP GENERATION & DISTRIBUTION

### Trip Generation

The trips generated by the potential development were estimated based upon the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10<sup>th</sup> Edition*. This publication establishes trip generation rates based on land use and traffic studies conducted throughout the country.

For the two trip generation scenarios, the following land use codes were utilized to generate the site generated trips for the potential development. These are the closest related land uses and accurately describe the potential development:

- Land Use Code 220 – Multifamily Housing (Low-Rise);
- Land Use Code 252 – Senior Adult Housing – Attached;
- Land Use Code 820 – Shopping Center;
- Land Use Code 310 – Hotel;
- Land Use Code 495 – Recreational Community Center;
- Land Use Code 720 – Medical/Dental Office Building; and
- Land Use Code 412 – County Park.

The ‘Trip Generation Scenario A’ was based upon previous information provided by the Township regarding the project. ‘Trip Generation Scenario B’ was established based upon a sensitivity analysis performed between the residential, hotel and commercial land uses. The commercial gross floor area was reduced and the hotel land use was eliminated to increase the residential unit counts in ‘Trip Generation Scenario B.’ The maximum peak hour trip generation thresholds were maintained. The estimates for ‘Trip Generation Scenarios A and B’ are provided in **Tables 2** and **3**, respectively. The comprehensive trip generation worksheets are provided in **Appendix C**.

**Table 2 – Scenario A Site Generated Trips**

ITE Trip Generation		AM Peak			PM Peak			SAT Peak		
Land Use	Size	In	Out	Total	In	Out	Total	In	Out	Total
220 - Multifamily Housing (Low-Rise)	375 Units	38	129	167	121	71	192	186	186	372
252 - Senior Adult Housing - Attached	200 Units	14	26	40	28	22	50	42	26	68
820 - Shopping Center	30,000 SF	104	63	167	107	116	223	124	115	239
310 - Hotel	150 Rooms	42	29	71	46	44	90	60	48	108
495 - Recreational Community Center	30,000 SF	35	18	53	32	37	69	17	15	32
720 - Medical/Dental Office Building	20,000 SF	44	12	56	19	50	69	35	27	62
412 - County Park	10 Acres	0	0	0	13	10	23	15	13	28
<b>Subtotal</b>		<b>277</b>	<b>277</b>	<b>554</b>	<b>366</b>	<b>350</b>	<b>716</b>	<b>479</b>	<b>430</b>	<b>909</b>

**Table 3 – Scenario B Site Generated Trips**

ITE Trip Generation		AM Peak			PM Peak			SAT Peak		
Land Use	Size	In	Out	Total	In	Out	Total	In	Out	Total
220 - Multifamily Housing (Low-Rise)	520 Units	52	176	228	161	95	256	264	264	528
252 - Senior Adult Housing - Attached	200 Units	14	26	40	28	22	50	42	26	68
820 - Shopping Center	20,000 SF	100	62	162	79	86	165	90	84	174
495 - Recreational Community Center	30,000 SF	35	18	53	32	37	69	17	15	32
720 - Medical/Dental Office Building	20,000 SF	44	12	56	19	50	69	35	27	62
412 - County Park	10 Acres	0	0	0	13	10	23	15	13	28
<b>Subtotal</b>		<b>245</b>	<b>294</b>	<b>539</b>	<b>332</b>	<b>300</b>	<b>632</b>	<b>463</b>	<b>429</b>	<b>892</b>

### *Internal Capture*

Internal capture is identified by the ability for a trip to access multiple land uses by either pedestrian or vehicular means without traveling on the major street system. Internal Capture Rate is the percentage reduction applicable to the site generated trips which is provided by ITE within the *Trip Generation User's Guide and Handbook*.

The ITE provides internal capture rates describing trip origins and trip destinations to/from retail, office and residential developments. The rates are an estimate of typical internal capture experienced at the multi-land use sites studied. For this site, the ITE internal trip rates to/from retail, residential, and office were applied to Land Use Code 220, Land Use Code 252, Land Use Code 310, Land Use Code 720, and Land Use Code 820.

### *Pass-By Trips*

Pass-By Trips are those trips which are not made for the sole purpose of patronizing the potential development, and are currently within the existing traffic volumes. An example of a pass-by trip would be a motorist, whose existing commuting route makes use of the adjacent roadway, which directly intersects a proposed driveway. After the development is constructed, this motorist may elect to make an intermediate shopping trip at the subject development while conducting their normal commuting trip. This trip is not 'new' to the roadway network, as it already existed prior to the development being constructed. The only impact this trip would have on the road network would be the increase in traffic for ingress and egress movements at the proposed site driveway intersection.

Within the *ITE Trip Generation Handbook*, pass-by rates have been established for individual land uses. These rates are published as a percentage of the total site generated traffic. They are based on numerous site studies where surveys were conducted to determine if the trip was a primary destination or an intermediate trip. ITE publishes an average pass-by rate for a shopping center use of 34% during the weekday evening peak hour and 26% during the Saturday midday peak hour. It is noted 100% of the pass-by traffic was assumed to come from/depart to NJSH Route 33.

The estimates for ‘Trip Generation Scenarios A and B’ with internal capture and pass-by trips included are provided in **Tables 4 and 5**, respectively. The comprehensive trip generation worksheets are provided in **Appendix C**.

**Table 4 – Scenario A Site Generated Trips with Internal Capture and Pass-by Trips**

ITE Trip Generation Land Use	AM Peak			PM Peak			SAT Peak		
	In	Out	Total	In	Out	Total	In	Out	Total
Residential and Hotel	94	184	278	195	137	332	288	260	548
<i>Internal Capture</i>	0	0	0	19	13	32	43	52	95
External Trips	<b>94</b>	<b>184</b>	<b>278</b>	<b>176</b>	<b>124</b>	<b>300</b>	<b>245</b>	<b>208</b>	<b>453</b>
Commercial	139	81	220	139	153	292	141	130	271
<i>Internal Capture</i>	0	0	0	16	23	39	49	42	91
External Trips	139	81	220	123	130	253	92	88	180
<i>Pass-by (34% PM, 26% SAT)</i>	0	0	0	43	43	86	23	23	46
Primary Trips	<b>139</b>	<b>81</b>	<b>220</b>	<b>80</b>	<b>87</b>	<b>167</b>	<b>69</b>	<b>65</b>	<b>134</b>
Medical Office	44	12	56	19	50	69	35	27	62
<i>Internal Capture</i>	0	0	0	5	4	9	12	10	22
External Trips	<b>44</b>	<b>12</b>	<b>56</b>	<b>14</b>	<b>46</b>	<b>60</b>	<b>23</b>	<b>17</b>	<b>40</b>
Recreational	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>10</b>	<b>23</b>	<b>15</b>	<b>13</b>	<b>28</b>
<i>Total Pass-by</i>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>43</b>	<b>86</b>	<b>23</b>	<b>23</b>	<b>46</b>
<b>Total Primary Trips</b>	<b>277</b>	<b>277</b>	<b>554</b>	<b>283</b>	<b>267</b>	<b>550</b>	<b>352</b>	<b>303</b>	<b>655</b>

**Table 5 – Scenario B Site Generated Trips with Internal Capture and Pass-by Trips**

ITE Trip Generation Land Use	AM Peak			PM Peak			SAT Peak		
	In	Out	Total	In	Out	Total	In	Out	Total
Residential and Hotel	66	202	268	189	117	306	306	290	596
<i>Internal Capture</i>	0	0	0	19	13	32	43	52	95
External Trips	<b>66</b>	<b>202</b>	<b>268</b>	<b>170</b>	<b>104</b>	<b>274</b>	<b>263</b>	<b>238</b>	<b>501</b>
Commercial	135	80	215	111	123	234	107	99	206
<i>Internal Capture</i>	0	0	0	16	23	39	49	42	91
External Trips	139	80	215	95	100	195	58	57	115
<i>Pass-by (34% PM, 26% SAT)</i>	0	0	0	33	33	66	15	14	29
Primary Trips	<b>135</b>	<b>80</b>	<b>215</b>	<b>62</b>	<b>67</b>	<b>129</b>	<b>43</b>	<b>43</b>	<b>86</b>
Medical Office	44	12	56	19	50	69	35	27	62
<i>Internal Capture</i>	0	0	0	5	4	9	12	10	22
External Trips	<b>44</b>	<b>12</b>	<b>56</b>	<b>14</b>	<b>46</b>	<b>60</b>	<b>23</b>	<b>17</b>	<b>40</b>
Recreational	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>10</b>	<b>23</b>	<b>15</b>	<b>13</b>	<b>28</b>
<i>Total Pass-by</i>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>33</b>	<b>66</b>	<b>15</b>	<b>14</b>	<b>29</b>
<b>Total Primary Trips</b>	<b>245</b>	<b>294</b>	<b>539</b>	<b>259</b>	<b>227</b>	<b>486</b>	<b>344</b>	<b>311</b>	<b>655</b>

## **Trip Distribution**

Trip distribution methodology is developed based on a variety of factors. These factors include the existing travel patterns within the adjacent roadway network, adjacent land uses, proposed land use, development locations, driveway locations and the proximity of major arterials within the project vicinity.

### *Primary Trip Distribution*

The primary trip distribution was established based upon the existing roadway traffic volumes in the study area. Based upon the existing roadway traffic volumes, the following primary trip distribution was utilized:

- To/from NJSH Route 33, West of Site – 25%
- To/from US Route 130, North of Site – 25%
- To/from Robbinsville By-Pass, East of Site – 15%
- To/from US Route 130, South of Site:
  - Via Robbinsville-Allentown Road – 10%
  - Via NJSH Route 33 – 5%
- To/from Robbinsville-Edinburg Road (CR 526), North of Site – 10%
- To/from Washington Boulevard, North of Site – 5%
- To/from Robbinsville-Allentown Road, East of Site – 5%

A Volume Flow Diagram illustrating the Primary Trip Distribution is provided as **Figure 3** in **Appendix A**. A Volume Flow Diagram illustrating the Primary Site Generated Trips is provided as **Figure 4** in **Appendix A**.

### *Pass-By Trip Distribution*

The pass-by trip distribution was established based upon the existing roadway traffic volumes in the study area. Based upon the existing roadway traffic volumes, the following pass-by trip distribution was utilized:

- From NJSH Route 33, West of Site – 35%
- From NJSH Route 33, East of Site – 35%
- From Robbinsville-Edinburg Road (CR 526), North of Site – 15%
- From Robbinsville-Allentown Road, South of Site – 15%

A Volume Flow Diagram illustrating the Pass-by Trip Distribution is provided as **Figure 5** in **Appendix A**. A Volume Flow Diagram illustrating the Pass-by Site Generated Trips is provided as **Figure 6** in **Appendix A**. A Volume Flow Diagram illustrating the Total Site Generated Trips is provided as **Figure 7** in **Appendix A**.

### **Trip Scenario Assessment**

The trip distribution patterns between residential, hotel and retail are anticipated to be similar. Therefore, the sensitivity analysis between 'Trip Scenario A' and 'Trip Scenario B' would not change the trip distribution patterns. Therefore, both Trip Scenarios are anticipated to have comparable impacts to traffic operations and will necessitate similar infrastructure improvements. The more conservative 'Trip Scenario A' was utilized in the capacity analysis.

## V. 2027 NO-BUILD TRAFFIC CONDITIONS

An estimation of the traffic operational characteristics at the build date, *without* the construction of the project (or “No-Build” condition) is made to determine the traffic impact of the development. The existing volumes are forecasted to the build year of 2027.

### *Background Growth*

A general background growth rate was applied to the transient traffic volumes within the study area to account for general increases in traffic due to regional population and employment growth by the build year. The 2027 No-Build traffic volumes were forecasted by applying a background growth rate using US Census Data Population Estimates of Mercer County. Using the US Census Data for 2000 and 2010 the background growth rate was established as 0.44%. A Volume Flow Diagram illustrating the 2027 No-Build traffic volumes is provided as **Figure 8** in **Appendix A**.

## **VI. POTENTIAL IMPROVEMENT ALTERNATIVES**

Traffic infrastructure improvements were investigated within the study area to support site access and additional site trips generated by Town Center South. NJDOT consideration, right-of-way and design considerations, benefits and impacts were investigated to determine the needed improvements within the study area. Each intersection in the study area was investigated.

### **NJSH Route 33 and US Route 130**

In order to support the additional traffic demand and signal operation, traffic signal timing optimization was investigated at this intersection.

### **US Route 130 and Robbinsville-Allentown Road**

In order to support the additional traffic demand and signal operation, traffic signal timing optimization was investigated at this intersection.

### **NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526)**

#### **Alternative 1 – Ingress/Egress Connection with Jughandle**

Alternative 1 includes the construction of a jughandle from Robbinsville-Allentown Road into Town Center South towards NJSH Route 33 across from Robbinsville-Edinburg Road (CR 526). Under this alternative, an entrance and exit would be provided at the signalized intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). The jughandle would eliminate the Robbinsville-Allentown Road Northbound approach at the subject intersection. With the elimination of the Robbinsville-Allentown Road Northbound approach, the traffic signal can operate on a four-phase cycle without the inside-outside signal clearances. In order to support the additional traffic demand and signal operation, the following physical improvements will be needed:

- Construction of a jughandle between Robbinsville-Allentown Road and NJSH Route 33 across from Robbinsville-Edinburg Road (CR 526). The jughandle will provide ingress and egress access between the traffic signal and Town Center South.
- Restriping Robbinsville-Edinburg Road (CR 526) to provide a Southbound through lane.
- Construction of an NJSH Route 33 Eastbound through lane and restriping to provide a second receiving lane.
- Construction of an NJSH Route 33 Westbound left-turn lane.
- Restriping NJSH Route 33 to provide a Westbound through lane and a second receiving lane.
- Traffic signal improvements.



### *NJDOT Consideration*

An NJDOT Access Permit will be required for the improvements.

### *Right-of-Way and Design Considerations*

The roadway widening associated with the additional lane capacity on NJSH Route 33 will primarily be located to the south on the subject property. Four to five utility poles may need relocation. The jughandle is anticipated to require a partial taking totaling approximately 14,000 SF to 16,000 SF of Block 1, Lot 30. Right-of-way and utility impacts should be determined during Concept Design.

The advanced lane assignment overhead mast arm along Robbinsville-Edinburg Road (CR 526) Southbound will have to be relocated or reconstructed. Additionally, on-street parking along NJSH Route 33 will be impacted from the additional lanes on NJSH Route 33. However, the additional capacity will be necessary to promote acceptable vehicular operations.

### *Overall Benefits and Impacts*

The **benefits** of Alternative 1 are summarized as follows:

- Provides ingress and egress access for Town Center South.
- Promotes acceptable traffic operations.
- Less turning maneuver conflicts than Alternative 2.
- Elimination of the inside-outside signal clearances, which would provide a more favorable application to NJDOT than Alternative 2.

The **impacts** of Alternative 1 are summarized as follows:

- The jughandle is anticipated to require a partial taking totaling approximately 14,000 SF to 16,000 SF of Block 1, Lot 30. Requires roadway and traffic signal improvements.
- The advanced lane assignment overhead mast arm along Robbinsville-Edinburg Road (CR 526) Southbound will have to be relocated or reconstructed.
- Four to five utility poles may need relocation.
- Impacts to on-street parking along NJSH Route 33.
- Potential impacts to the characteristics of a “Town Center” environment with the removal of on-street parking and additional travel lanes along NJSH Route 33.

### Alternative 2 – Ingress Connection

Alternative 2 includes the construction of an ingress only driveway from the signalized intersection south into Town Center South. Under this alternative, an entrance only would be constructed as the fifth leg at the signalized intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). As only ingress access will be provided at this location, the traffic signal can continue to operate on a four-phase cycle. In order to support the additional traffic demand and signal operation, the following physical improvements will be needed:

- Restriping Robbinsville-Edinburg Road (CR 526) to provide a Southbound through lane.
- Construction of an NJSH Route 33 Eastbound through lane and restriping to provide a second receiving lane.
- Construction of an NJSH Route 33 Westbound left-turn lane.
- Restriping NJSH Route 33 to provide a Westbound through lane and a second receiving lane.
- Construction of the ingress only driveway at the traffic signal.
- Traffic signal improvements.

### *NJDOT Consideration*

A NJSH Route 33 Westbound left-turn lane will be needed to provide access into the new driveway from NJSH Route 33 Westbound and from Robbinsville-Allentown Road Northbound. However, there is an existing inside-outside signal clearance operation for NJSH Route 33 Westbound and from Robbinsville-Allentown Road Northbound due to the existing configuration at the traffic signal. This inside-outside signal clearance creates an undesirable condition for the NJSH Route 33 Westbound left-turn operation to support maneuvers from NJSH Route 33 Westbound and from Robbinsville-Allentown Road Northbound. Safety and driver awareness issues may arise with this configuration. Therefore, the additional inside-outside signal clearance needed and potential turning maneuver conflict may not be approvable by the NJDOT.

### *Right-of-Way and Design Considerations*

The roadway widening associated with the additional lane capacity on NJSH Route 33 will primarily be located to the south on the subject property. Four to five utility poles may need relocation. Utility impacts should be determined during Concept Design. The advanced lane assignment overhead mast arm along Robbinsville-Edinburg Road (CR 526) Southbound will have to be relocated or reconstructed. Additionally, on-street parking along NJSH Route 33 will be impacted from the additional lanes on NJSH Route 33. However, the additional capacity will be necessary to promote acceptable vehicular operations.

### *Overall Benefits and Impacts*

The **benefits** of Alternative 2 are summarized as follows:

- Provides ingress access to Town Center South.
- Less right-of-way acquisition needed than a jughandle.

The **impacts** of Alternative 2 are summarized as follows:

- Inside-outside signal clearance within the intersection creates a potential safety issue with the NJSH Route 33 Westbound left-turn operation. This improvement may not be approvable by the NJDOT.
- No egress connection at NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526) for Town Center South.
- Requires roadway and traffic signal improvements.
- The advanced lane assignment overhead mast arm along Robbinsville-Edinburg Road (CR 526) Southbound will have to be relocated or reconstructed.
- Four to five utility poles may need relocation.
- Impacts to on-street parking along NJSH Route 33.
- Potential impacts to the characteristics of a “Town Center” environment with the removal of on-street parking and additional travel lanes along NJSH Route 33.

### Alternative Recommendation

Alternative 2 is not recommended due to the undesirable inside-outside signal clearance, which may not be approvable by the NJDOT. Alternative 1 provides enhanced traffic operations and eliminates the inside-outside signal clearance at the intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). Alternative 1 is the preferred alternative between Alternatives 1 and 2. However, please note, both Alternatives will require additional travel lanes along Route 33. Both Alternatives may have an impact to the characteristics of a “Town Center” environment with the removal of on-street parking and additional travel lanes along NJSH Route 33. The benefits and impacts of the improvements should be considered during the planning process of redevelopment area.

### **NJSH Route 33 and North Commerce Square**

#### **Alternative 1 – Maintain Unsignalized Control and Prohibit Egress Left/Through Turns**

Alternative 1 includes providing a site access to Town Center South and maintaining unsignalized control. Due to the traffic flow on NJSH Route 33, the site driveway northbound egress left-turns and through maneuvers will need to be prohibited. Restriping for a NJSH Route 33 westbound left-turn lane will provide left-in access to Town Center South. This configuration is similar to the existing unsignalized access points on the north side of NJSH Route 33. This condition will provide acceptable traffic operations.

#### **Alternative 2 – Construct a Traffic Signal**

Alternative 2 includes the construction of a traffic signal at the intersection of NJSH Route 33 and North Commerce Square to provide full-movement for a new site access. However, in accordance with the signalized spacing standards found in Section 16:47-3.4 of the New Jersey Access Code, the permitted signalized spacing for the NJSH Route 33 corridor is 2,640 feet. The distance between a proposed traffic signal at the intersection of NJSH Route 33 and North Commerce Square and the existing signalized intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526) is approximately 550 feet.

#### **Alternative Recommendation**

Alternative 2 may not be feasible due to NJDOT traffic signal spacing criteria. Therefore, Alternative 1 is recommended to promote acceptable operations. An NJDOT Access Permit will be required.

### **NJSH Route 33 and Lake Drive**

#### **Alternative 1 – Connection to Town Center South**

Egress left-turns will not be permitted at the intersection of NJSH Route 33 and North Commerce Square should a traffic signal at North Commerce Square not be feasible. Therefore, a connection to the existing signalized intersection of NJSH Route 33 and Lake Drive will be a significant benefit to Town Center South and NJSH Route 33 corridor operations in the study area. A portion of the egress left-turn trips will be provided signalized right-of-way to access NJSH Route 33 without the need for a new traffic signal or to add additional demand to the intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). This connection will be vital should a signal not be permitted at the intersection of NJSH Route 33 and North Commerce Square.

It is anticipated that the existing intersection lane geometry and traffic signal equipment will be sufficient to support the additional demand generated by Town Center South.

#### **Alternative 2 – No Connection to Town Center South**

Should no connection be provided between the intersection of NJSH Route 33 and Lake Drive and Town Center South then a signal would be required at the intersection of NJSH Route 33 and North Commerce Square to promote acceptable traffic operation.

#### **Alternative Recommendation**

Alternative 1 is recommended to provide a signalized access for egress left-turn from Town Center South at the intersection of NJSH Route 33 and Lake Drive. NJSH Route 33 and Lake Drive should be envisioned as a part of the Washington Town Center Area Plan to provide connection to both the north and south sides of NJSH Route 33.

### **NJSH Route 33 and Washington Boulevard/Golden Crest Driveway**

#### **Alternative 1 – No Connection to Town Center South**

For the purposes of the Traffic Feasibility Study, the intersection of NJSH Route 33 and Washington Boulevard/Golden Crest Driveway was not anticipated to provide access into and out of the site. With unknown variables of the potential future Washington Boulevard bypass, the NJSH Route 33 corridor was analyzed in the Build condition without the bypass. This conservative analysis was conducted to investigate if the operating characteristics of the study area are conducive to support the additional trips generated by Town Center South without the additional connection.

#### **Alternative 2 – Connection to Town Center South**

Should the Washington Boulevard bypass be extended, then an additional signalized site connection could be provided to give access to the intersection of NJSH Route 33 and Washington Boulevard/Golden Crest Driveway. The capacity analyses were conducted without this connection to determine if Town Center South could operate prior to this additional connection. Should the connection to Washington Boulevard be implemented in the future it is anticipated that traffic impacts would be reduced.

#### **Alternative Recommendation**

Long-term planning should be progressed on the Washington Boulevard bypass to provide connectivity to Town Center South. However, the capacity analyses in this study were conducted without this connection to determine if the operating characteristics of the study area are conducive to support the additional trips generated by Town Center South without the additional connection.

## **VII. 2027 BUILD TRAFFIC CONDITIONS**

The 2027 No-Build traffic volumes were redistributed to reflect the recommended infrastructure improvement alternatives. The site generated trips were added to the 2027 No-Build traffic volumes to simulate the 2027 Build traffic conditions. The proposed improvements were reflected in these conditions. A Volume Flow Diagram illustrating the 2027 Build traffic volumes is provided as **Figure 9** in **Appendix A**.

## VIII. HCM CAPACITY ANALYSIS

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using *Synchro Trafficware*; a traffic analysis and simulation program. The results of these analyses provide Levels of Service (LOS), volume/capacity descriptions and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics such as freedom to maneuver, traffic interruption, comfort and convenience. Six LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F", with "A" representing excellent conditions with no delays and failure and deficient operations denoted by Level "F". The HCM LOS criteria for signalized and unsignalized intersections are summarized in **Table 6**.

**Table 6 – HCM: Signalized & Unsignalized LOS/Delay Criteria**

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
<b>A</b>	< 10	< 10
<b>B</b>	> 10 – 20	> 10 – 15
<b>C</b>	> 20 – 35	> 15 – 25
<b>D</b>	> 35 – 55	> 25 – 35
<b>E</b>	> 55 – 80	> 35 – 50
<b>F</b>	> 80	> 50

The level of service for the 2027 No-Build and 2027 Build conditions are detailed in **Tables 7** and **8**.



**Table 7 – Level of Service Summary (1 of 2)**

Intersection	Lane Group		2027 No-Build						2027 Build					
			AM Peak		PM Peak		SAT Peak		AM Peak		PM Peak		SAT Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>NJSH Route 33 (EB/WB) &amp; Washington Boulevard (NB/SB)</b>	EB	Left	B	13.0	C	23.0	B	10.3	B	17.6	D	35.1	B	12.9
		Thru	B	10.9	C	24.4	B	12.1	B	12.7	C	31.3	B	14.8
		Right	A	6.4	A	8.1	A	6.6	A	6.8	A	8.1	A	7.1
	WB	Left	A	6.9	B	15.2	A	8.0	A	8.1	B	18.2	A	9.7
		Thru	B	16.7	C	21.8	B	19.8	C	20.7	C	25.7	C	22.6
		Right	A	7.3	B	10.5	B	12.0	A	7.9	B	10.6	B	12.9
	NB	Left	D	42.2	D	45.4	D	42.0	D	42.3	D	46.2	D	42.1
		Thru/Right	C	32.7	C	31.2	C	33.0	C	31.8	C	31.2	C	31.8
	SB	Left/Thru	D	37.8	D	42.6	D	37.5	D	37.4	D	46.5	D	37.2
		Right	D	48.1	D	50.8	D	39.6	D	43.8	D	50.8	D	37.2
<b>Overall</b>		<b>B</b>	<b>19.1</b>	<b>C</b>	<b>27.0</b>	<b>B</b>	<b>19.6</b>	<b>C</b>	<b>20.9</b>	<b>C</b>	<b>31.8</b>	<b>C</b>	<b>21.1</b>	
<b>NJSH Route 33 (EB/WB) &amp; Lake Drive (NB/SB)</b>	EB	Left	A	5.0	A	7.0	A	4.0	A	6.3	A	8.5	A	5.9
		Thru/Right	A	1.5	A	3.1	A	1.3	A	8.4	B	16.2	A	8.9
	WB	Left	A	2.5	A	3.5	A	3.2	A	5.4	B	18	A	6.4
		Thru	A	7.6	B	10.8	A	7.0	A	9.3	B	12.6	A	8.6
		Right	A	2.9	A	3.8	A	3.3	A	3.4	A	4.3	A	3.9
	NB	Left	D	41.2	D	40.3	D	41.4	D	41.5	D	41.1	D	41.6
		Thru/Right	D	40.3	D	39.2	D	40.5	D	39.0	D	38.5	D	39.0
	SB	Left	D	40.9	D	41.5	D	41.3	D	39.9	D	41.1	D	40.1
		Thru/Right	D	40.6	D	39.6	D	41.3	D	38.6	D	38.1	D	38.9
	<b>Overall</b>		<b>A</b>	<b>6.1</b>	<b>A</b>	<b>8.2</b>	<b>A</b>	<b>5.0</b>	<b>B</b>	<b>10.9</b>	<b>B</b>	<b>16.5</b>	<b>B</b>	<b>10.8</b>
<b>NJSH Route 33 (EB/WB) &amp; North Commerce Square (NB/SB)</b>	EB	Left	b	10.3	b	10.6	a	9.5	b	10.3	b	10.5	a	9.5
	WB	Left	-	-	-	-	-	-	a	9.5	b	11.8	a	9.9
	NB	Right	-	-	-	-	-	-	b	14.7	c	24.7	c	16.3
	SB	Right	c	18.0	c	18.4	c	15.0	c	17.8	c	18.6	c	15.3

Note: uppercase indicates signalized intersection; lowercase indicates unsignalized intersection.

**Table 8 – Level of Service Summary (2 of 2)**

Intersection	Lane Group		2027 No-Build						2027 Build					
			AM Peak		PM Peak		SAT Peak		AM Peak		PM Peak		SAT Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
<b>NJSH Route 33 (EB/WB) &amp; Robbinsville-Allentown Road (NWB) / Robbinsville-Edinburg Road (CR 526) (SB) / Proposed Driveway (NB)</b>	EB	Left	E	61.9	F	82.2	E	65.0	D	45.2	D	47.6	D	44.1
		Thru	C	30.5	E	69.5	C	31.7	C	25.1	D	54.0	C	32.0
		Rights	B	13.4	B	17.5	B	15.0	C	24.9	D	53.2	C	31.7
	WB	Left	-	-	-	-	-	-	D	50.3	D	53.8	D	48.8
		Thru	F	127.3	F	203.3	E	67.0	C	21.6	C	27.2	C	22.3
		Right	D	49.2	D	51.4	D	38.1	C	25.5	C	29.7	C	22.8
	NWB	All	F	139.7	F	158.0	F	141.3	-	-	-	-	-	-
	NB	Left	-	-	-	-	-	-	D	37.5	D	41.2	D	38.5
		Thru/Right	-	-	-	-	-	-	D	42.8	D	52.3	D	45.8
	SB	Left	D	46.1	E	76.8	D	45.8	D	40.9	D	48.9	D	44.3
		Thru	E	57.1	D	53.0	E	61.8	C	26.1	C	25.6	C	24.7
		Right	D	43.7	D	44.1	D	43.8	C	27.1	C	27.1	C	25.8
<b>Overall</b>		<b>E</b>	<b>77.7</b>	<b>F</b>	<b>97.6</b>	<b>E</b>	<b>62.4</b>	<b>C</b>	<b>30.8</b>	<b>D</b>	<b>43.4</b>	<b>C</b>	<b>34.1</b>	
<b>US Route 130 (NB/SB) &amp; Robbinsville-Allentown Road (EB/WB)</b>	EB	All	D	40.5	D	50.6	D	48.9	D	40.0	D	50.2	D	48.6
	WB	Left	D	47.9	D	54.6	D	50.1	D	47.6	D	54.2	D	49.6
		Thru/Right	D	42.0	D	47.9	D	47.6	D	41.4	D	47.4	D	47.2
	NB	Left	F	102.7	F	135.4	F	108.4	F	100.6	F	131.5	F	93.6
		Thru	B	18.3	B	16.3	A	9.4	B	19.3	B	17.1	A	10.0
		Right	B	11.2	B	11.7	A	7.7	B	11.7	B	12.2	A	8.1
	SB	Left	E	63.8	E	66.2	E	60.6	E	63.8	E	66.2	E	60.5
		Thru	C	31.9	C	31.7	B	18.3	D	36.5	D	36.6	C	21.3
		Right	B	18.5	B	15.9	B	13.2	C	20.3	B	17.5	B	15.2
	<b>Overall</b>		<b>C</b>	<b>34.9</b>	<b>D</b>	<b>37.2</b>	<b>C</b>	<b>31.7</b>	<b>D</b>	<b>37.3</b>	<b>D</b>	<b>39.8</b>	<b>C</b>	<b>31.9</b>
<b>US Route 130 (NB/SB) &amp; NJSH Route 33 (EB) / Robbinsville By-Pass (CR 526) (WB)</b>	EB	Left	E	55.3	E	68.9	E	57.5	E	59.6	E	75.4	E	62.5
		Thru	C	34.7	D	44.7	D	42.2	C	32.0	D	42.6	D	38.5
		Thru/Right	C	34.7	D	44.8	D	42.3	C	32.1	D	42.6	D	38.6
	WB	Left	E	59.3	E	65.3	E	59.5	E	59.3	E	65.3	E	59.5
		Thru/Right	E	63.1	D	54.2	D	50.6	E	64.5	E	57.4	D	49.1
	NB	Thru	C	22.8	C	21.7	B	12.6	C	26.4	C	24.3	B	15.4
		Thru/Right	C	23.8	C	22.5	B	12.9	C	27.7	C	25.3	B	15.8
	SB	Thru	C	23.3	C	29.3	B	14.5	C	27.8	D	35.3	B	18.3
		Thru/Right	C	24.7	C	33.1	B	15.2	C	29.9	D	41.8	B	19.4
	<b>Overall</b>		<b>C</b>	<b>34.8</b>	<b>D</b>	<b>37.0</b>	<b>C</b>	<b>26.1</b>	<b>D</b>	<b>38.6</b>	<b>D</b>	<b>41.7</b>	<b>C</b>	<b>29.7</b>
<b>Jughandle (EB) &amp; CR 526 (NB/SB)</b>	EB	Right	-	-	-	-	-	-	b	12.2	b	13.8	b	13.4
	NB	Left	-	-	-	-	-	-	b	11.9	b	13.1	b	13.3

Note: uppercase indicates signalized intersection; lowercase indicates unsignalized intersection.

All capacity analysis calculation worksheets provided in **Appendix D**. The following subsections summarize the findings for each study intersection.

### **NJSH Route 33 & Washington Boulevard**

#### *2027 No-Build Analysis*

Under the No-Build conditions, all intersection movements will operate at a LOS “D” or better during all peak hours studied. The overall intersection will operate at a LOS “B” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “C” during the weekday PM peak hour.

#### *2027 Build Analysis*

Under the Build conditions, all intersection movements will continue to operate at or near No-Build conditions. The overall intersection will operate at a LOS “C” during all peak hours studied.

### **NJSH Route 33 & Lake Drive**

#### *2027 No-Build Analysis*

Under the No-Build conditions, all intersection movements will operate at a LOS “D” or better during all peak hours studied. The overall intersection will operate at a LOS “A” during all peak hours studied.

#### *2027 Build Analysis*

Under the Build conditions, all intersection movements will continue to operate at or near No-Build conditions. The overall intersection will operate at a LOS “B” during all peak hours studied. The existing lane geometry at the intersection is sufficient to promote acceptable operations in the Build condition.

### **NJSH Route 33 & North Commerce Square**

#### *2027 No-Build Analysis*

Under the No-Build conditions, all intersection movements will operate at a LOS “C” or better during all peak hours studied.

#### *2027 Build Analysis*

As part of the potential development, it is proposed to provide site access across from the southbound approach of North Commerce Square. It is proposed to construct a left turn storage lane along NJSH Route 33 westbound. The proposed northbound approach of North Commerce Square will provide one right turn lane. Under the Build condition with the proposed improvements, all intersection movements will continue to operate at or near No-Build conditions with 95<sup>th</sup> percentile queue lengths of less than one (1) vehicle.

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**NJSH Route 33 & Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526)/Proposed Driveway**

*2027 No-Build Analysis*

Under the No-Build conditions, some intersection movements will operate at failing levels of service during all peak hours studied. The overall intersection will operate at a LOS “E” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “F” during the weekday PM peak hour.

*2027 Build Analysis*

As part of the potential development, the following extensive intersection improvements are proposed at the intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526):

- Restriping Robbinsville-Edinburg Road (CR 526) to provide a Southbound through lane.
- Construction of an NJSH Route 33 Eastbound through lane and restriping to provide a second receiving lane.
- Construction of an NJSH Route 33 Westbound left-turn lane.
- Restriping NJSH Route 33 to provide a Westbound through lane and a second receiving lane.
- Construction of a jughandle between Robbinsville-Allentown Road and NJSH Route 33 across from Robbinsville-Edinburg Road (CR 526). The jughandle will provided ingress and egress access between the traffic signal and the subject property.
- Traffic signal improvements.

Under the Build condition with the proposed improvements, all intersection movements will operate at a LOS “D” or better during all peak hours studied. The overall intersection will operate at a LOS “C” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “D” during the weekday PM peak hour.

**US Route 130 & Robbinsville-Allentown Road**

*2027 No-Build Analysis*

Under the No-Build conditions, all intersection movements will operate at a LOS “E” or better during all peak hours studied, with the exception of the US Route 130 northbound left turning movement, which will operate at failing levels of service during all peak hours studied. The overall intersection will operate at a LOS “C” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “D” during the weekday PM peak hour.

### *2027 Build Analysis*

Under the Build condition, the timing optimization is recommended:

- Weekday AM Peak Hour:
  - Adding 2 seconds of green time to the US Route 130 northbound and southbound lead left turn phase.
  - Adding 2 seconds of green time to the Robbinsville-Allentown Road eastbound and westbound ROW phase
  - Removing 4 seconds of green time from the US Route 130 northbound and southbound ROW phase.
- Weekday PM Peak Hour:
  - Adding 2 seconds of green time to the US Route 130 northbound and southbound lead left turn phase.
  - Removing 2 seconds of green time from the US Route 130 northbound and southbound ROW phase.
- Saturday Midday Peak Hour:
  - Adding 3 seconds of green time to the US Route 130 northbound and southbound lead left turn phase.
  - Removing 3 seconds of green time from the US Route 130 northbound and southbound ROW phase.

Under the Build conditions with timing optimization, all intersection movements will operate at or near No-Build conditions during all peak hours studied. The overall intersection will operate at a LOS “D” during the weekday AM and PM peak hours and a LOS “C” during the Saturday midday peak hour.

### **US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)**

#### *2027 No-Build Analysis*

Under the No-Build conditions, all intersection movements will operate at a LOS “E” or better during all peak hours studied. The overall intersection will operate at a LOS “C” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “D” during the weekday PM peak hour.

#### *2027 Build Analysis*

Under the Build condition, the timing optimization is recommended:

- Weekday AM Peak Hour:
  - Adding 1 second of green time to the NJSH Route 33 eastbound and westbound lead left turn phase.
  - Removing 1 second of green time from the NJSH Route 33 eastbound and westbound ROW phase.

Under the Build conditions with timing optimization, all intersection movements will operate at or near No-Build conditions during all peak hours studied. The overall intersection will operate at a LOS “D” during the weekday AM and PM peak hours and a LOS “C” during the Saturday midday peak hour.

### **Robbinsville-Allentown Road & Jughandle**

#### *2027 Build Analysis*

Under the Build condition, all intersection movements will operate at a LOS “B” or better during all peak hours studied, with 95<sup>th</sup> percentile queue lengths of three vehicles or less.

## IX. SUMMARY AND CONCLUSIONS

This Traffic Feasibility Study has been prepared for the Robbinsville Township Department of Community Development to analyze existing and future conditions, as well as recommend infrastructure improvements, in the vicinity of a potential mixed-use development known as “Town Center South” within Robbinsville Township, Mercer County, New Jersey. The traffic findings are summarized below.

1. Potential redevelopment scenarios of the subject property include a mix of land uses. Two land use development scenarios were reviewed, which are detailed below in **Table 9**.

**Table 9 – Land Use Scenarios for Trip Generation**

Land Use	Land Use Trip Scenario	
	A	B
Multifamily Housing (Low-Rise)	375 Units	520 Units
Senior Adult Housing - Attached	200 Units	200 Units
Shopping Center	30,000 SF	20,000 SF
Hotel	150 Rooms	-
Recreational Community Center	30,000 SF	30,000 SF
Medical/Dental Office Building	20,000 SF	20,000 SF
County Park	10 Acres	10 Acres

Both Trip Scenarios are anticipated to have comparable impacts to traffic operations and will necessitate similar infrastructure improvements. The more conservative ‘Trip Scenario A’ was utilized in the capacity analysis.

2. Traffic signal timing optimization is recommended at the intersection of **NJSH Route 33 and US Route 130**. Under the Build conditions with timing optimization, all intersection movements will operate at or near No-Build conditions during all peak hours studied. The overall intersection will operate at a LOS “D” during the weekday AM and PM peak hours and a LOS “C” during the Saturday midday peak hour.
3. Traffic signal timing optimization is recommended at the intersection of **US Route 130 & Robbinsville-Allentown Road**. Under the Build conditions with timing optimization, all intersection movements will operate at or near No-Build conditions during all peak hours studied. The overall intersection will operate at a LOS “D” during the weekday AM and PM peak hours and a LOS “C” during the Saturday midday peak hour.

4. Two Improvement Alternatives were investigated at the intersection of **NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526)**. The preferred Alternative includes the construction of a jughandle from Robbinsville-Allentown Road into Town Center South towards NJSH Route 33 across from Robbinsville-Edinburg Road (CR 526). Under this alternative, an entrance and exit would be provided at the signalized intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). The jughandle would eliminate the Robbinsville-Allentown Road Northbound approach at the subject intersection. With the elimination of the Robbinsville-Allentown Road Northbound approach, the traffic signal can operate on a four-phase cycle without the inside-outside signal clearances.

Alternative 1 eliminates the inside-outside signal clearance at the intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). Alternative 1 is the preferred alternative between Alternatives 1 and 2. However, please note, both Alternatives will require additional travel lanes along Route 33. Both Alternatives may have an impact to the characteristics of a “Town Center” environment with the removal of on-street parking and additional travel lanes along NJSH Route 33.

In order to support the additional traffic demand and signal operation, the following physical improvements will be needed:

- Construction of a jughandle between Robbinsville-Allentown Road and NJSH Route 33 across from Robbinsville-Edinburg Road (CR 526). The jughandle will provide ingress and egress access between the traffic signal and Town Center South.
- Restriping Robbinsville-Edinburg Road (CR 526) to provide a Southbound through lane.
- Construction of an NJSH Route 33 Eastbound through lane and restriping to provide a second receiving lane.
- Construction of an NJSH Route 33 Westbound left-turn lane.
- Restriping NJSH Route 33 to provide a Westbound through lane and a second receiving lane.
- Traffic signal improvements.
- An NJDOT Access Permit will be required for the improvements. The proposed improvements will enhance the overall operation of the traffic signal.

Under the Build condition with the proposed improvements, all intersection movements at the traffic signal will operate at a LOS “D” or better during all peak hours studied. The overall intersection will operate at a LOS “C” during the weekday AM peak hour and the Saturday midday peak hour and a LOS “D” during the weekday PM peak hour.

Under the Build condition, all intersection movements at the recommended jughandle along Robbinsville-Allentown Road will operate at a LOS “B” or better during all peak hours studied, with 95<sup>th</sup> percentile queue lengths of three vehicles or less.



The roadway widening associated with the additional lane capacity on NJSH Route 33 will primarily be located to the south on the subject property. Four to five utility poles may need relocation. The jughandle is anticipated to require a partial taking totaling approximately 14,000 SF to 16,000 SF of Block 1, Lot 30. Right-of-way and utility impacts should be determined during Concept Design. The advanced lane assignment overhead mast arm along Robbinsville-Edinburg Road (CR 526) Southbound will have to be relocated or reconstructed. Additionally, on-street parking along NJSH Route 33 will be impacted from the additional lanes on NJSH Route 33. However, the additional capacity will be necessary to promote acceptable vehicular operations.

5. Two Improvement Alternatives were investigated at the intersection of **NJSH Route 33 & North Commerce Square**. The preferred Alternative includes providing a site access to Town Center South and maintaining unsignalized control. Due to the traffic flow on NJSH Route 33, the site driveway northbound egress left-turns and through maneuvers will need to be prohibited. This configuration is similar to the existing unsignalized access points on the north side of NJSH Route 33. This condition will provide acceptable traffic operations. An NJDOT Access Permit will be required.

Under the Build condition with the proposed improvements, all movements will continue to operate at or near No-Build conditions at this intersection with 95<sup>th</sup> percentile queue lengths of less than one (1) vehicle.

A traffic signal was also investigated for full-movement access; however, the New Jersey Access Code permitted signalized spacing for the NJSH Route 33 corridor is 2,640 feet. The distance between North Commerce Square and the traffic signal at Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526) and NJSH Route 33 is approximately 550 feet, which significantly violates the spacing requirement. Therefore, a signal may not be feasible.

6. Two Improvement Alternatives were investigated at the intersection of **NJSH Route 33 & Lake Drive**. As egress left-turns will not be permitted at the intersection of NJSH Route 33 and North Commerce Square a connection to the existing signalized intersection of NJSH Route 33 and Lake Drive will be a significant benefit to Town Center South. A portion of the egress left-turn trips will be provided signalized right-of-way to access NJSH Route 33 without the need for a new traffic signal or to add additional demand to the intersection of NJSH Route 33 and Robbinsville-Allentown Road/Robbinsville-Edinburg Road (CR 526). This connection will be vital should a signal not be permitted at the intersection of NJSH Route 33 and North Commerce Square.

Under the Build conditions, all movements will continue to operate at or near No-Build conditions at this intersection. The overall intersection will operate at a LOS "B" during all peak hours studied. The existing lane geometry at the intersection is sufficient to promote acceptable operations in the Build condition.

7. For the purposes of the Traffic Feasibility Study, the intersection of **NJSH Route 33 and Washington Boulevard/Golden Crest Driveway** was not anticipated to provide access into and out of the site. With unknown variables of the potential future Washington Boulevard bypass, the NJSH Route 33 corridor was analyzed in the Build condition without the bypass. This conservative analysis was conducted to investigate if the operating characteristics of the study area are conducive to support the additional trips generated by Town Center South without the additional connection. However, long-term planning should be progressed on the Washington Boulevard bypass to provide connectivity to Town Center South.

Under the Build conditions, all movements will continue to operate at or near No-Build conditions at this intersection. The overall intersection will operate at a LOS “C” during all peak hours studied.

8. In summary, additional travel lanes and significant traffic signal infrastructure improvements will be needed along Route 33 to support the full-build-out development scenarios of Town Center South. The traffic improvements may have an impact to the characteristics of a “Town Center” environment with the removal of on-street parking and additional travel lanes along NJSH Route 33. The benefits and impacts of the improvements should be considered during the planning process of redevelopment area.



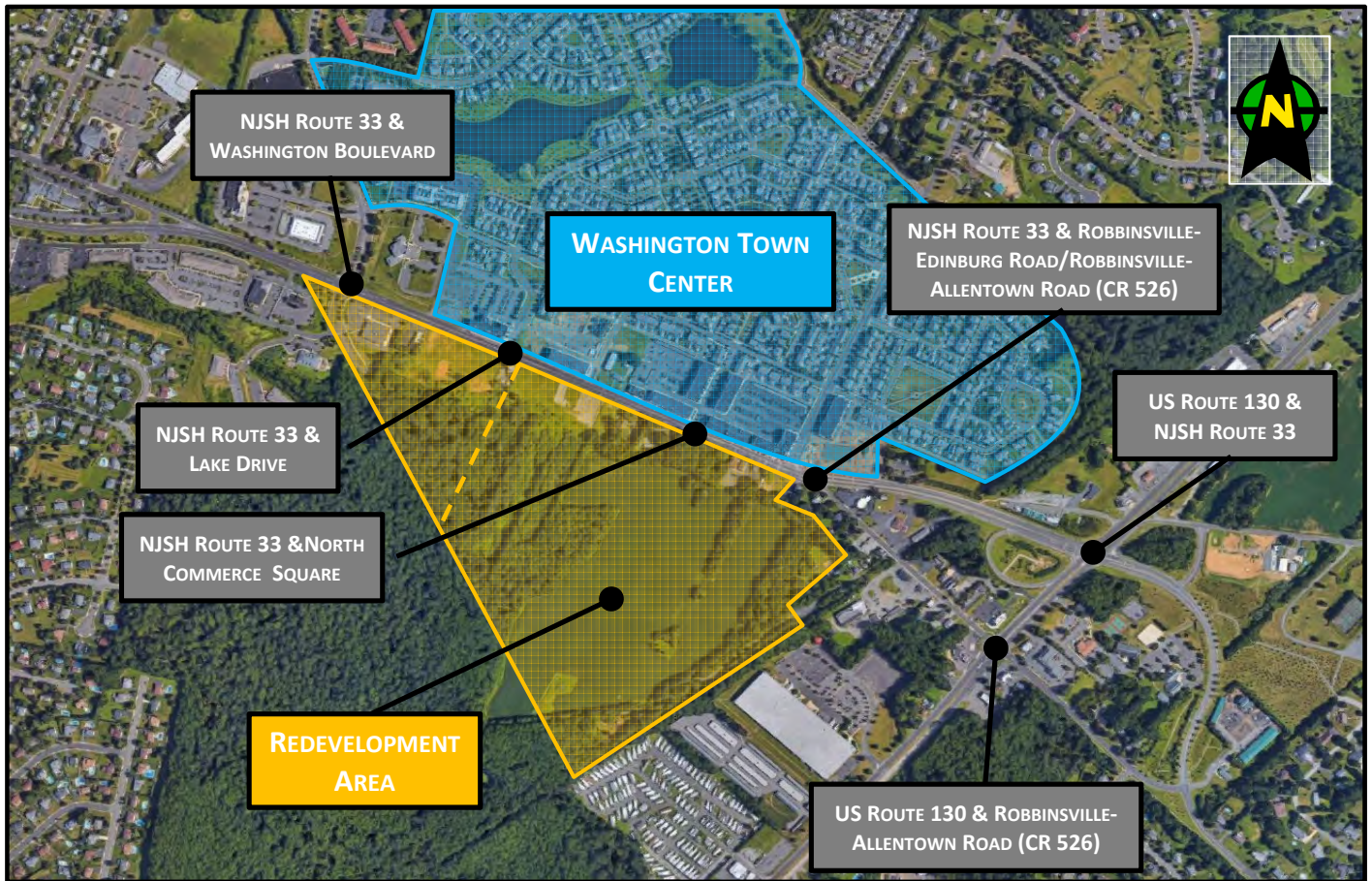
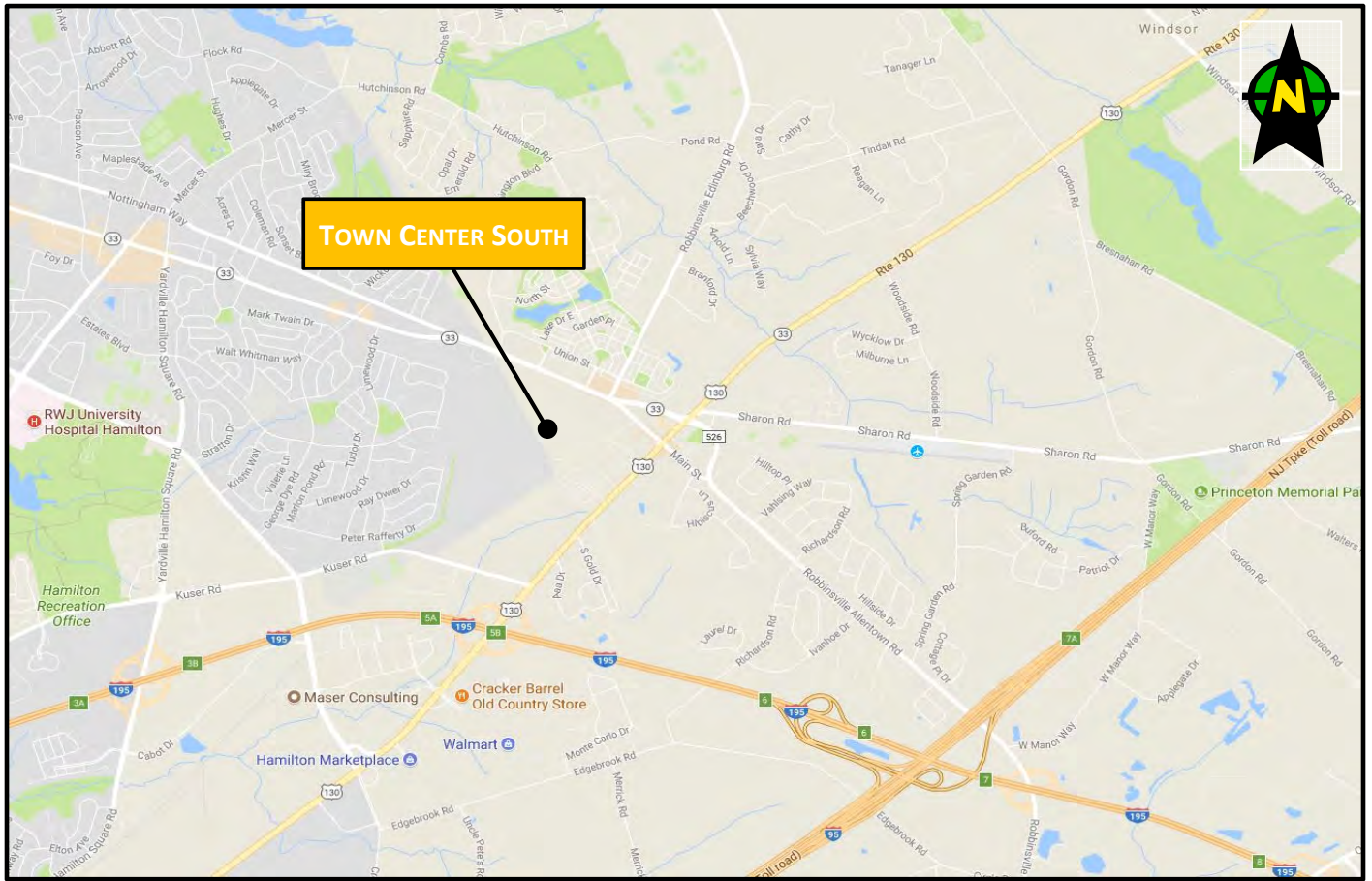
***TOWN CENTER SOUTH***

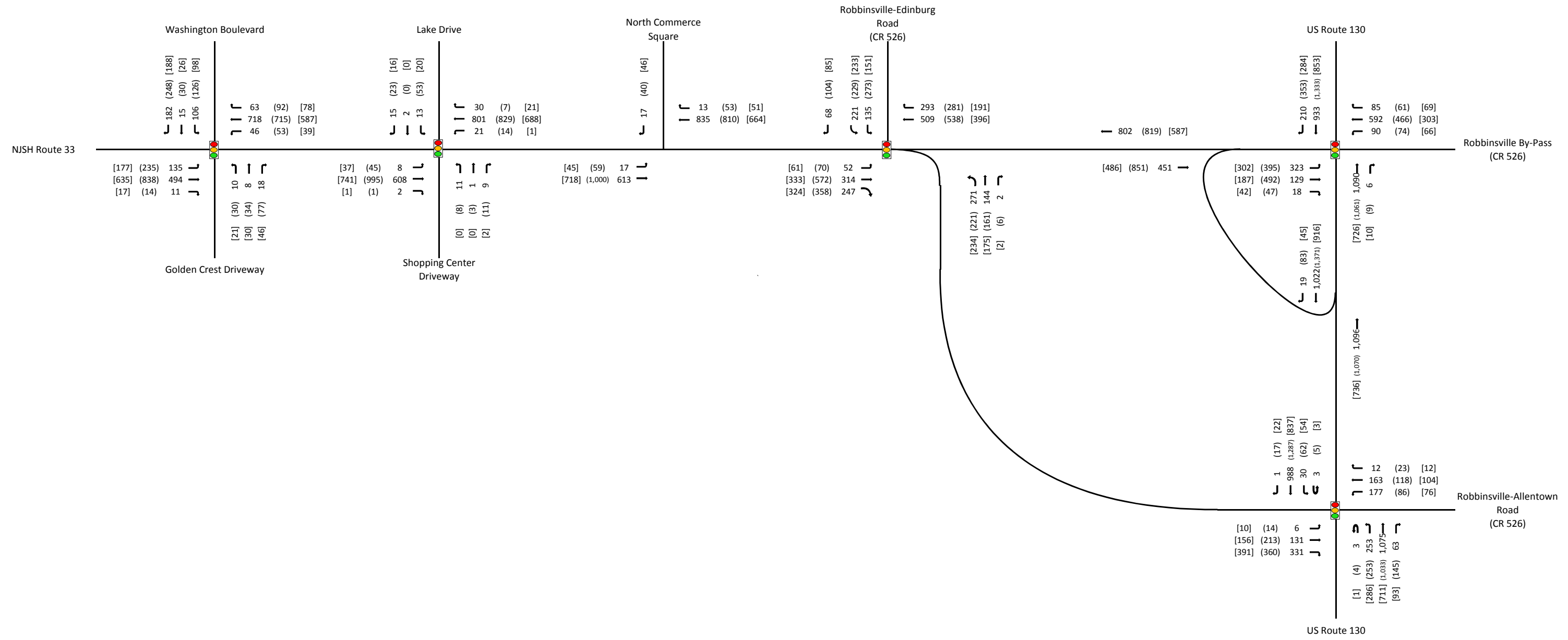
***TRAFFIC FEASIBILITY STUDY***

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**APPENDIX A**

**TRAFFIC FIGURES**

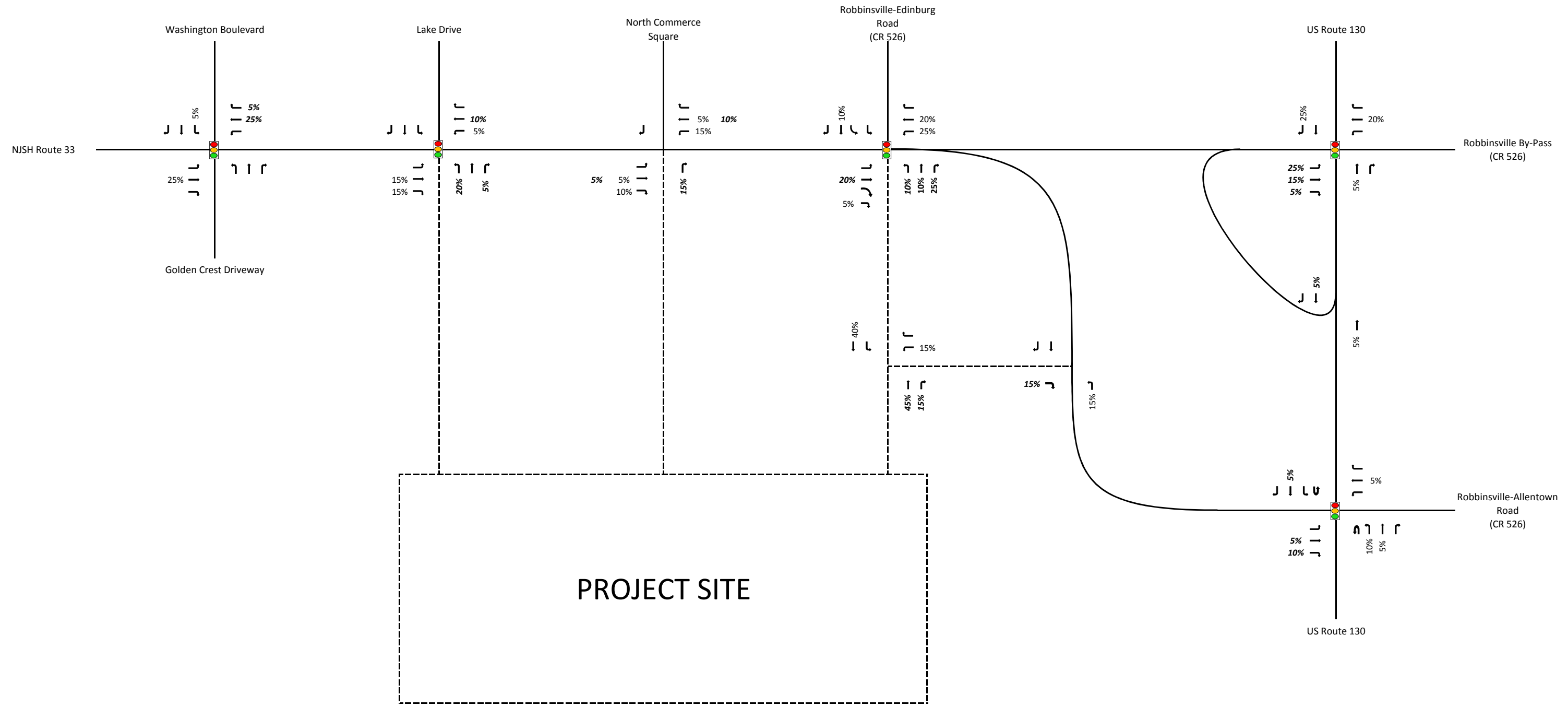




Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

Legend	
AM Peak Hour: ###	Thru Movement: —
PM Peak Hour: (###)	Turning Movement: ↵
SAT Peak Hour: [###]	

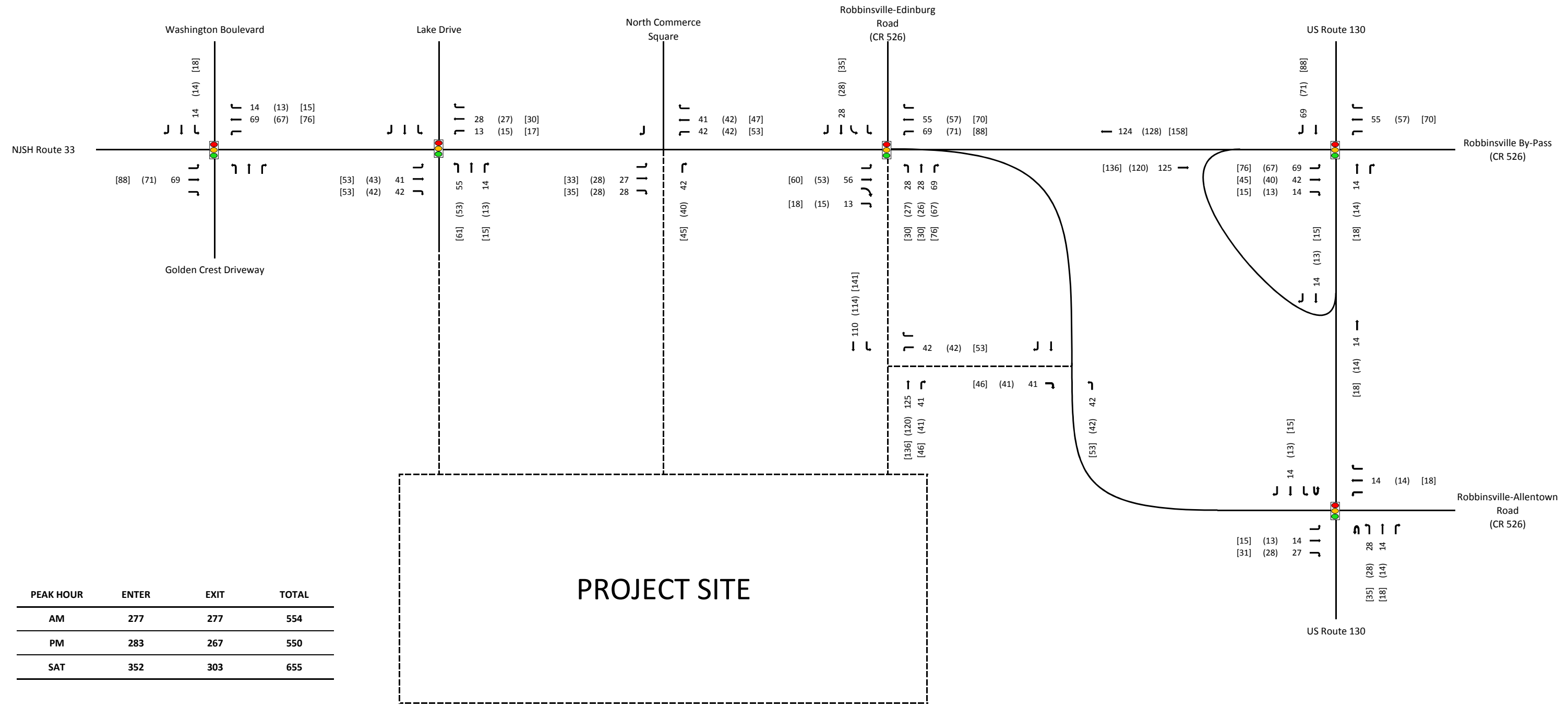
**Figure 2**  
**2017 Existing Volumes**  
**AM, PM & SAT Peak Hours**



Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

Legend	
Entering: XX%	Thru Movement:
Exiting: XX%	Turning Movement:

**Figure 3**  
**Primary Trip Distribution**  
**AM, PM & SAT Peak Hours**



PEAK HOUR	ENTER	EXIT	TOTAL
AM	277	277	554
PM	283	267	550
SAT	352	303	655

PROJECT SITE



Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

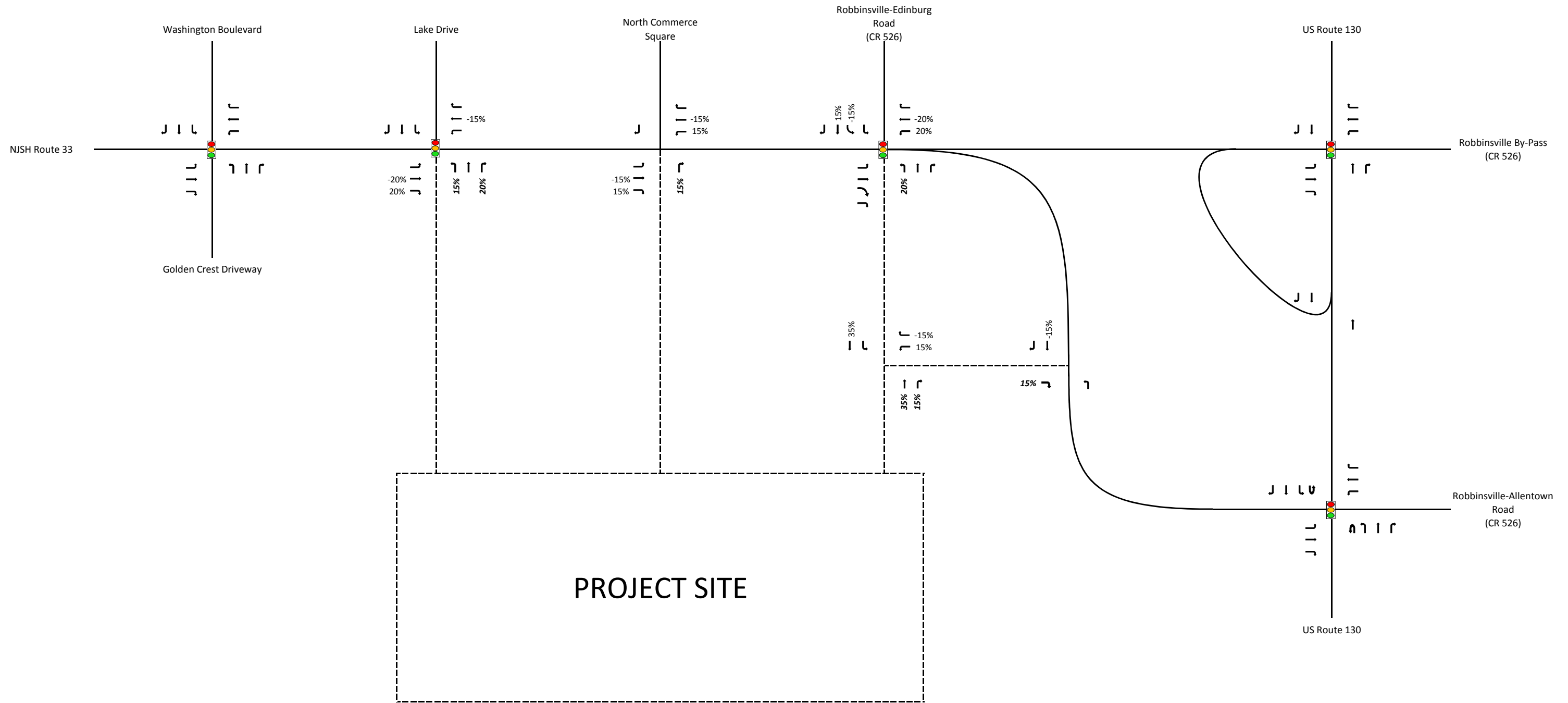
**Legend**

AM Peak Hour: ###  
 PM Peak Hour: (###)  
 SAT Peak Hour: [###]

Thru Movement: —  
 Turning Movement: ↵


**Figure 4**

**Primary Site Generated Trips**  
**AM, PM & SAT Peak Hours**



Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

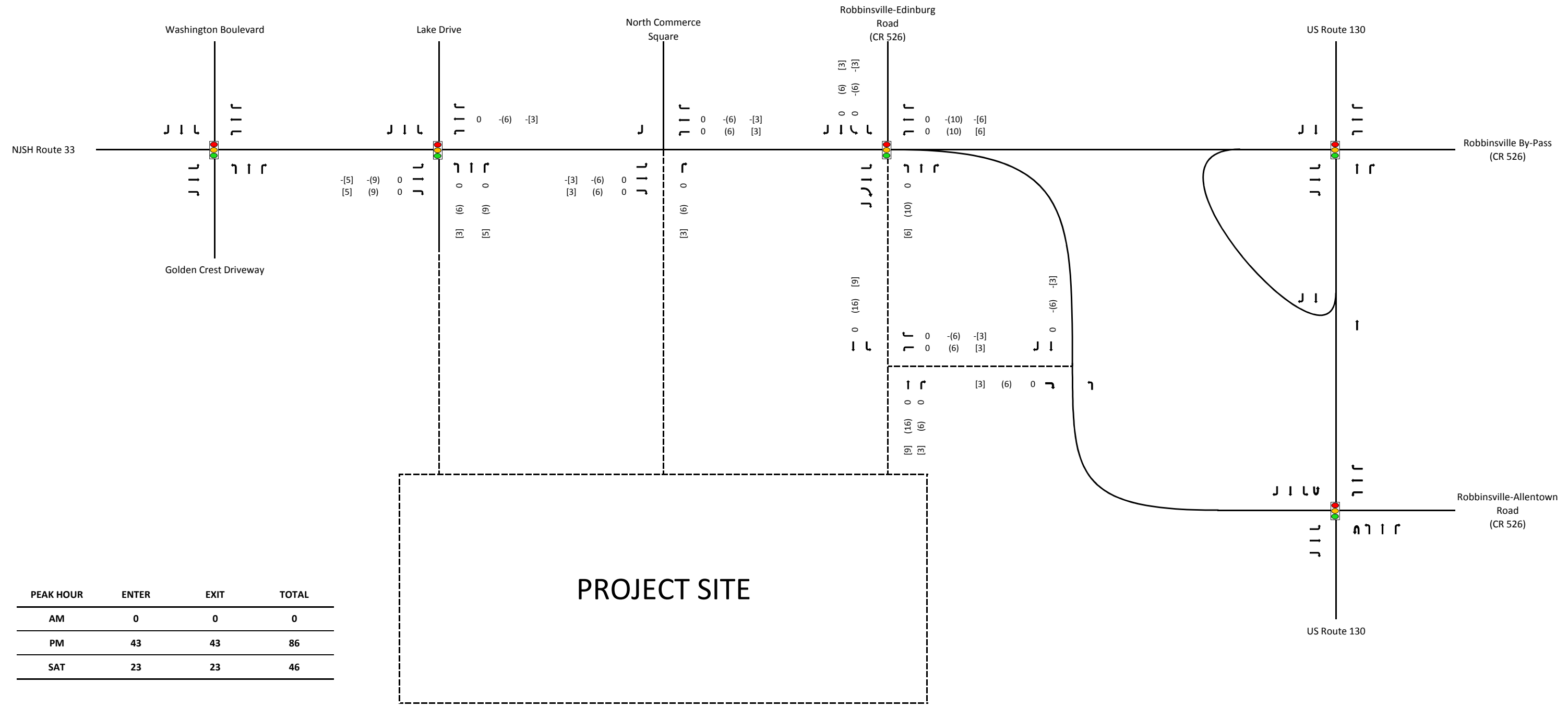
**Legend**

Entering: XX%      Thru Movement:   
 Exiting: XX%      Turning Movement: 

**Figure 5**

**Pass-by Trip Distribution**  
 AM, PM & SAT Peak Hours





Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

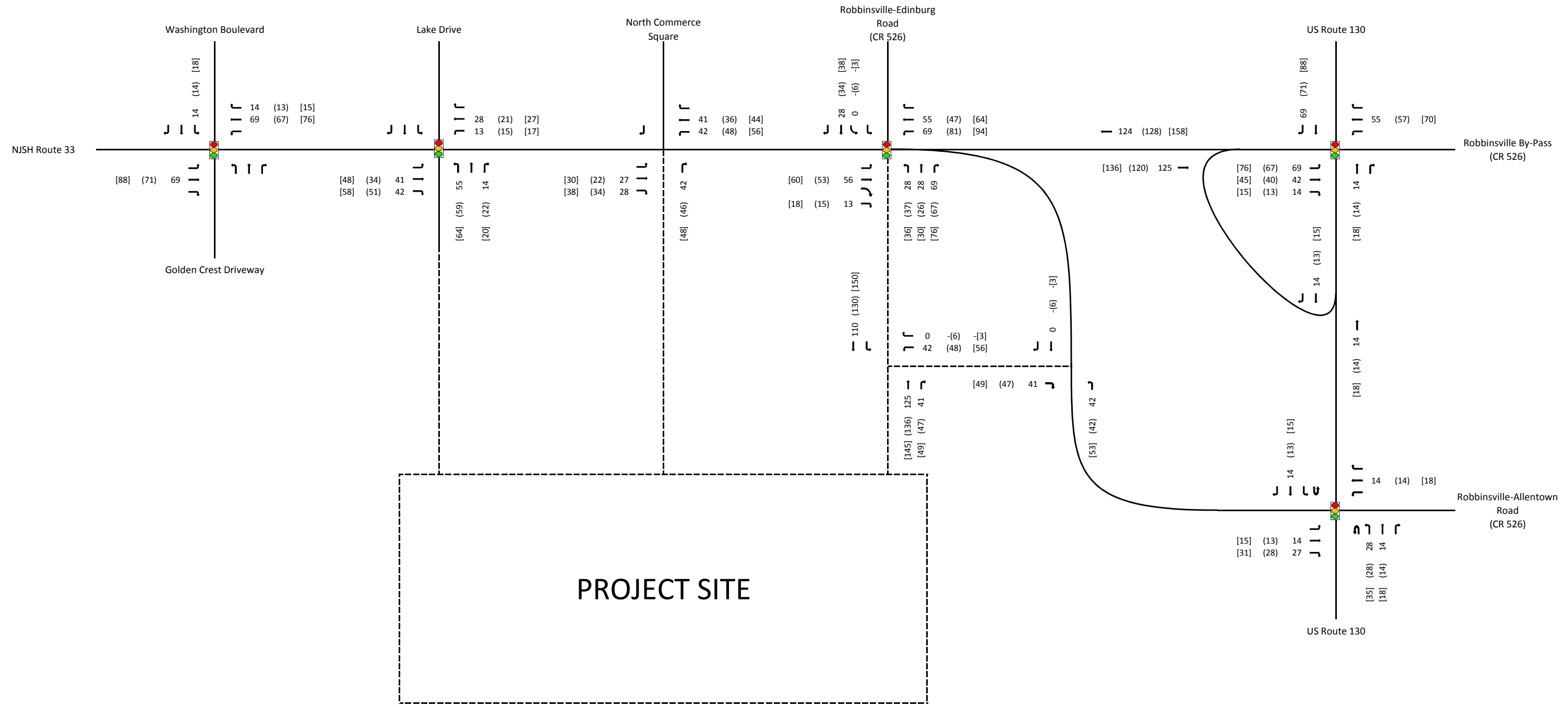
**Legend**

AM Peak Hour: ###  
 PM Peak Hour: (###)  
 SAT Peak Hour: [###]  
 Thru Movement: —|—  
 Turning Movement: —|—

**Figure 6**

Pass-by Site Generated Trips

AM, PM & SAT Peak Hours



PROJECT SITE



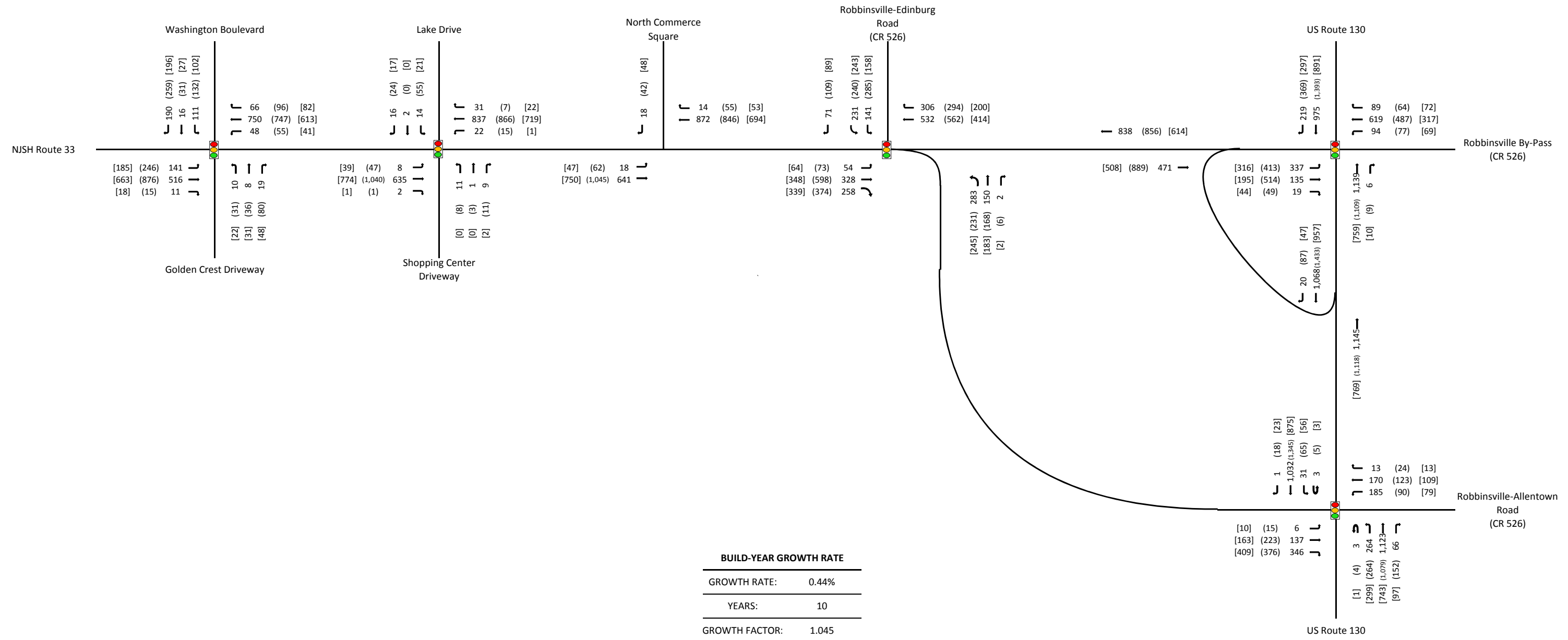
Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

**Legend**

AM Peak Hour: ###  
 PM Peak Hour: (###)  
 SAT Peak Hour: [###]  
 Thru Movement: —  
 Turning Movement: ↵

**Figure 7**

**Total Site Generated Trips**  
**AM, PM & SAT Peak Hours**



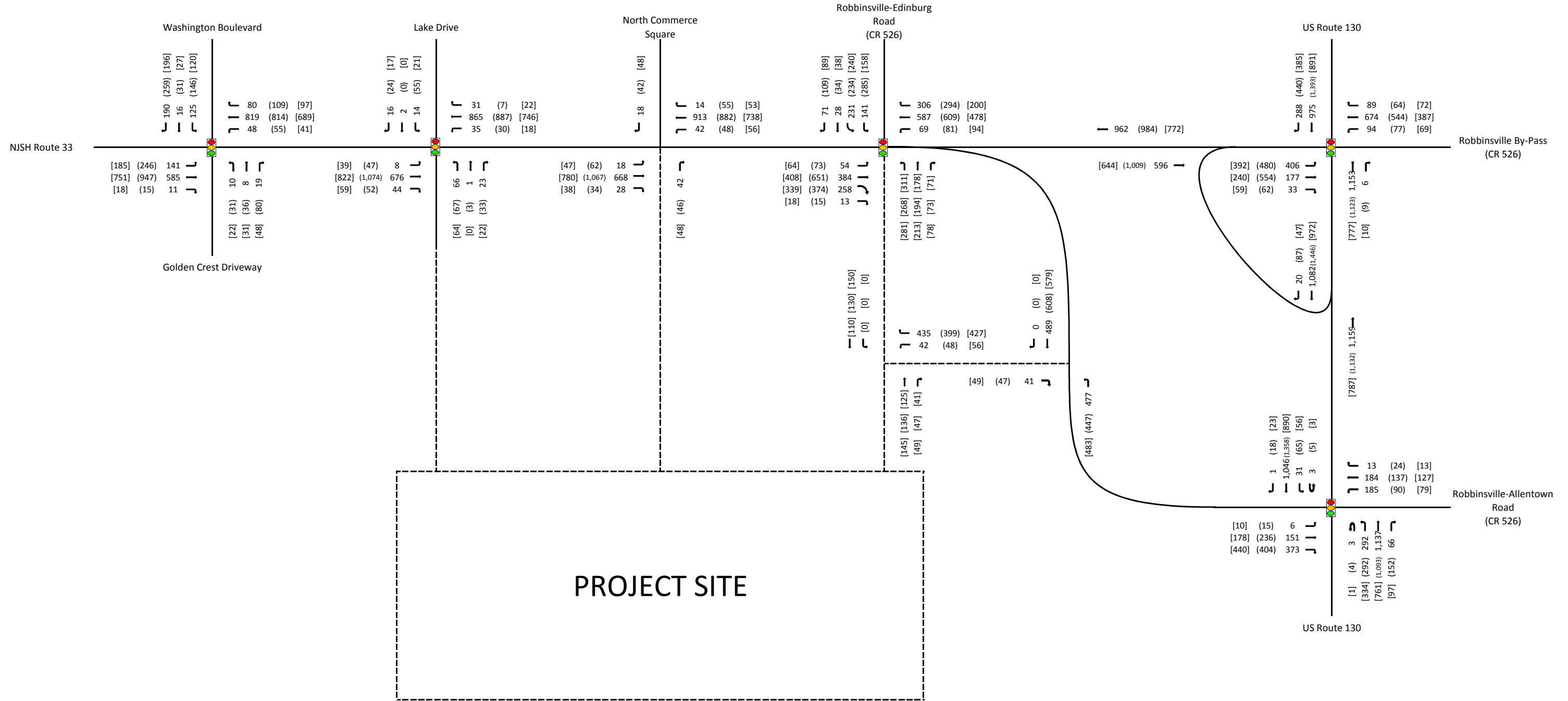
BUILD-YEAR GROWTH RATE	
GROWTH RATE:	0.44%
YEARS:	10
GROWTH FACTOR:	1.045



Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

Legend	
AM Peak Hour: ###	Thru Movement: —
PM Peak Hour: (###)	Turning Movement: ↗
SAT Peak Hour: [###]	

**Figure 8**  
**2017 No Build Conditions**  
**AM, PM & SAT Peak Hours**



Town Center South Redevelopment Area  
 MC Project No. 17004213G  
 Robbinsville Township, Mercer County, New Jersey

**Legend**

AM Peak Hour: ### Thru Movement:   
 PM Peak Hour: (###) Turning Movement:   
 SAT Peak Hour: [###]

**Figure 9**

**2019 Build Conditions**  
**AM, PM & SAT Peak Hours**



***TOWN CENTER SOUTH***

***TRAFFIC FEASIBILITY STUDY***

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**APPENDIX B**

**EXISTING DATA**



www.TSTData.com  
184 Baker Rd

Robbinsville, NJ  
Route 33/Washington Blvd  
Tuesday, September 12, 2017  
Location: 40.220786, -74.63508

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Washington Blvd  
Site Code:  
Start Date: 09/12/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound							Route 33 Westbound							Shopping Center Entrance Northbound							Washington Blvd Southbound							Int. Total	
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total		
7:00 AM	22	111	1	0	0	0	134	6	103	15	2	0	0	126	0	0	2	1	0	0	3	15	1	12	14	0	0	42	305	
7:15 AM	22	108	1	0	0	0	131	4	123	15	2	0	0	144	2	1	1	0	0	0	4	24	3	12	19	0	0	58	337	
7:30 AM	31	118	1	1	0	0	151	9	155	10	2	0	0	176	1	3	4	1	0	0	9	25	4	11	25	0	0	65	401	
7:45 AM	45	141	2	1	0	0	189	5	209	11	2	0	0	227	2	1	0	4	0	0	7	32	3	37	21	0	0	93	516	
Hourly Total	120	478	5	2	0	0	605	24	590	51	8	0	0	673	5	5	7	6	0	0	23	96	11	72	79	0	0	258	1559	
8:00 AM	31	151	2	0	0	0	184	14	162	17	1	0	0	194	1	3	2	0	0	0	6	30	3	16	29	0	0	78	462	
8:15 AM	28	84	2	2	0	0	116	18	182	17	3	0	0	220	6	1	0	7	0	0	14	19	5	13	30	0	0	67	417	
8:30 AM	39	123	4	0	0	0	166	13	161	10	6	0	0	190	5	7	1	4	0	0	17	28	5	7	31	0	0	71	444	
8:45 AM	30	107	3	0	0	0	140	14	145	14	8	0	2	181	4	4	2	4	0	0	14	20	7	10	30	0	0	67	402	
Hourly Total	128	465	11	2	0	0	606	59	650	58	18	0	2	785	16	15	5	15	0	0	51	97	20	46	120	0	0	283	1725	
9:00 AM	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
4:00 PM	50	152	1	2	0	0	205	10	175	14	3	0	0	202	5	13	12	3	0	0	33	21	5	33	13	0	0	72	512	
4:15 PM	62	190	3	0	0	0	255	11	169	13	4	0	0	197	6	7	9	2	0	0	24	29	6	32	13	0	0	80	556	
4:30 PM	54	197	3	2	0	0	256	16	139	16	2	0	0	173	4	6	12	9	0	0	31	21	3	28	31	0	1	83	543	
4:45 PM	63	180	5	0	0	0	248	12	180	21	9	0	0	222	8	0	11	13	0	0	32	33	4	29	32	0	0	98	600	
Hourly Total	229	719	12	4	0	0	964	49	663	64	18	0	0	794	23	26	44	27	0	0	120	104	18	122	89	0	1	333	2211	
5:00 PM	54	197	2	3	0	1	256	11	158	10	8	0	0	187	11	6	23	2	0	0	42	40	7	50	25	0	2	122	607	
5:15 PM	62	207	2	3	0	0	274	8	150	16	7	0	0	181	8	8	9	5	0	0	30	29	8	34	29	0	0	100	585	
5:30 PM	67	217	2	1	0	0	287	19	180	15	16	0	0	230	4	10	18	4	0	0	36	32	9	29	20	0	0	90	643	
5:45 PM	52	198	1	0	0	0	251	15	166	15	5	0	0	201	7	10	8	8	0	0	33	25	6	18	43	0	0	92	577	
Hourly Total	235	819	7	7	0	1	1068	53	654	56	36	0	0	799	30	34	58	19	0	0	141	126	30	131	117	0	2	404	2412	
6:00 PM	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Grand Total	713	2484	35	15	0	1	3247	185	2558	229	80	0	2	3052	74	80	114	67	0	0	335	423	79	371	405	0	3	1278	7912	
Approach %	22.0	76.5	1.1	0.5	0.0	-	-	6.1	83.8	7.5	2.6	0.0	-	-	22.1	23.9	34.0	20.0	0.0	-	-	33.1	6.2	29.0	31.7	0.0	-	-	-	-
Total %	9.0	31.4	0.4	0.2	0.0	-	41.0	2.3	32.3	2.9	1.0	0.0	-	38.6	0.9	1.0	1.4	0.8	0.0	-	4.2	5.3	1.0	4.7	5.1	0.0	-	16.2	-	
Lights	698	2439	34	15	0	-	3186	184	2496	221	79	0	-	2980	73	79	112	67	0	-	331	408	78	364	400	0	-	1250	7747	
% Lights	97.9	98.2	97.1	100.0	-	-	98.1	99.5	97.6	96.5	98.8	-	-	97.6	98.6	98.8	98.2	100.0	-	-	98.8	96.5	98.7	98.1	98.8	-	-	97.8	97.9	
Buses	11	8	0	0	0	-	19	1	8	6	0	0	-	15	0	0	0	0	0	-	0	11	0	5	2	0	-	18	52	
% Buses	1.5	0.3	0.0	0.0	-	-	0.6	0.5	0.3	2.6	0.0	-	-	0.5	0.0	0.0	0.0	0.0	-	-	0.0	2.6	0.0	1.3	0.5	-	-	1.4	0.7	
Trucks	4	37	1	0	0	-	42	0	54	2	1	0	-	57	1	1	2	0	0	-	4	4	1	2	3	0	-	10	113	
% Trucks	0.6	1.5	2.9	0.0	-	-	1.3	0.0	2.1	0.9	1.3	-	-	1.9	1.4	1.3	1.8	0.0	-	-	1.2	0.9	1.3	0.5	0.7	-	-	0.8	1.4	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	2	-	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66.7	-	-	-
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33.3	-	-	-





www.TSTData.com  
184 Baker Rd

Robbinsville, NJ  
Route 33/Lake Dr  
Tuesday, September 12, 2017  
Location: 40.219668, -  
74.631788

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Lake Dr  
Site Code:  
Start Date: 09/12/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound							Route 33 Westbound							Shopping Center Entrance Northbound							Lake Drive Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
7:00 AM	1	125	0	0	0	0	126	4	115	6	0	0	0	125	1	0	0	1	0	0	2	0	0	1	3	0	0	4	257
7:15 AM	3	135	0	0	0	0	138	2	145	4	0	0	0	151	1	0	0	0	0	0	1	3	1	0	5	0	0	9	299
7:30 AM	3	144	1	1	0	0	149	10	175	1	2	0	0	188	1	0	0	2	0	0	3	2	1	1	2	0	0	6	346
7:45 AM	1	161	0	0	0	0	162	3	218	7	0	0	0	228	4	0	2	1	0	0	7	5	0	2	4	0	0	11	408
Hourly Total	8	565	1	1	0	0	575	19	653	18	2	0	0	692	7	0	2	4	0	0	13	10	2	4	14	0	0	30	1310
8:00 AM	2	178	0	0	0	0	180	4	195	10	0	0	0	209	0	0	0	2	0	0	2	2	1	0	3	0	0	6	397
8:15 AM	2	114	0	0	0	0	116	4	213	9	1	0	0	227	6	1	0	2	0	0	9	4	0	0	3	0	0	7	359
8:30 AM	2	149	0	0	0	0	151	2	189	12	3	0	0	206	3	0	0	1	0	0	4	6	0	0	2	0	0	8	369
8:45 AM	3	128	0	0	0	0	131	3	186	3	1	0	0	193	1	0	0	1	0	0	2	3	2	1	2	0	1	8	334
Hourly Total	9	569	0	0	0	0	578	13	783	34	5	0	0	835	10	1	0	6	0	0	17	15	3	1	10	0	1	29	1459
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	9	182	0	0	0	0	191	2	201	8	0	0	1	211	3	1	1	0	0	1	5	14	0	1	2	0	0	17	424
4:15 PM	7	221	0	0	0	0	228	1	182	4	0	0	0	187	1	0	0	1	0	0	2	4	0	0	6	0	0	10	427
4:30 PM	9	227	0	0	0	1	236	3	172	2	2	0	0	179	2	0	0	2	0	0	4	17	0	0	4	0	0	21	440
4:45 PM	8	236	0	0	0	0	244	1	205	1	1	0	0	208	2	0	0	0	0	0	2	8	0	2	3	0	2	13	467
Hourly Total	33	866	0	0	0	1	899	7	760	15	3	0	1	785	8	1	1	3	0	1	13	43	0	3	15	0	2	61	1758
5:00 PM	11	238	1	0	0	0	250	4	176	0	0	0	0	180	2	0	0	2	0	0	4	22	0	2	8	0	0	32	466
5:15 PM	12	249	0	0	0	0	261	3	188	1	1	0	0	193	4	2	0	5	0	0	11	13	0	1	4	0	0	18	483
5:30 PM	12	265	0	0	0	0	277	4	213	3	0	1	0	221	0	0	3	1	0	0	4	13	0	2	1	0	0	16	518
5:45 PM	10	243	0	0	0	4	253	3	194	2	0	0	0	199	2	1	0	0	0	0	3	5	0	3	2	0	0	10	465
Hourly Total	45	995	1	0	0	4	1041	14	771	6	1	1	0	793	8	3	3	8	0	0	22	53	0	8	15	0	0	76	1932
6:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	95	2996	2	1	0	5	3094	53	2967	73	11	1	1	3105	33	5	6	21	0	1	65	121	5	16	54	0	3	196	6460
Approach %	3.1	96.8	0.1	0.0	0.0	-	-	1.7	95.6	2.4	0.4	0.0	-	-	50.8	7.7	9.2	32.3	0.0	-	-	61.7	2.6	8.2	27.6	0.0	-	-	-
Total %	1.5	46.4	0.0	0.0	0.0	-	47.9	0.8	45.9	1.1	0.2	0.0	-	48.1	0.5	0.1	0.1	0.3	0.0	-	1.0	1.9	0.1	0.2	0.8	0.0	-	3.0	-
Lights	95	2932	2	1	0	-	3030	52	2898	69	11	1	-	3031	33	5	5	21	0	-	64	119	5	16	54	0	-	194	6319
% Lights	100.0	97.9	100.0	100.0	-	-	97.9	98.1	97.7	94.5	100.0	100.0	-	97.6	100.0	100.0	83.3	100.0	-	-	98.5	98.3	100.0	100.0	100.0	-	-	99.0	97.8
Buses	0	22	0	0	0	-	22	0	14	3	0	0	-	17	0	0	0	0	0	-	0	0	0	0	0	0	-	0	39
% Buses	0.0	0.7	0.0	0.0	-	-	0.7	0.0	0.5	4.1	0.0	0.0	-	0.5	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Trucks	0	42	0	0	0	-	42	1	55	1	0	0	-	57	0	0	1	0	0	-	1	2	0	0	0	0	-	2	102
% Trucks	0.0	1.4	0.0	0.0	-	-	1.4	1.9	1.9	1.4	0.0	0.0	-	1.8	0.0	0.0	16.7	0.0	-	-	1.5	1.7	0.0	0.0	0.0	-	-	1.0	1.6
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	80.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	20.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-





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184 Baker Rd

Robbinsville, NJ  
Route 33/Lake Drive  
Saturday, September 9, 2017  
Location: 40.219668, -  
74.631788

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Lake Dr-Sat  
Site Code:  
Start Date: 09/09/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound							Route 33 Westbound							Shopping Center Entrance Northbound							Lake Drive Southbound							Int. Total	
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total		
11:00 AM	7	188	0	0	0	0	195	0	135	1	2	0	0	138	0	0	0	0	0	0	0	12	0	1	3	0	0	16	349	
11:15 AM	10	183	0	0	0	0	193	0	164	10	0	0	0	174	0	0	0	0	0	0	0	7	0	0	5	0	0	12	379	
11:30 AM	7	188	0	0	0	0	195	0	145	3	0	0	0	148	0	0	0	0	0	0	0	4	0	0	5	0	0	9	352	
11:45 AM	9	188	0	0	0	0	197	1	159	4	0	0	1	164	0	0	0	1	0	1	1	4	0	0	10	0	0	14	376	
Hourly Total	33	747	0	0	0	0	780	1	603	18	2	0	1	624	0	0	0	1	0	1	1	27	0	1	23	0	0	51	1456	
12:00 PM	6	188	0	0	0	0	194	0	153	3	0	0	0	156	0	0	0	0	0	0	0	1	0	0	1	0	0	2	352	
12:15 PM	12	184	0	0	0	0	196	0	179	7	0	0	0	186	0	0	0	0	0	0	0	2	0	0	4	0	2	6	388	
12:30 PM	10	187	1	0	0	0	198	1	180	5	0	0	0	186	0	0	2	0	0	0	2	9	0	0	4	0	0	13	399	
12:45 PM	9	182	0	0	0	0	191	0	166	6	0	0	0	172	0	0	0	0	0	0	0	8	0	2	5	0	0	15	378	
Hourly Total	37	741	1	0	0	0	779	1	678	21	0	0	0	700	0	0	2	0	0	0	2	20	0	2	14	0	2	36	1517	
1:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
Grand Total	70	1489	1	0	0	0	1560	2	1281	39	2	0	1	1324	0	0	2	1	0	1	3	47	0	3	38	0	2	88	2975	
Approach %	4.5	95.4	0.1	0.0	0.0	-	-	0.2	96.8	2.9	0.2	0.0	-	-	0.0	0.0	66.7	33.3	0.0	-	-	53.4	0.0	3.4	43.2	0.0	-	-	-	
Total %	2.4	50.1	0.0	0.0	0.0	-	52.4	0.1	43.1	1.3	0.1	0.0	-	44.5	0.0	0.0	0.1	0.0	0.0	-	0.1	1.6	0.0	0.1	1.3	0.0	-	3.0	-	
Lights	70	1477	1	0	0	-	1548	2	1263	39	2	0	-	1306	0	0	2	1	0	-	3	47	0	3	38	0	-	88	2945	
% Lights	100.0	99.2	100.0	-	-	-	99.2	100.0	98.6	100.0	100.0	-	-	98.6	-	-	100.0	100.0	-	-	100.0	100.0	-	100.0	100.0	-	-	100.0	99.0	
Buses	0	1	0	0	0	-	1	0	1	0	0	0	-	1	0	0	0	0	0	-	0	0	0	0	0	0	-	0	2	
% Buses	0.0	0.1	0.0	-	-	-	0.1	0.0	0.1	0.0	0.0	-	-	0.1	-	-	0.0	0.0	-	-	0.0	0.0	-	0.0	0.0	-	-	0.0	0.1	
Trucks	0	11	0	0	0	-	11	0	17	0	0	0	-	17	0	0	0	0	0	-	0	0	0	0	0	0	-	0	28	
% Trucks	0.0	0.7	0.0	-	-	-	0.7	0.0	1.3	0.0	0.0	-	-	1.3	-	-	0.0	0.0	-	-	0.0	0.0	-	0.0	0.0	-	-	0.0	0.9	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	



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184 Baker Rd

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Count Name: Rt 33-Commerce Square  
Site Code:  
Start Date: 09/12/2017  
Page No: 1

Robbinsville, NJ  
Route 33/Commerce Square  
Tuesday, September 12, 2017  
Location: 40.218324, -74.628019

### Turning Movement Data

Start Time	Route 33 Eastbound					Route 33 Westbound					Commerce Square Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	6	122	0	0	128	127	1	0	0	128	0	5	0	2	5	261
7:15 AM	5	127	0	0	132	139	2	0	0	141	0	2	0	0	2	275
7:30 AM	3	140	0	0	143	192	1	0	0	193	0	3	0	0	3	339
7:45 AM	4	176	0	0	180	230	2	0	0	232	0	2	0	0	2	414
Hourly Total	18	565	0	0	583	688	6	0	0	694	0	12	0	2	12	1289
8:00 AM	8	171	0	0	179	193	4	1	0	198	0	4	0	0	4	381
8:15 AM	2	110	0	0	112	206	6	0	0	212	0	8	0	0	8	332
8:30 AM	3	153	0	0	156	189	7	0	0	196	0	3	0	0	3	355
8:45 AM	6	129	0	0	135	199	6	0	0	205	1	6	0	1	7	347
Hourly Total	19	563	0	0	582	787	23	1	0	811	1	21	0	1	22	1415
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	10	179	0	0	189	196	8	0	0	204	1	9	0	3	10	403
4:15 PM	9	211	0	0	220	180	8	0	0	188	0	8	0	1	8	416
4:30 PM	16	226	0	0	242	167	9	0	0	176	0	7	0	3	7	425
4:45 PM	20	222	0	0	242	191	10	0	0	201	0	12	0	2	12	455
Hourly Total	55	838	0	0	893	734	35	0	0	769	1	36	0	9	37	1699
5:00 PM	14	241	0	0	255	181	12	0	0	193	0	12	0	2	12	460
5:15 PM	9	248	0	0	257	180	12	0	0	192	0	6	0	0	6	455
5:30 PM	20	251	0	0	271	213	13	0	0	226	0	12	0	0	12	509
5:45 PM	16	228	0	0	244	188	16	0	0	204	0	10	0	3	10	458
Hourly Total	59	968	0	0	1027	762	53	0	0	815	0	40	0	5	40	1882
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	151	2934	0	0	3085	2971	117	1	0	3089	2	109	0	17	111	6285
Approach %	4.9	95.1	0.0	-	-	96.2	3.8	0.0	-	-	1.8	98.2	0.0	-	-	-
Total %	2.4	46.7	0.0	-	49.1	47.3	1.9	0.0	-	49.1	0.0	1.7	0.0	-	1.8	-
Lights	151	2864	0	-	3015	2898	114	1	-	3013	2	107	0	-	109	6137
% Lights	100.0	97.6	-	-	97.7	97.5	97.4	100.0	-	97.5	100.0	98.2	-	-	98.2	97.6
Buses	0	23	0	-	23	16	0	0	-	16	0	0	0	-	0	39
% Buses	0.0	0.8	-	-	0.7	0.5	0.0	0.0	-	0.5	0.0	0.0	-	-	0.0	0.6
Trucks	0	47	0	-	47	57	3	0	-	60	0	2	0	-	2	109
% Trucks	0.0	1.6	-	-	1.5	1.9	2.6	0.0	-	1.9	0.0	1.8	-	-	1.8	1.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	94.1	-	-



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Count Name: Rt 33-Commerce  
Square-Sat  
Site Code:  
Start Date: 09/09/2017  
Page No: 1

Robbinsville, NJ  
Route 33/Commerce Square  
Saturday, September 9, 2017  
Location: 40.218324, -  
74.628019

### Turning Movement Data

Start Time	Route 33 Eastbound					Route 33 Westbound					Commerce Square Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:00 AM	8	193	0	0	201	124	7	0	0	131	0	8	0	4	8	340
11:15 AM	15	172	0	0	187	165	13	0	0	178	0	5	0	2	5	370
11:30 AM	9	180	0	0	189	134	8	0	0	142	1	4	0	3	5	336
11:45 AM	12	171	0	0	183	164	8	0	0	172	0	10	0	2	10	365
Hourly Total	44	716	0	0	760	587	36	0	0	623	1	27	0	11	28	1411
12:00 PM	10	178	0	0	188	162	8	0	0	170	0	8	0	3	8	366
12:15 PM	9	173	0	0	182	166	12	0	0	178	2	12	0	1	14	374
12:30 PM	15	178	0	0	193	161	20	0	0	181	0	17	0	0	17	391
12:45 PM	11	169	0	0	180	168	11	0	0	179	0	9	0	0	9	368
Hourly Total	45	698	0	0	743	657	51	0	0	708	2	46	0	4	48	1499
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	89	1414	0	0	1503	1244	87	0	0	1331	3	73	0	15	76	2910
Approach %	5.9	94.1	0.0	-	-	93.5	6.5	0.0	-	-	3.9	96.1	0.0	-	-	-
Total %	3.1	48.6	0.0	-	51.6	42.7	3.0	0.0	-	45.7	0.1	2.5	0.0	-	2.6	-
Lights	89	1403	0	-	1492	1228	85	0	-	1313	3	72	0	-	75	2880
% Lights	100.0	99.2	-	-	99.3	98.7	97.7	-	-	98.6	100.0	98.6	-	-	98.7	99.0
Buses	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Buses	0.0	0.1	-	-	0.1	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Trucks	0	10	0	-	10	15	2	0	-	17	0	1	0	-	1	28
% Trucks	0.0	0.7	-	-	0.7	1.2	2.3	-	-	1.3	0.0	1.4	-	-	1.3	1.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	93.3	-	-



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184 Baker Rd

Robbinsville, NJ  
Route 33/Route 526  
Tuesday, September 12, 2017  
Location: 40.217536, -  
74.625833

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Rt 526  
Site Code:  
Start Date: 09/12/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound						Route 33 Westbound						Route 526 Northbound						Route 526 Southbound						Int. Total				
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red		U-Turn	Peds	App. Total	
7:00 AM	10	69	36	0	0	115	0	85	75	1	0	0	161	36	35	0	0	0	0	0	71	26	48	6	4	0	2	84	431
7:15 AM	7	72	56	0	0	135	0	82	47	21	0	0	150	43	35	0	0	0	0	78	37	69	1	8	0	0	115	478	
7:30 AM	14	78	46	0	0	138	0	116	77	18	0	0	211	59	31	0	0	0	0	90	38	61	6	9	0	0	114	553	
7:45 AM	16	79	75	0	0	170	0	132	53	3	0	0	188	74	37	0	0	0	0	111	35	61	6	11	0	0	113	582	
Hourly Total	47	298	213	0	0	558	0	415	252	43	0	0	710	212	138	0	0	0	0	350	136	239	19	32	0	2	426	2044	
8:00 AM	11	88	73	0	0	172	0	125	75	9	0	0	209	60	30	2	0	0	0	92	35	57	6	5	0	0	103	576	
8:15 AM	11	53	53	0	0	117	1	122	48	10	0	0	181	78	27	0	0	0	0	105	27	42	7	18	0	0	94	497	
8:30 AM	10	77	58	0	0	145	0	137	68	12	0	0	217	46	21	1	0	0	0	68	49	56	6	7	0	0	118	548	
8:45 AM	11	79	40	0	0	130	0	102	58	11	0	0	171	77	16	0	0	0	0	93	49	48	7	18	0	0	122	516	
Hourly Total	43	297	224	0	0	564	1	486	249	42	0	0	778	261	94	3	0	0	0	358	160	203	26	48	0	0	437	2137	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
4:00 PM	9	80	91	0	0	180	0	116	56	9	0	0	181	76	25	0	0	0	0	101	40	53	7	8	0	0	108	570	
4:15 PM	17	110	92	0	0	219	0	105	45	11	0	0	161	66	25	1	0	0	0	92	43	55	4	13	0	0	115	587	
4:30 PM	16	102	105	0	0	223	0	93	37	15	0	0	145	59	36	1	0	0	0	96	62	57	8	17	0	0	144	608	
4:45 PM	17	100	93	0	0	210	0	109	34	21	0	0	164	64	32	1	0	0	0	97	72	58	8	26	0	1	164	635	
Hourly Total	59	392	381	0	0	832	0	423	172	56	0	0	651	265	118	3	0	0	0	386	217	223	27	64	0	1	531	2400	
5:00 PM	12	133	96	0	0	241	0	113	48	16	0	0	177	55	33	3	0	0	0	91	71	61	4	22	0	0	158	667	
5:15 PM	19	139	92	0	0	250	0	107	51	20	0	0	178	54	49	0	0	0	0	103	70	66	12	16	0	0	164	695	
5:30 PM	20	157	80	0	0	257	0	165	74	9	0	0	248	44	33	2	0	0	0	79	78	56	8	16	0	0	158	742	
5:45 PM	19	122	90	0	0	231	0	100	42	21	0	0	163	68	46	1	0	0	0	115	54	40	9	17	0	0	120	629	
Hourly Total	70	551	358	0	0	979	0	485	215	66	0	0	766	221	161	6	0	0	0	388	273	223	33	71	0	0	600	2733	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	219	1538	1176	0	0	2933	1	1809	888	207	0	0	2905	961	511	12	0	0	0	1484	786	888	105	215	0	3	1994	9316	
Approach %	7.5	52.4	40.1	0.0	-	-	0.0	62.3	30.6	7.1	0.0	-	-	64.8	34.4	0.8	0.0	0.0	-	-	39.4	44.5	5.3	10.8	0.0	-	-	-	
Total %	2.4	16.5	12.6	0.0	-	31.5	0.0	19.4	9.5	2.2	0.0	-	31.2	10.3	5.5	0.1	0.0	0.0	-	15.9	8.4	9.5	1.1	2.3	0.0	-	21.4	-	
Lights	207	1503	1154	0	-	2864	1	1755	846	194	0	-	2796	946	501	12	0	0	-	1459	741	876	104	212	0	-	1933	9052	
% Lights	94.5	97.7	98.1	-	-	97.6	100.0	97.0	95.3	93.7	-	-	96.2	98.4	98.0	100.0	-	-	-	98.3	94.3	98.6	99.0	98.6	-	-	96.9	97.2	
Buses	8	7	7	0	-	22	0	15	21	8	0	-	44	2	5	0	0	0	-	7	35	6	1	1	0	-	43	116	
% Buses	3.7	0.5	0.6	-	-	0.8	0.0	0.8	2.4	3.9	-	-	1.5	0.2	1.0	0.0	-	-	-	0.5	4.5	0.7	1.0	0.5	-	-	2.2	1.2	
Trucks	4	28	15	0	-	47	0	39	21	5	0	-	65	13	5	0	0	0	-	18	10	6	0	2	0	-	18	148	
% Trucks	1.8	1.8	1.3	-	-	1.6	0.0	2.2	2.4	2.4	-	-	2.2	1.4	1.0	0.0	-	-	-	1.2	1.3	0.7	0.0	0.9	-	-	0.9	1.6	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	3	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	



www.TSTData.com  
184 Baker Rd

Robbinsville, NJ  
Route 33/Route 526  
Saturday, September 9, 2017  
Location: 40.217536, -  
74.625833

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Rt 526-Sat  
Site Code:  
Start Date: 09/09/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound							Route 33 Westbound							Route 526 Northbound							Route 526 Southbound							Int. Total	
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total		
11:00 AM	18	80	85	0	0	0	183	0	77	28	9	0	0	114	41	39	0	0	0	0	80	38	68	3	11	0	0	120	497	
11:15 AM	18	74	81	0	0	0	173	0	85	32	8	0	0	125	67	35	0	0	0	0	102	47	63	9	15	0	0	134	534	
11:30 AM	17	75	86	0	0	0	178	0	68	30	4	0	0	102	45	40	1	0	0	0	86	51	69	11	14	0	0	145	511	
11:45 AM	23	76	80	0	0	0	179	0	75	32	10	0	0	117	70	48	0	0	0	0	118	32	47	9	21	0	0	109	523	
Hourly Total	76	305	332	0	0	0	713	0	305	122	31	0	0	458	223	162	1	0	0	0	386	168	247	32	61	0	0	508	2065	
12:00 PM	14	74	90	0	0	0	178	0	91	25	11	0	0	127	57	37	0	0	0	0	94	36	61	6	10	0	0	113	512	
12:15 PM	10	81	87	0	0	0	178	0	102	41	8	0	0	151	62	44	0	0	0	0	106	51	64	10	11	0	1	136	571	
12:30 PM	17	72	75	0	0	0	164	0	93	38	9	0	0	140	59	43	1	1	0	0	104	31	45	10	15	0	0	101	509	
12:45 PM	20	89	72	0	0	0	181	0	97	43	16	0	0	156	56	51	0	0	0	0	107	33	63	7	16	0	0	119	563	
Hourly Total	61	316	324	0	0	0	701	0	383	147	44	0	0	574	234	175	1	1	0	0	411	151	233	33	52	0	1	469	2155	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	137	621	656	0	0	0	1414	0	688	269	75	0	0	1032	457	337	2	1	0	0	797	319	480	65	113	0	1	977	4220	
Approach %	9.7	43.9	46.4	0.0	0.0	-	-	0.0	66.7	26.1	7.3	0.0	-	-	57.3	42.3	0.3	0.1	0.0	-	-	32.7	49.1	6.7	11.6	0.0	-	-	-	-
Total %	3.2	14.7	15.5	0.0	0.0	-	33.5	0.0	16.3	6.4	1.8	0.0	-	24.5	10.8	8.0	0.0	0.0	0.0	-	18.9	7.6	11.4	1.5	2.7	0.0	-	23.2	-	
Lights	134	616	652	0	0	-	1402	0	674	266	73	0	-	1013	454	332	2	1	0	-	789	315	472	65	112	0	-	964	4168	
% Lights	97.8	99.2	99.4	-	-	-	99.2	-	98.0	98.9	97.3	-	-	98.2	99.3	98.5	100.0	100.0	-	-	99.0	98.7	98.3	100.0	99.1	-	-	98.7	98.8	
Buses	0	1	0	0	0	-	1	0	1	1	1	0	-	3	0	0	0	0	0	-	0	1	2	0	0	0	-	3	7	
% Buses	0.0	0.2	0.0	-	-	-	0.1	-	0.1	0.4	1.3	-	-	0.3	0.0	0.0	0.0	0.0	-	-	0.0	0.3	0.4	0.0	0.0	-	-	0.3	0.2	
Trucks	3	4	4	0	0	-	11	0	13	2	1	0	-	16	3	5	0	0	0	-	8	3	6	0	1	0	-	10	45	
% Trucks	2.2	0.6	0.6	-	-	-	0.8	-	1.9	0.7	1.3	-	-	1.6	0.7	1.5	0.0	0.0	-	-	1.0	0.9	1.3	0.0	0.9	-	-	1.0	1.1	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	



www.TSTData.com  
184 Baker Rd

Robbinsville, NJ  
Route 526/Route 130  
Tuesday, September 12, 2017  
Location: 40.214751, -74.62191

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 526-Rt 130  
Site Code:  
Start Date: 09/12/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 526 Eastbound						Route 526 Westbound						Route 130 Northbound						Route 130 Southbound						Int. Total					
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red		U-Turn	Peds	App. Total		
7:00 AM	0	17	68	0	0	85	22	34	6	1	0	0	63	53	239	7	1	0	0	0	300	8	145	1	0	2	0	156	604	
7:15 AM	2	20	93	0	0	115	33	29	5	1	0	1	68	46	317	9	4	1	0	0	377	6	202	2	0	1	2	211	771	
7:30 AM	2	20	81	0	0	103	44	43	2	0	0	0	89	66	277	9	2	0	0	0	354	5	221	1	0	0	0	227	773	
7:45 AM	0	36	89	0	0	125	49	38	5	0	0	0	92	59	304	12	4	1	0	0	380	9	285	0	0	3	0	297	894	
Hourly Total	4	93	331	0	0	428	148	144	18	2	0	1	312	224	1137	37	11	2	0	0	1411	28	853	4	0	6	2	891	3042	
8:00 AM	1	45	102	0	0	148	36	43	1	0	0	0	80	56	235	15	2	1	0	0	309	7	238	0	0	0	0	245	782	
8:15 AM	3	29	59	0	0	91	48	39	3	1	0	1	91	72	247	13	6	1	0	0	339	9	244	0	0	0	0	253	774	
8:30 AM	3	18	81	0	0	102	39	33	1	0	0	0	73	45	204	7	3	1	0	0	260	9	211	3	2	0	1	225	660	
8:45 AM	2	26	66	0	0	94	37	39	3	2	0	0	81	57	249	10	0	3	0	0	319	11	241	2	0	0	1	254	748	
Hourly Total	9	118	308	0	0	435	160	154	8	3	0	1	325	230	935	45	11	6	0	0	1227	36	934	5	2	0	2	977	2964	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	4	48	84	0	0	136	15	25	3	2	0	0	45	61	227	19	4	0	0	0	311	14	290	4	0	1	0	309	801	
4:15 PM	3	44	106	0	0	153	21	35	4	0	0	0	60	58	192	15	11	0	0	0	276	19	308	1	1	1	2	330	819	
4:30 PM	4	50	98	0	0	152	23	27	3	1	0	0	54	67	211	23	9	0	0	0	310	14	276	3	4	0	0	297	813	
4:45 PM	4	51	88	0	0	143	17	34	4	3	0	0	58	59	210	18	3	2	0	0	292	11	286	2	0	0	3	299	792	
Hourly Total	15	193	376	0	0	584	76	121	14	6	0	0	217	245	840	75	27	2	0	0	1189	58	1160	10	5	2	5	1235	3225	
5:00 PM	4	51	108	0	0	163	18	32	6	0	0	0	56	67	240	31	12	1	0	0	351	11	292	0	3	1	2	307	877	
5:15 PM	4	43	89	0	0	136	27	27	4	1	0	0	59	58	262	24	13	1	0	0	358	15	320	1	2	0	0	338	891	
5:30 PM	4	59	77	0	0	140	22	36	6	0	0	0	64	63	285	16	13	2	0	0	379	22	374	2	2	2	1	402	985	
5:45 PM	2	60	86	0	0	148	19	21	6	0	0	0	46	65	246	25	11	0	0	0	347	14	301	6	1	2	0	324	865	
Hourly Total	14	213	360	0	0	587	86	116	22	1	0	0	225	253	1033	96	49	4	0	0	1435	62	1287	9	8	5	3	1371	3618	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4	0	0	0	0	0	0	0	0	4	
Grand Total	42	617	1375	0	0	2034	470	535	62	12	0	2	1079	953	3947	254	98	14	0	0	5266	184	4234	28	15	13	12	4474	12853	
Approach %	2.1	30.3	67.6	0.0	-	-	43.6	49.6	5.7	1.1	0.0	-	-	18.1	75.0	4.8	1.9	0.3	-	-	4.1	94.6	0.6	0.3	0.3	-	-	-	-	
Total %	0.3	4.8	10.7	0.0	-	15.8	3.7	4.2	0.5	0.1	0.0	-	8.4	7.4	30.7	2.0	0.8	0.1	-	41.0	1.4	32.9	0.2	0.1	0.1	-	34.8	-		
Lights	40	611	1354	0	-	2005	462	529	62	11	0	-	1064	931	3694	243	98	14	-	4980	182	3995	27	15	13	-	4232	12281		
% Lights	95.2	99.0	98.5	-	-	98.6	98.3	98.9	100.0	91.7	-	-	98.6	97.7	93.6	95.7	100.0	100.0	-	94.6	98.9	94.4	96.4	100.0	100.0	-	94.6	95.5	-	
Buses	0	2	10	0	-	12	3	2	0	1	0	-	6	5	26	2	0	0	-	33	0	55	0	0	0	-	55	106		
% Buses	0.0	0.3	0.7	-	-	0.6	0.6	0.4	0.0	8.3	-	-	0.6	0.5	0.7	0.8	0.0	0.0	-	0.6	0.0	1.3	0.0	0.0	0.0	-	1.2	0.8		
Trucks	2	4	11	0	-	17	5	4	0	0	0	-	9	17	227	9	0	0	-	253	2	184	1	0	0	-	187	466		
% Trucks	4.8	0.6	0.8	-	-	0.8	1.1	0.7	0.0	0.0	-	-	0.8	1.8	5.8	3.5	0.0	0.0	-	4.8	1.1	4.3	3.6	0.0	0.0	-	4.2	3.6		
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	5	-	-	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41.7	-	-	
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	7	-	-	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58.3	-	-	









www.TSTData.com  
184 Baker Rd

Robbinsville, NJ  
Route 33/Route 130  
Saturday, September 9, 2017  
Location: 40.216268, -  
74.619922

Coatesville, Pennsylvania, United States 19320  
610-466-1469  
Serving Transportation Professionals Since 1995

Count Name: Rt 33-Rt 130-Sat  
Site Code:  
Start Date: 09/09/2017  
Page No: 1

### Turning Movement Data

Start Time	Route 33 Eastbound						Route 33 Westbound						Route 130 Northbound						Route 130 Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds		App. Total
11:00 AM	70	46	6	0	1	122	8	67	18	0	0	93	0	161	1	0	0	1	162	0	180	50	0	0	230	607
11:15 AM	78	55	13	0	0	146	26	79	20	0	0	125	0	192	0	0	0	0	192	0	173	52	0	0	225	688
11:30 AM	79	51	12	0	0	142	18	55	11	0	0	84	0	184	2	0	0	0	186	0	176	46	0	0	222	634
11:45 AM	56	42	8	0	0	106	20	58	13	0	0	91	0	164	1	0	0	0	165	0	176	61	0	0	237	599
Hourly Total	283	194	39	0	1	516	72	259	62	0	0	393	0	701	4	0	0	1	705	0	705	209	0	0	914	2528
12:00 PM	64	46	10	0	0	120	18	66	11	0	0	95	0	171	1	1	0	0	173	0	202	61	0	0	263	651
12:15 PM	84	45	9	0	0	138	17	74	18	0	0	109	0	182	1	1	0	0	184	0	210	70	0	0	280	711
12:30 PM	78	53	11	0	0	142	20	73	14	0	0	107	0	186	1	0	0	0	187	0	232	75	0	0	307	743
12:45 PM	76	43	12	0	0	131	11	90	26	0	0	127	0	187	5	0	0	0	192	1	200	78	0	0	279	729
Hourly Total	302	187	42	0	0	531	66	303	69	0	0	438	0	726	8	2	0	0	736	1	844	284	0	0	1129	2834
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	585	381	81	0	1	1047	138	562	131	0	0	831	0	1427	12	2	0	1	1441	1	1549	493	0	0	2043	5362
Approach %	55.9	36.4	7.7	0.0	-	-	16.6	67.6	15.8	0.0	-	-	0.0	99.0	0.8	0.1	0.0	-	-	0.0	75.8	24.1	0.0	-	-	-
Total %	10.9	7.1	1.5	0.0	-	19.5	2.6	10.5	2.4	0.0	-	15.5	0.0	26.6	0.2	0.0	0.0	-	26.9	0.0	28.9	9.2	0.0	-	38.1	-
Lights	580	380	77	0	-	1037	120	554	129	0	-	803	0	1388	12	2	0	-	1402	1	1515	486	0	-	2002	5244
% Lights	99.1	99.7	95.1	-	-	99.0	87.0	98.6	98.5	-	-	96.6	-	97.3	100.0	100.0	-	-	97.3	100.0	97.8	98.6	-	-	98.0	97.8
Buses	0	0	2	0	-	2	1	2	0	0	-	3	0	7	0	0	0	-	7	0	3	0	0	-	3	15
% Buses	0.0	0.0	2.5	-	-	0.2	0.7	0.4	0.0	-	-	0.4	-	0.5	0.0	0.0	-	-	0.5	0.0	0.2	0.0	-	-	0.1	0.3
Trucks	5	1	2	0	-	8	17	6	2	0	-	25	0	32	0	0	0	-	32	0	31	7	0	-	38	103
% Trucks	0.9	0.3	2.5	-	-	0.8	12.3	1.1	1.5	-	-	3.0	-	2.2	0.0	0.0	-	-	2.2	0.0	2.0	1.4	-	-	1.9	1.9
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

1113108001

Directive No. 307-01

Route NJ 33 and  
Washington Boulevard/  
Golden Crest Driveway  
Washington Township  
Mercer County

90 Second Background Cycle

Phase	Signal Faces					Time (Sec.)
	<u>1, 2</u>	<u>3, 4</u>	<u>5-9</u>	<u>10-13</u>	<u>14-17</u>	
(Without Pedestrian Actuation)						
1. Route NJ 33 Left Turns	R,	R,	R	DW	DW	5-10
Change	<G-	<G-				
	R,	R,	R	DW	DW	3
	<Y-	<Y-				
2. Route NJ 33 ROW	G	G	R	W	DW	38-22
Pedestrian Clearance	G	G	R	FL DW	DW	24
Change	Y	Y	R	DW	DW	5*
Clearance	R	R	R	DW	DW	2
3. Washington Blvd./ Golden Crest Driveway	R	R	G	DW	DW	7-18
Change	R	R	Y	DW	DW	4
Clearance	R	R	R	DW	DW	2
(With Pedestrian Actuation)						
1. Route NJ 33 Left Turns	R,	R,	R	DW	DW	5-10
Change	<G-	<G-				
	R,	R,	R	DW	DW	3
	<Y-	<Y-				
2. Route NJ 33 ROW	G	G	R	W	DW	23-18
Pedestrian Clearance	G	G	R	FL DW	DW	24
Change	Y	Y	R	DW	DW	5*
Clearance	R	R	R	DW	DW	2
3. Washington Blvd./ Golden Crest Driveway	R	R	G	DW	W	7
Pedestrian Clearance	R	R	G	DW	FL DW	15
Change	R	R	Y	DW	DW	4
Clearance	R	R	R	DW	DW	2
Emergency Flash	Y	Y	R	--	--	--

Notes:

\* Offset is 34 seconds as measured from the beginning of yellow to Route NJ 33 at Klockner Road to the beginning of yellow to Route NJ 33 at this intersection.

1113108002

Directive No. 307-01

Route NJ 33 and  
Washington Boulevard/  
Golden Crest Driveway  
Washington Township  
Mercer County

The memory circuit for Phases 1 & 3 are to be disconnected.

The manual control is to be removed.

The vehicle interval is to be two seconds.

The phase 1 left turn lanes are to operate independently and concurrently if actuation occurs on both approaches. Each left turn lane shall have the capability of being initiated, extended or terminated separately. If only one of the left turn lanes terminate, then the non-conflicting through movement shall be initiated.

Permitted sequences: 1-2-3; 2-3-2

**90 – SECOND BACKGROUND CYCLE**

Phase	Signal Indications					Time (sec.)
	1,2,4,5	3,6	7-10	11-14	15-18	
<b>WITHOUT PEDESTRIAN ACTUATION</b>						
A) Route NJ 33 Lead Lefts Change	<G-/R	R	R	DW	DW	5-12
	<Y-/R	R	R	DW	DW	3
B) Route NJ 33 ROW Change Clearance	G	G	R	DW	DW	62-39
	Y	Y	R	DW	DW	5*
	R	R	R	DW	DW	2
C) Lake Drive ROW Change Clearance	R	R	G	DW	DW	7-23
	R	R	Y	DW	DW	3
	R	R	R	DW	DW	3
<b>WITH PEDESTRIAN ACTUATION</b>						
A) Route NJ 33 Lead Lefts Change	<G-/R	R	R	DW	DW	5-12
	<Y-/R	R	R	DW	DW	3
B) Route NJ 33 ROW Pedestrian Clearance Change Clearance	G	G	R	W	DW	23
	G	G	R	FDW	DW	19
	Y	Y	R	DW	DW	5
	R	R	R	DW	DW	2
C) Lake Drive ROW Pedestrian Clearance Change Clearance	R	R	G	DW	W	7
	R	R	G	DW	FDW	20**
	R	R	Y	DW	DW	3
	R	R	R	DW	DW	3
Emergency Flash	Y	Y	R	DARK	DARK	

**Notes:**

- \*An offset of 72 seconds shall be measured from the beginning of yellow to Route NJ 33 traffic at Klockner Road to the beginning of yellow to Route NJ 33 traffic at this intersection.
- Manual Control shall be disconnected.
- Vehicle extension shall be set at 2 seconds.
- Vehicular memory shall be turned off.
- All unactuated phases shall be skipped.
- Phase A cannot follow Phase B.
- Route 33 left turn lanes are to operate independently and concurrently if actuation occurs on both approaches. Each left turn lane shall have the capability of being initiated, extended, or terminated separately. If only one of the left turn lanes initiates, extends, or terminates, then the non-conflicting through movement shall be initiated.
- \*\* The Phase C maximum green times will be exceeded during pedestrian actuation using the pedestrian-override feature.

67 – 124 SECOND VARIABLE CYCLE

Phase	Signal Indications												Time (Secs.)	
	<u>1, 2</u>	<u>3</u>	<u>4, 5</u>	<u>6, 7</u>	<u>18, 19</u>	<u>20</u>	<u>8, 9</u>	<u>10</u>	<u>11, 12</u>	<u>13 – 15</u>	<u>16, 17</u>	<u>21, 22</u>		<u>23, 24</u>
WITHOUT PEDESTRIAN ACTUATION														
A) Route NJ 33 EB	R	-R>	R	-R>	R	R	<G-	G	G / <del>18</del> ↗	R	R	DW	DW	5 – 8
Change	R	-R>	R	-R>	R	R	<Y-	G	G / <del>18</del> ↗	R	R	DW	DW	3
Clearance	R	-R>	R	-R>	R	R	<R-	G	G / <del>18</del> ↗	R	R	DW	DW	2
B) Route NJ 33 ROW	G	-G>	G	-G>	R	R	<R-	G	G / <del>18</del> ↗	R	R	DW	DW	10 – 30
Internal Clearance	G	-G>	Y	-G>	R	R	<R-	G	G / <del>18</del> ↗	R	R	DW	DW	4
Change	Y	-G>	R	-G>	R	R	<R-	Y	Y / <del>18</del> ↗	R	R	DW	DW	5
Clearance	R	-G>	R	-G>	R	R	<R-	R	R	R	R	DW	DW	2
C) County Route 526 SB	R	-G>	R	-G>	R	R	<R-	R	R	G / <G-	G	DW	DW	7 – 24
Change	R	-G>	R	-Y>	R	R	<R-	R	R	Y	Y	DW	DW	5
Clearance	R	-G>	R	-R>	R	R	<R-	R	R	R	R	DW	DW	5
D) County Route 526 NB	G	-G>	R	-R>	G / <G-	G	<R-	R	R / <del>18</del> ↗	R	R	DW	DW	7 – 24
Internal Clearance	G	-G>	R	-R>	Y	Y	<R-	R	R / <del>18</del> ↗	R	R	DW	DW	5
Change	Y	-Y>	R	-R>	R	R	<R-	R	R / <del>18</del> ↗	R	R	DW	DW	5
Clearance	R	-R>	R	-R>	R	R	<R-	R	R / <del>18</del> ↗	R	R	DW	DW	2

<u>MAXIMUM GREEN EXTENSION INPUT PARAMETERS</u>			
<u>Phase</u>	<u>Number of Successions</u>	<u>Step</u>	<u>Maximum Green Limit</u>
B	2	10	60
D	2	10	40

NOTES:

1. Manual control is to be disconnected.
2. Vehicle extension is to be set at 4 seconds for Phases B and D, and at 2 seconds for Phases A and C.
3. Memory shall be turned off (presence mode).
4. Signal shall rest in Phase B with minimum recall.
5. Pedestrian push button A shall call Phase B.
6. Pedestrian push button B shall call Phase C.
7. Any unactuated phases can be skipped; however, in the absence of any phase during the overlap, yellow and red clearances must be satisfied before resuming any conflicting phase.

DIR # 186-13

Route US 130 and Robbinsville-Allentown Road  
Robbinsville Twp., Mercer Co.90, 115, 120 AND 130 - SECOND BACKGROUND CYCLES

Phase	Signal Indications				Time (Seconds)			
	<u>1 - 5</u>	<u>11 - 16</u>	<u>7, 8</u>	<u>9, 10</u>	<u>Plan I</u> (120)	<u>Plan II</u> (130)	<u>Plan III</u> (90)	<u>Plan IV</u> (115)
A) Route US 130 ROW	G	R	<R-	<R-	87 - 41	97 - 52	57 - 28	82 - 37
Change	Y	R	<R-	<R-	6*	6*	6*	6*
Clearance	R	R	<R-	<R-	2	2	2	2
B) Robbinsville-Allentown Road ROW	R	G	<R-	<R-	7 - 38**	7 - 38**	7 - 29**	7 - 38**
Change	R	Y	<R-	<R-	5	5	5	5
Clearance	R	R	<R-	<R-	2	2	2	2
C) Route US 130 Left Turns	R	R	<G-	<G-	5 - 20	5 - 19	5 - 12	5 - 19
Change	R	R	<Y-	<Y-	3	3	3	3
Clearance	R	R	<R-	<R-	3	3	3	3
Emergency Flash	Y	R	<R-	<R-	-	-	-	-

NOTES:

- \*Offsets are measured from the beginning of yellow to Route US 130 traffic at this intersection.
- \*\*Actuation of a pedestrian push button shall guarantee 29 seconds of green time to Phase B.
- Left-turn lanes on Route US 130 to be separate phases but concurrently timed if actuation occurs on both slots. Each left-turn lane has the capability of terminating or extending separately and independently of the other, thereby reverting the time to the non-conflicting Route US 130 Phase A movement.
- The manual control cord is to be removed.
- The memory circuit is to be off.
- The vehicle interval is to be 2 seconds.

HOURS OF OPERATIONCYCLE LENGTH\*OFFSETS

Plan I: Monday thru Friday, 6:00 A.M. - 9:00 A.M.	120 Seconds	0 Seconds
Plan II: Monday thru Friday, 3:30 P.M. - 6:30 P.M.	130 Seconds	0 Seconds
Plan III: Monday thru Sunday, 10:00 P.M. - 6:00 A.M.	90 Seconds	0 Seconds
Plan IV: All Other Times	115 Seconds	0 Seconds

DIR# 94 - 12

## 90, 115, 120 AND 130 - SECOND BACKGROUND CYCLES

US Route 130 and NJ Route 33 & CR 526 Robbinsville Bypass  
Robbinsville Township  
Mercer County

Phase	Signal Indications					Time (seconds)			
	<u>NO PEDESTRIAN ACTUATION</u>					Plan I (120 Sec.)	Plan II (130 Sec.)	Plan III (90 Sec.)	Plan IV (115 Sec.)
	<u>1 - 6</u> <u>9, 19</u>	<u>10, 11</u> <u>15, 16</u>	<u>7, 8, 12, 13</u> <u>14, 17, 18</u>	<u>24, 25</u>	<u>20 - 23</u>				
A US Route 130 ROW Pedestrian Clearance Change Clearance	G	<R-	R	W	DW	57-22	67-24	27-10	52 - 13
	G	<R-	R	FDW	DW	27	27	27	27
	Y	<R-	R	DW	DW	6*	6*	6*	6*
	R	<R-	R	DW	DW	2	2	2	2
B NJ Route 33/CR 526 Bypass Left Turn Change Clearance	R	<G-	R	DW	DW	7 - 23	7 - 21	7 - 15	7 - 17
	R	<Y-	R	DW	DW	5	5	5	5
	R	<R-	R	DW	DW	2	2	2	2
C NJ Route 33/CR 526 Bypass Through/Right Turn Change Clearance	R	<R-	G	DW	DW	7 - 26	7 - 36	7 - 16	7 - 38
	R	<R-	Y	DW	DW	5	5	5	5
	R	<R-	R	DW	DW	2	2	2	2
<u>WITH PEDESTRIAN ACTUATION</u>									
A US Route 130 ROW Pedestrian Clearance Change Clearance	G	<R-	R	W	DW	32-16	42-24	12 - 5	27 - 13
	G	<R-	R	FDW	DW	27	27	27	27
	Y	<R-	R	DW	DW	6	6	6	6
	R	<R-	R	DW	DW	2	2	2	2
B NJ Route 33/CR 526 Bypass Left Turn Change Clearance	R	<G-	R	DW	DW	7 - 23	7 - 21	7 - 15	7 - 17
	R	<Y-	R	DW	DW	5	5	5	5
	R	<R-	R	DW	DW	2	2	2	2
C NJ Route 33/CR 526 Bypass Through/Right Turn Pedestrian Clearance Vehicle Extension Change Clearance	R	<R-	G	DW	W	4	4	4	4
	R	<R-	G	DW	FDW	28	28	28	28
	R	<R-	G	DW	DW	0	0 - 4	0	0 - 4
	R	<R-	Y	DW	DW	5	5	5	5
	R	<R-	R	DW	DW	2	2	2	2
Emergency Flash	Y	<R-	R	DARK	DARK	-	-	-	-

NOTES:

- \*Offsets are measured from the beginning of yellow to Route US 130 traffic at Robbinsville-Allentown Road to the beginning of yellow to US Route 130 at this intersection.
- The manual control cord is to be removed.
- The memory circuits shall be disconnected.
- The vehicle interval is to be 2 seconds.
- "STOP-IN-WALK" or "Pedestrian Over-ride" function in the controller shall be enabled for phase C pedestrian actuation.
- Left turn slots are to be wired separately but concurrently timed if actuation occurs on each slot. Each slot shall have the capability of terminating or extending independently of the other, thereby reverting the time to the non-conflicting through movements.
- Phase B and C have the capability of being skipped.



HOURS OF OPERATION

DIR# 94 - 12

Plan I:  
 Plan II:  
 Plan III:  
 Plan IV:

Monday thru Friday, 6:00 A.M. - 9:00 A.M.  
 Monday thru Friday, 3:30 P.M. - 6:30 P.M.  
 Monday thru Sunday, 10:00 P.M. - 6:00 A.M.  
 All Other Times

CYCLE LENGTH

120 Seconds  
 130 Seconds  
 90 Seconds  
 115 Seconds

\*OFFSETS

10 Seconds  
 128 Seconds  
 84 Seconds  
 32 Seconds

PRE-EMPTION NOTES:

- 1 The intersection shall have a controller cabinet with a controller or other components capable of pre-emption features.
- 2 Remote control pre-emption is permitted from all approaches to the intersection.
- 3 A pre-emption from either of US Route 130 approaches shall provide a green time interval ROW to both directions of US Route 130.
- 4 A pre-emption from NJ Route 33 eastbound shall provide a green time interval ROW to this approach only.
- 5 A pre-emption from CR 526 westbound shall provide a green time interval ROW to this approach only.
- 6 If the pre-emption occurs simultaneously from different intersection approaches, the pre-emption shall respond in this priority order:
  - A. US Route 130 ROW; pre-emption from northbound or southbound approaches.
  - B. NJ Route 33 eastbound ROW, pre-emption from eastbound approach.
  - C. CR 526 westbound ROW; pre-emption from westbound approach.
- 7 The controller shall guarantee all vehicular and pedestrian minimum, change and clearance interval times.
- 8 If controller is replaced with one without internal pre-emption, the pre-emption device shall be disconnected.
- 9 The pre-emption shall not override the signal flashing operation.
- 10 US Route 130 ROW shall be guaranteed 18 seconds minimum green time interval before a pre-emption to another direction or phase is serviced.
- 11 NJ Route 33 eastbound ROW shall be guaranteed 26 seconds minimum green time interval before a pre-emption to another direction or phase is serviced.
- 12 CR 526 westbound ROW shall be guaranteed 26 seconds minimum green time interval before a pre-emption to another direction or phase is serviced.



Town Center South  
Robbinsville Township, Mercer County, New Jersey  
MC Project No.: 17004213G  
Appendix

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# ***TOWN CENTER SOUTH***

## ***TRAFFIC FEASIBILITY STUDY***

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### **APPENDIX C**

#### **TRIP GENERATION**

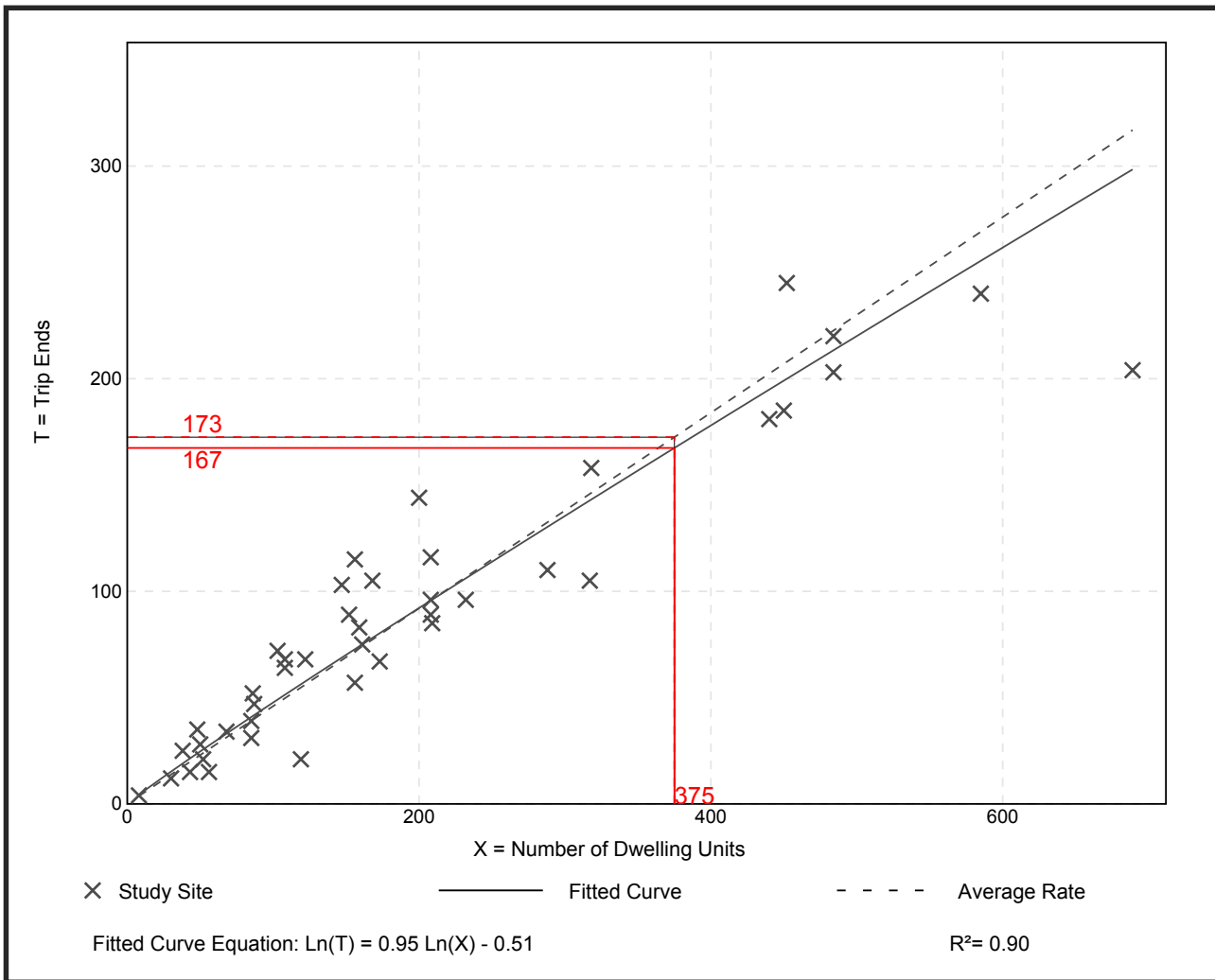
# Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 42  
 Avg. Num. of Dwelling Units: 199  
 Directional Distribution: 23% entering, 77% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

## Data Plot and Equation



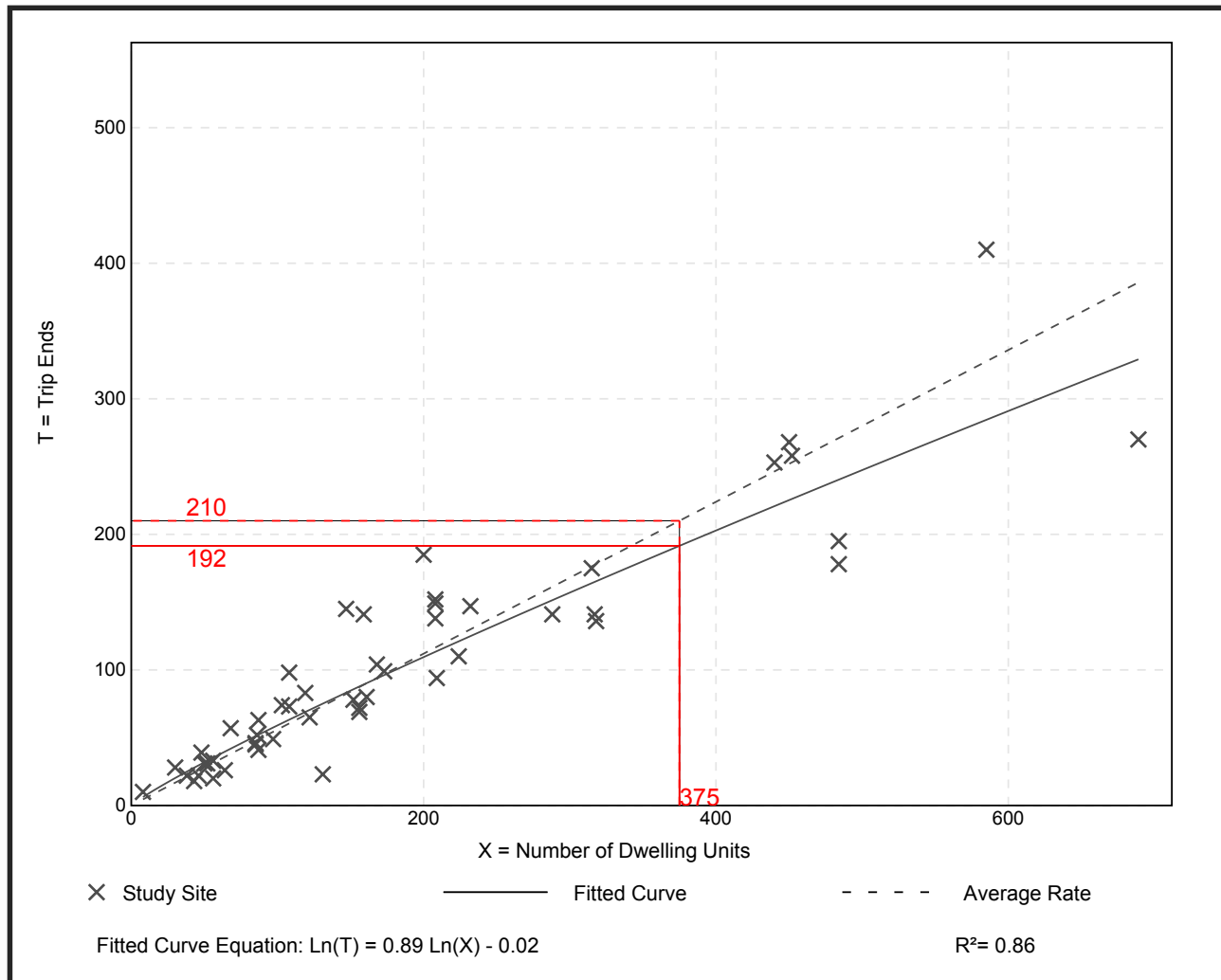
# Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 50  
 Avg. Num. of Dwelling Units: 187  
 Directional Distribution: 63% entering, 37% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

## Data Plot and Equation



# Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units  
On a: Saturday , Peak Hour of Generator

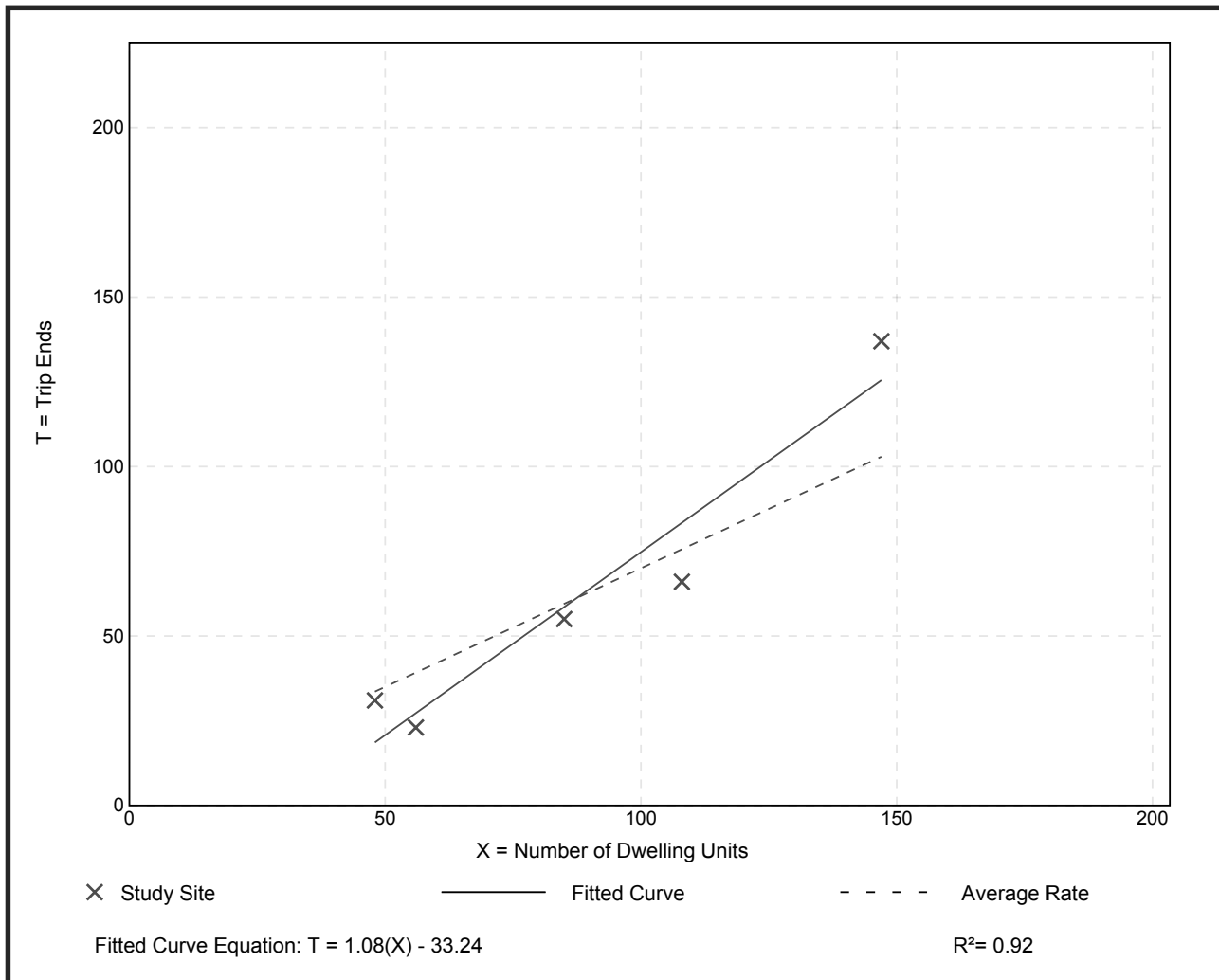
Setting/Location: General Urban/Suburban  
Number of Studies: 5  
Avg. Num. of Dwelling Units: 89  
Directional Distribution: Not Available

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.41 - 0.93	0.20

## Data Plot and Equation

Caution – Small Sample Size



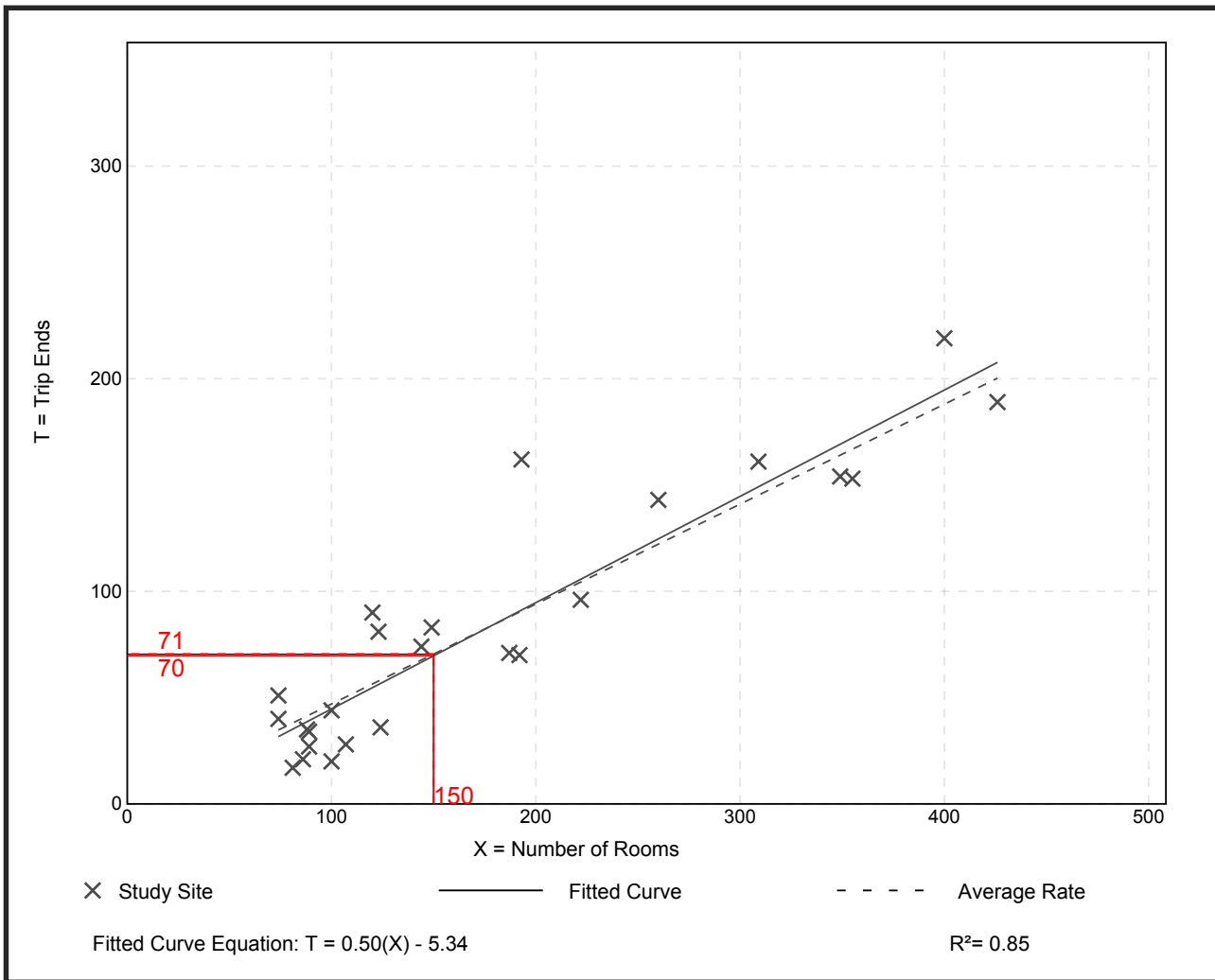
# Hotel (310)

Vehicle Trip Ends vs: Rooms  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 25  
 Avg. Num. of Rooms: 178  
 Directional Distribution: 59% entering, 41% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.47	0.20 - 0.84	0.14

## Data Plot and Equation



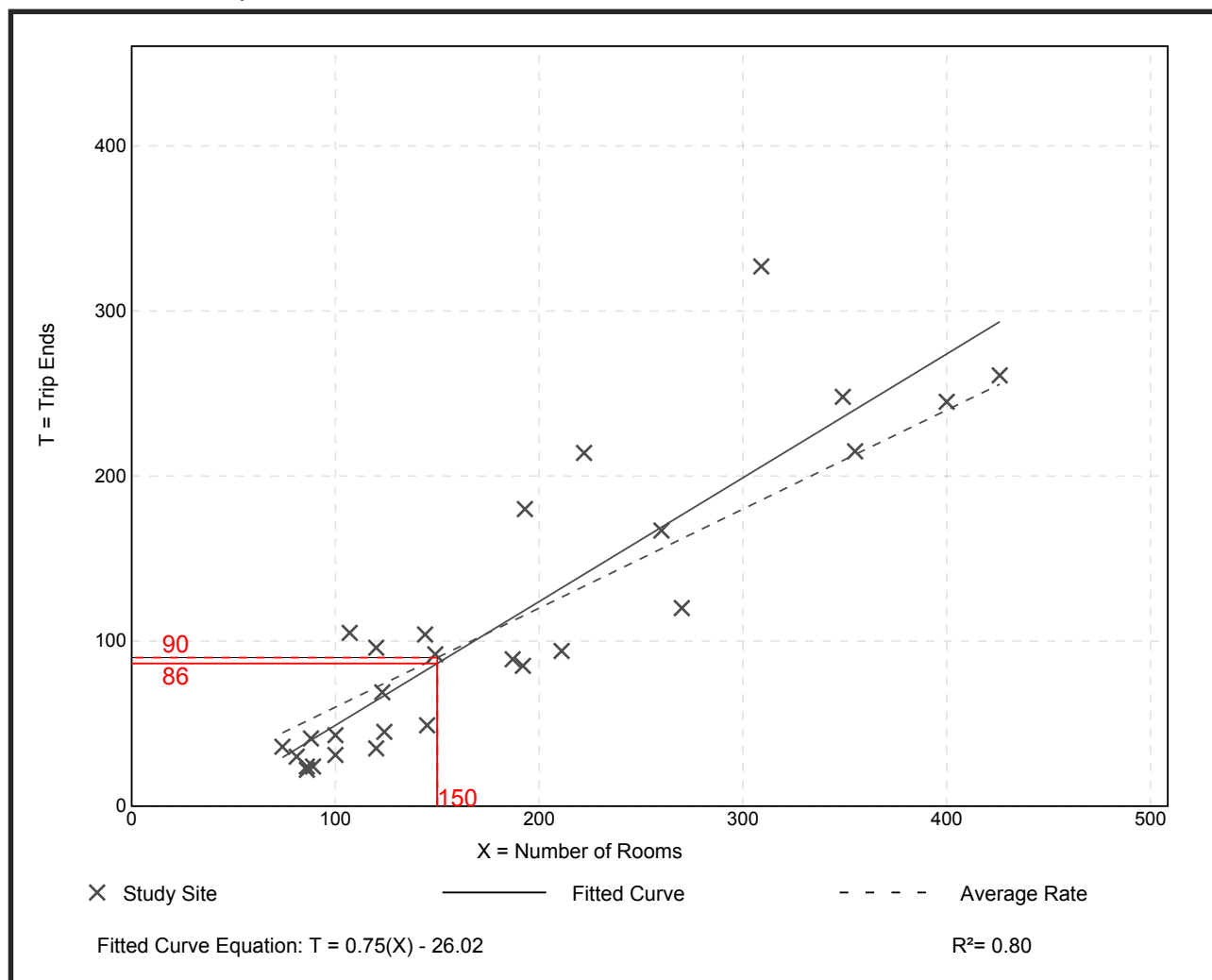
# Hotel (310)

Vehicle Trip Ends vs: Rooms  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 28  
 Avg. Num. of Rooms: 183  
 Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.60	0.26 - 1.06	0.22

## Data Plot and Equation



# Hotel (310)

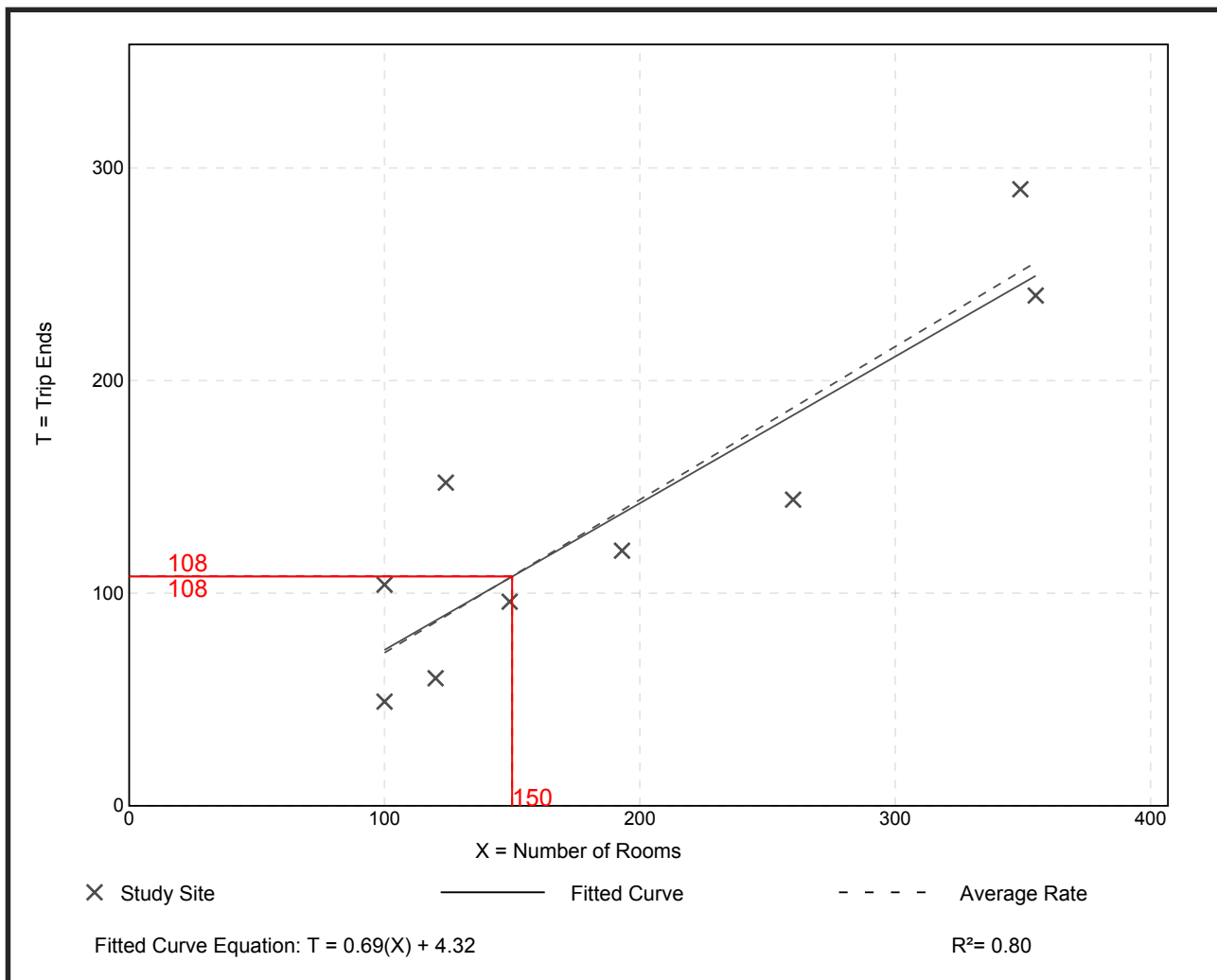
Vehicle Trip Ends vs: Rooms  
On a: Saturday , Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 9  
Avg. Num. of Rooms: 194  
Directional Distribution: 56% entering, 44% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.72	0.49 - 1.23	0.21

## Data Plot and Equation





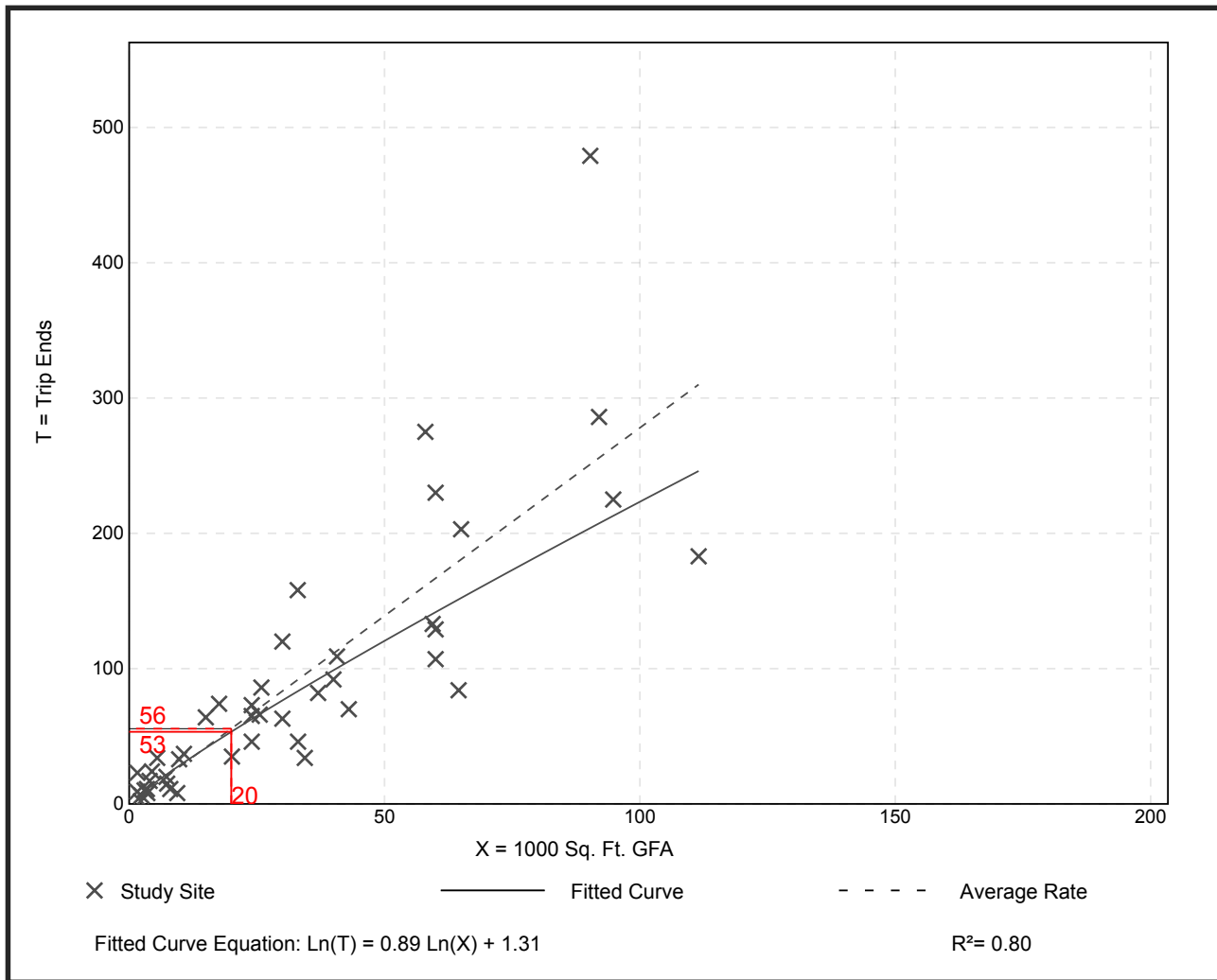
# Medical-Dental Office Building (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 44  
 Avg. 1000 Sq. Ft. GFA: 32  
 Directional Distribution: 78% entering, 22% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.78	0.85 - 14.30	1.28

## Data Plot and Equation



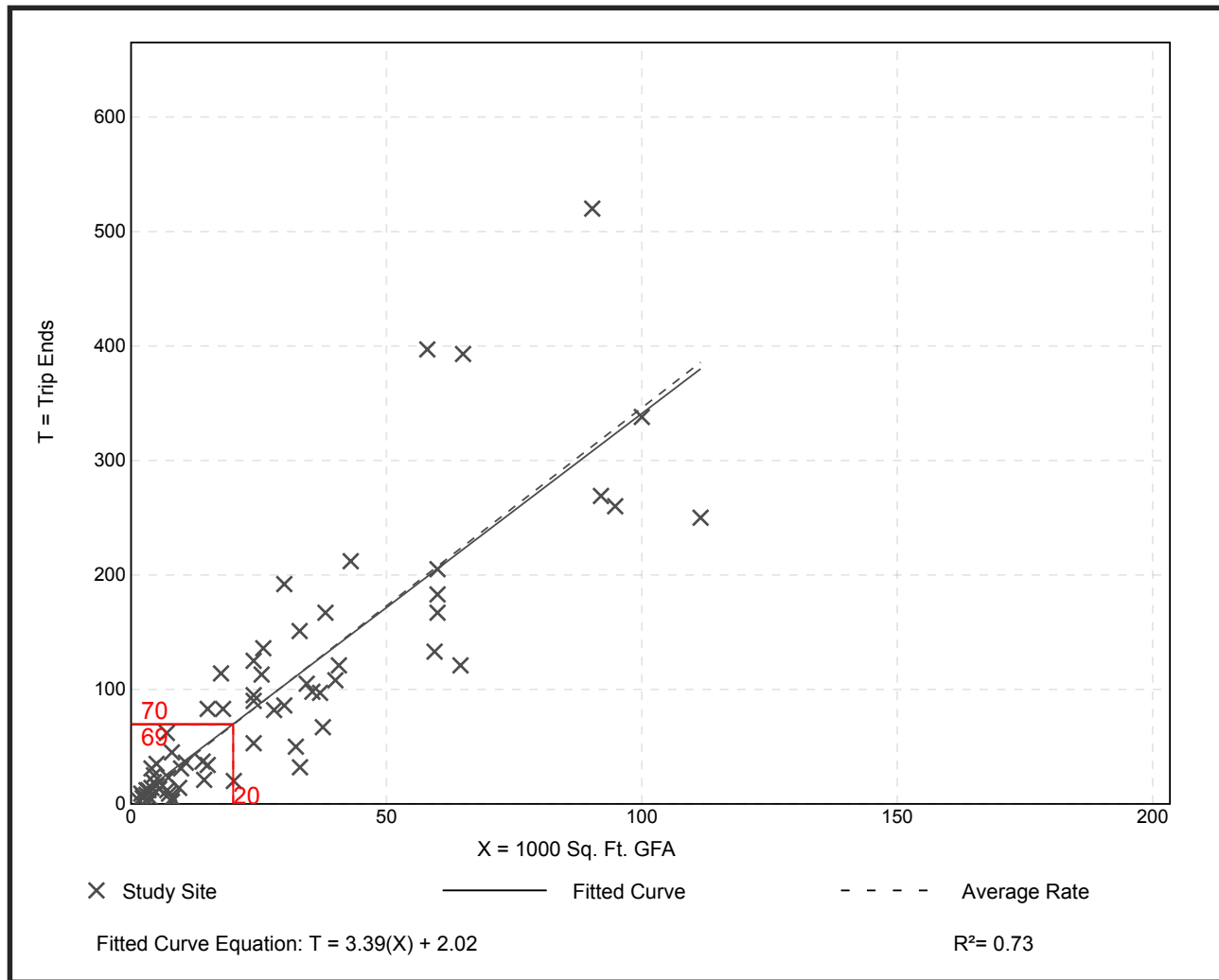
# Medical-Dental Office Building (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 65  
 Avg. 1000 Sq. Ft. GFA: 28  
 Directional Distribution: 28% entering, 72% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.46	0.25 - 8.86	1.58

## Data Plot and Equation



# Medical-Dental Office Building (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Saturday, Peak Hour of Generator

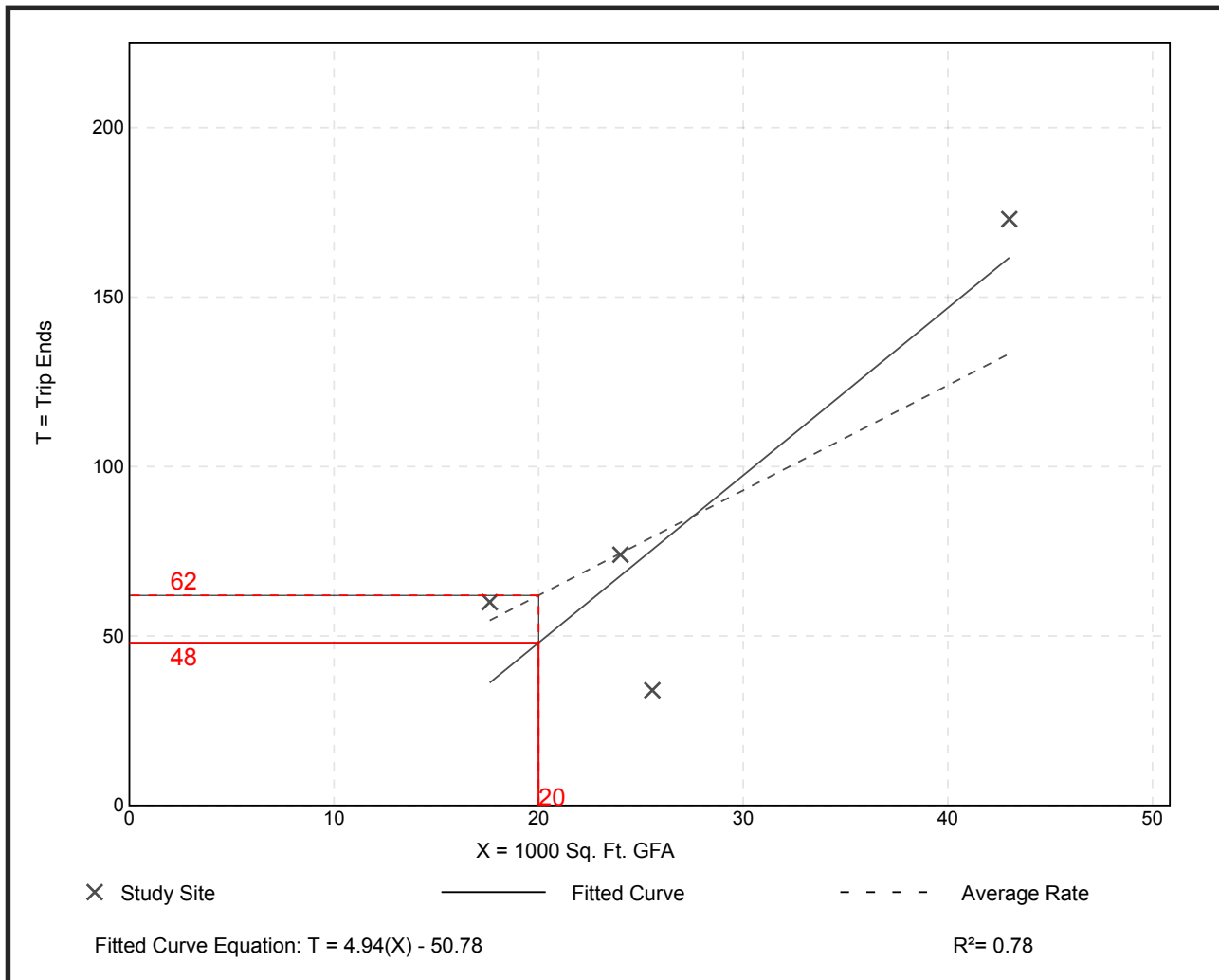
Setting/Location: General Urban/Suburban  
Number of Studies: 4  
Avg. 1000 Sq. Ft. GFA: 28  
Directional Distribution: 57% entering, 43% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.10	1.33 - 4.02	1.20

## Data Plot and Equation

Caution – Small Sample Size



# Public Park (411)

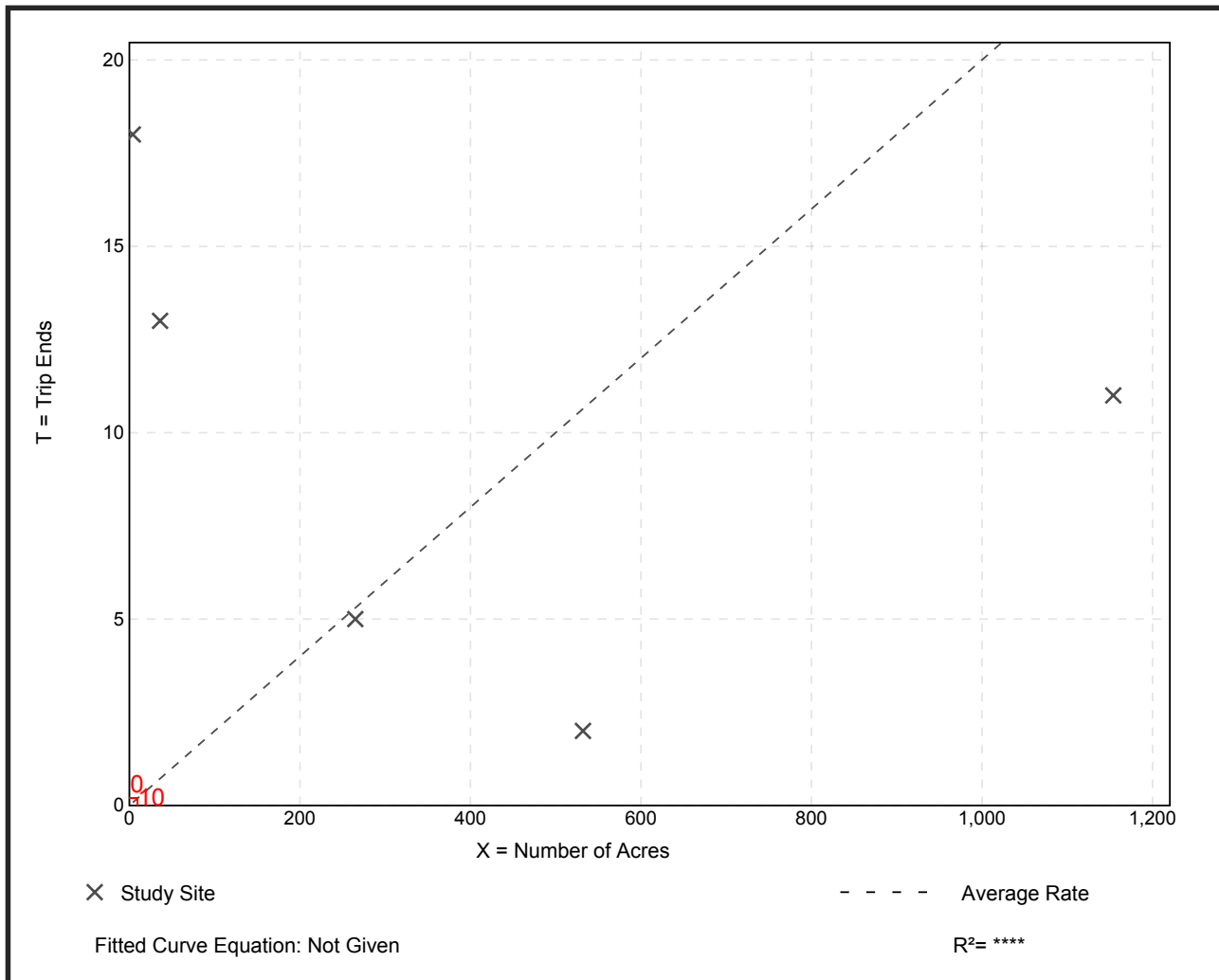
Vehicle Trip Ends vs: Acres  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 5  
 Avg. Num. of Acres: 398  
 Directional Distribution: 59% entering, 41% exiting

## Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.02	0.00 - 4.50	0.23

## Data Plot and Equation

Caution – Small Sample Size



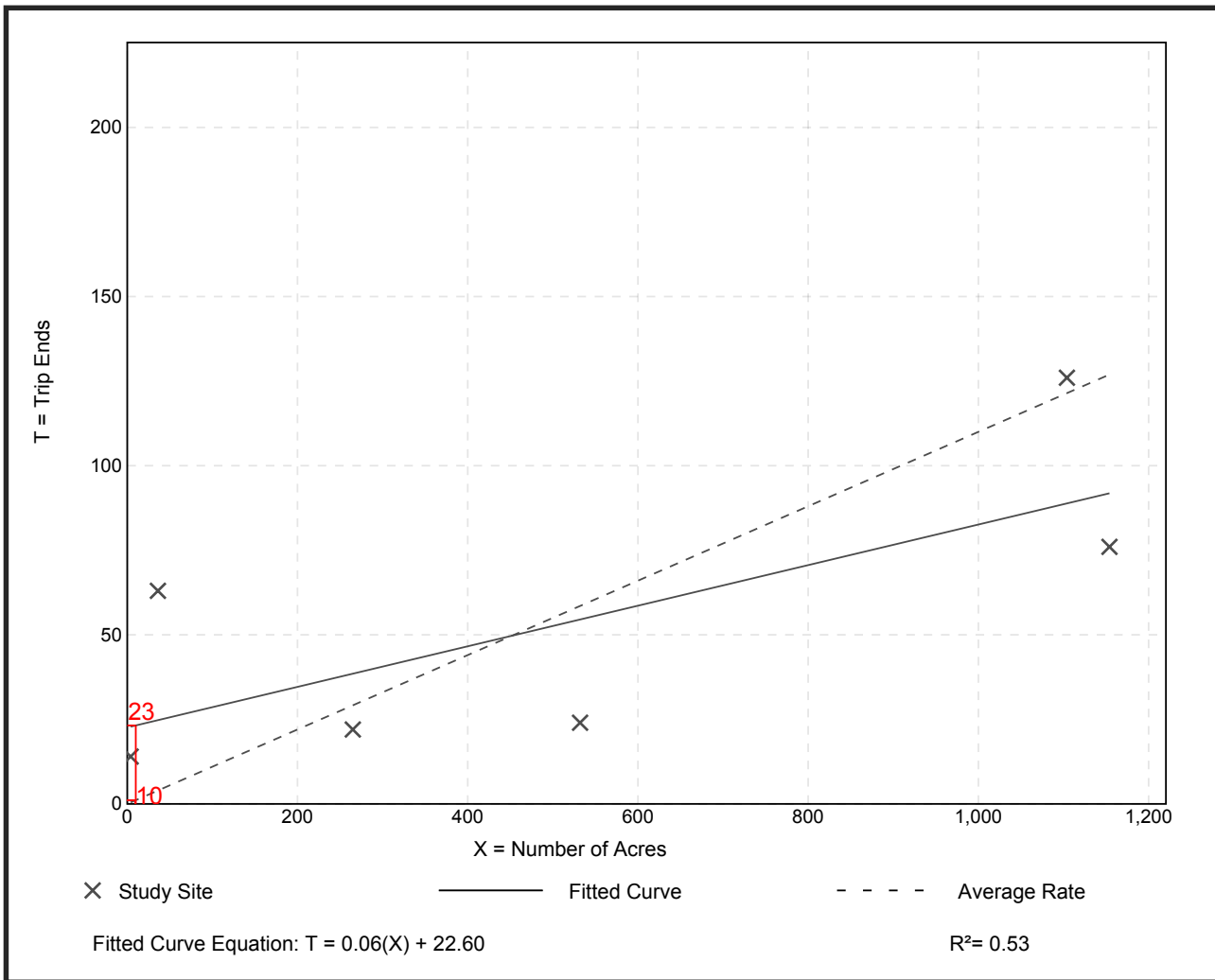
# Public Park (411)

Vehicle Trip Ends vs: Acres  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 6  
 Avg. Num. of Acres: 516  
 Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.11	0.05 - 3.50	0.24

## Data Plot and Equation



# Public Park (411)

Vehicle Trip Ends vs: Acres  
On a: Saturday, Peak Hour of Generator

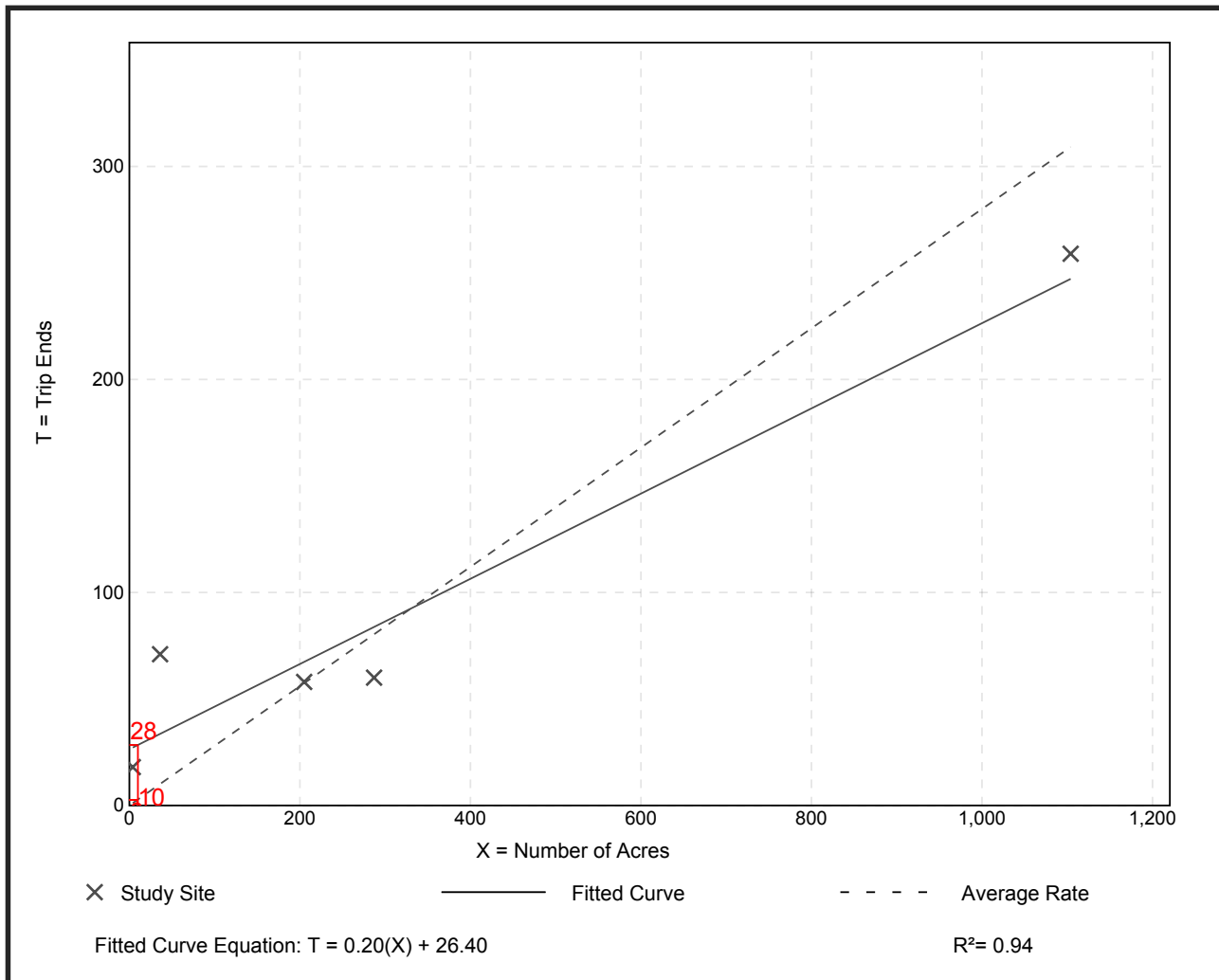
Setting/Location: General Urban/Suburban  
Number of Studies: 5  
Avg. Num. of Acres: 327  
Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.28	0.21 - 4.50	0.37

## Data Plot and Equation

Caution – Small Sample Size



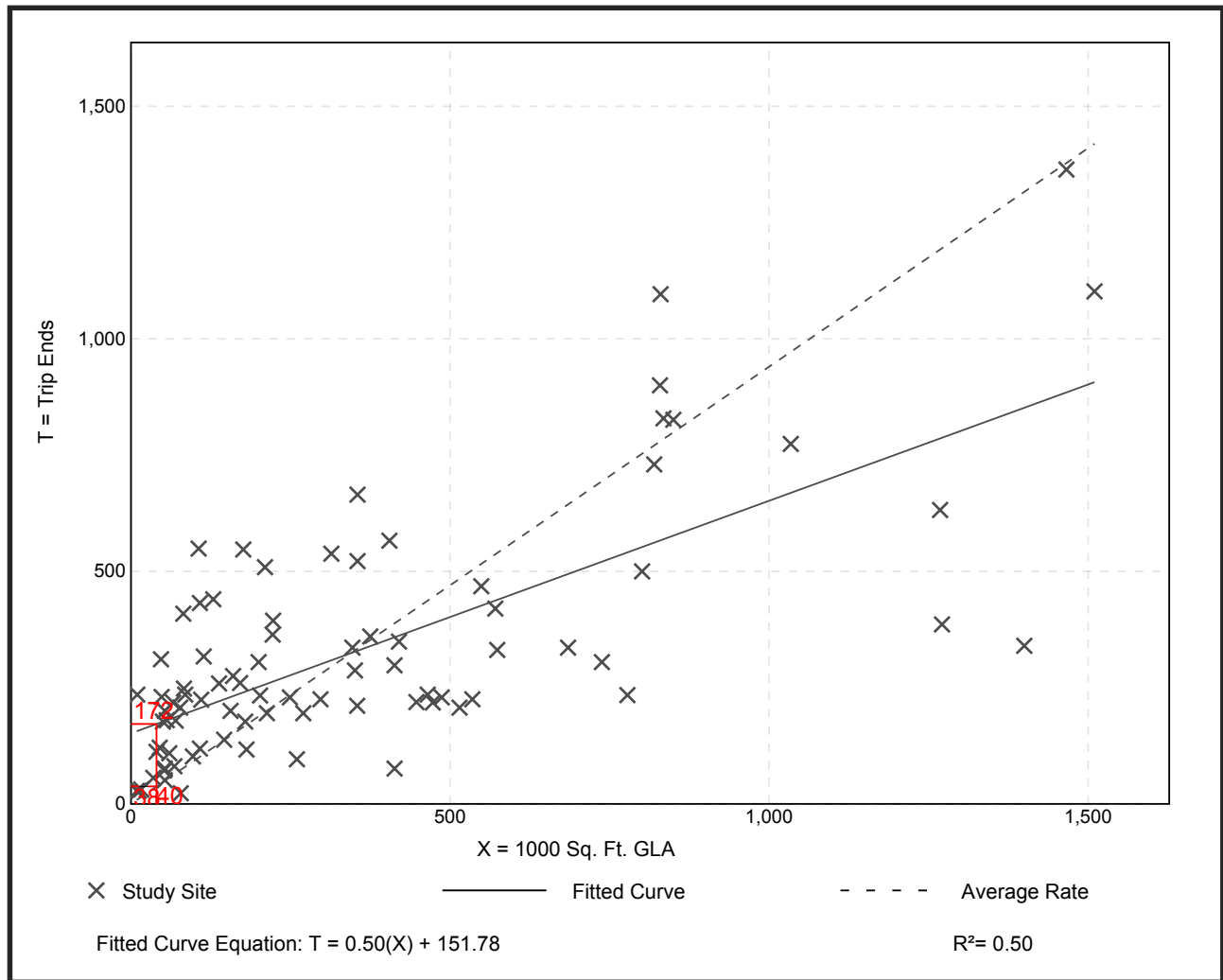
# Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 84  
 Avg. 1000 Sq. Ft. GLA: 351  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

## Data Plot and Equation



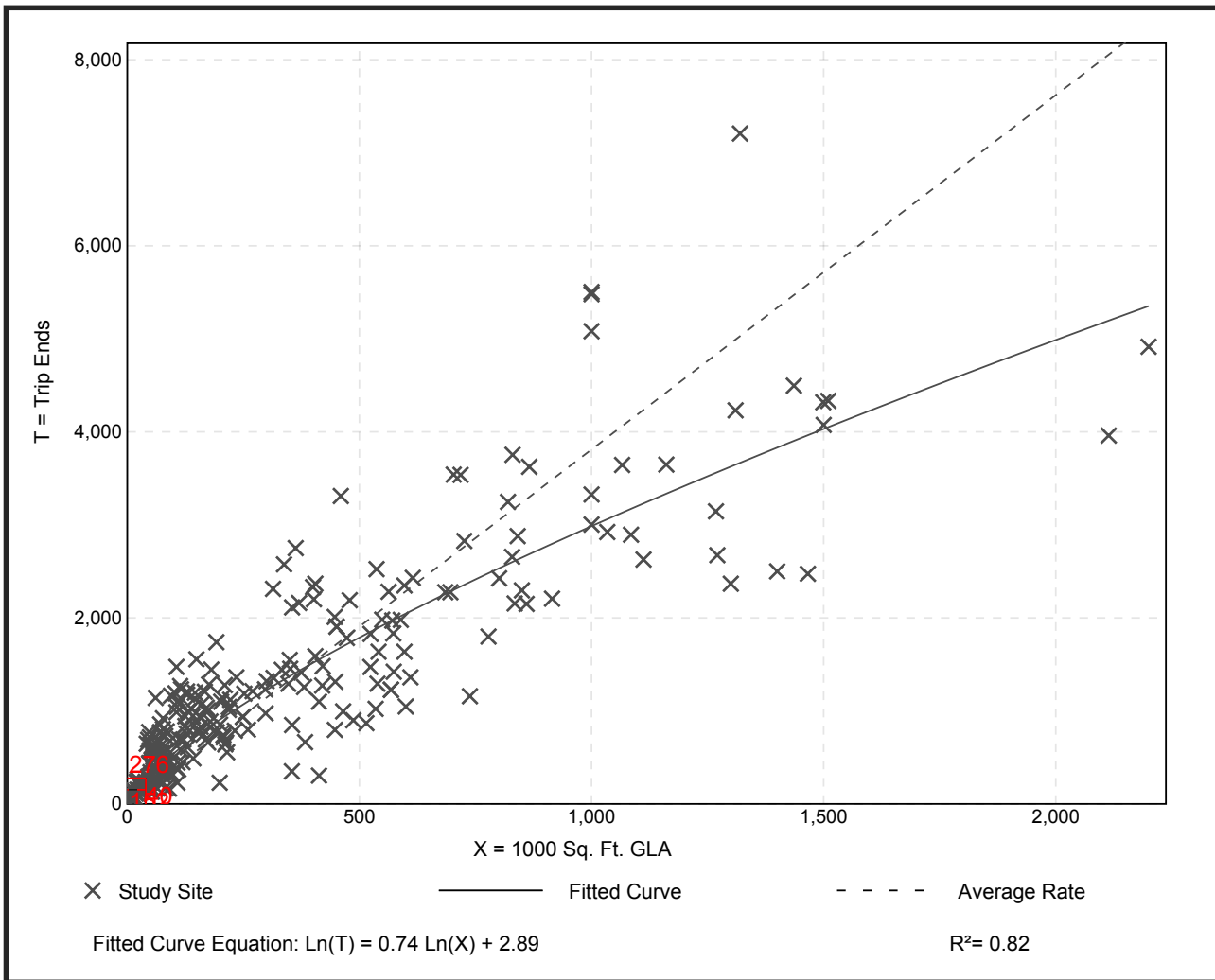
# Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 261  
 Avg. 1000 Sq. Ft. GLA: 327  
 Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

## Data Plot and Equation





# Shopping Center (820)

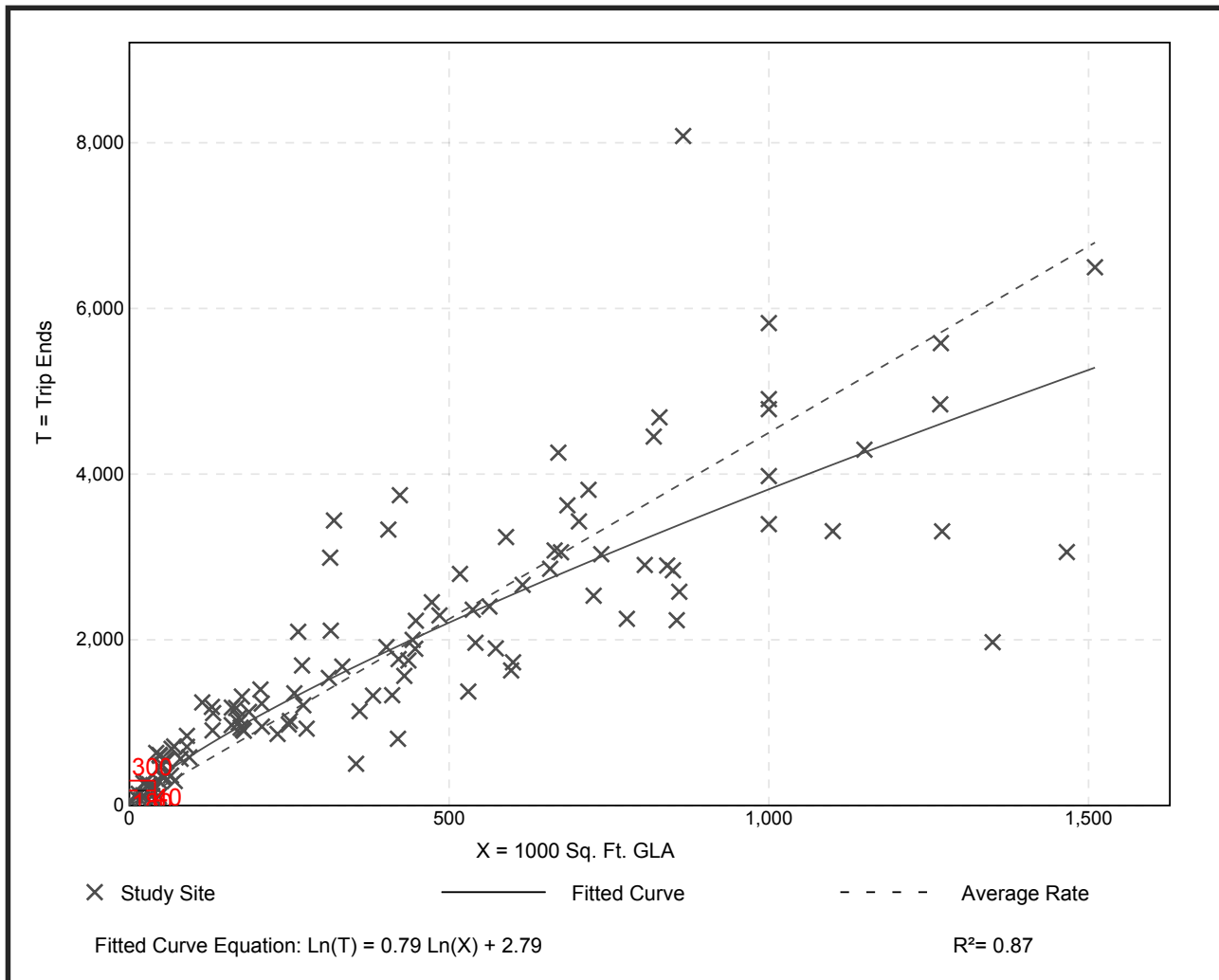
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 119  
Avg. 1000 Sq. Ft. GLA: 416  
Directional Distribution: 52% entering, 48% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

## Data Plot and Equation



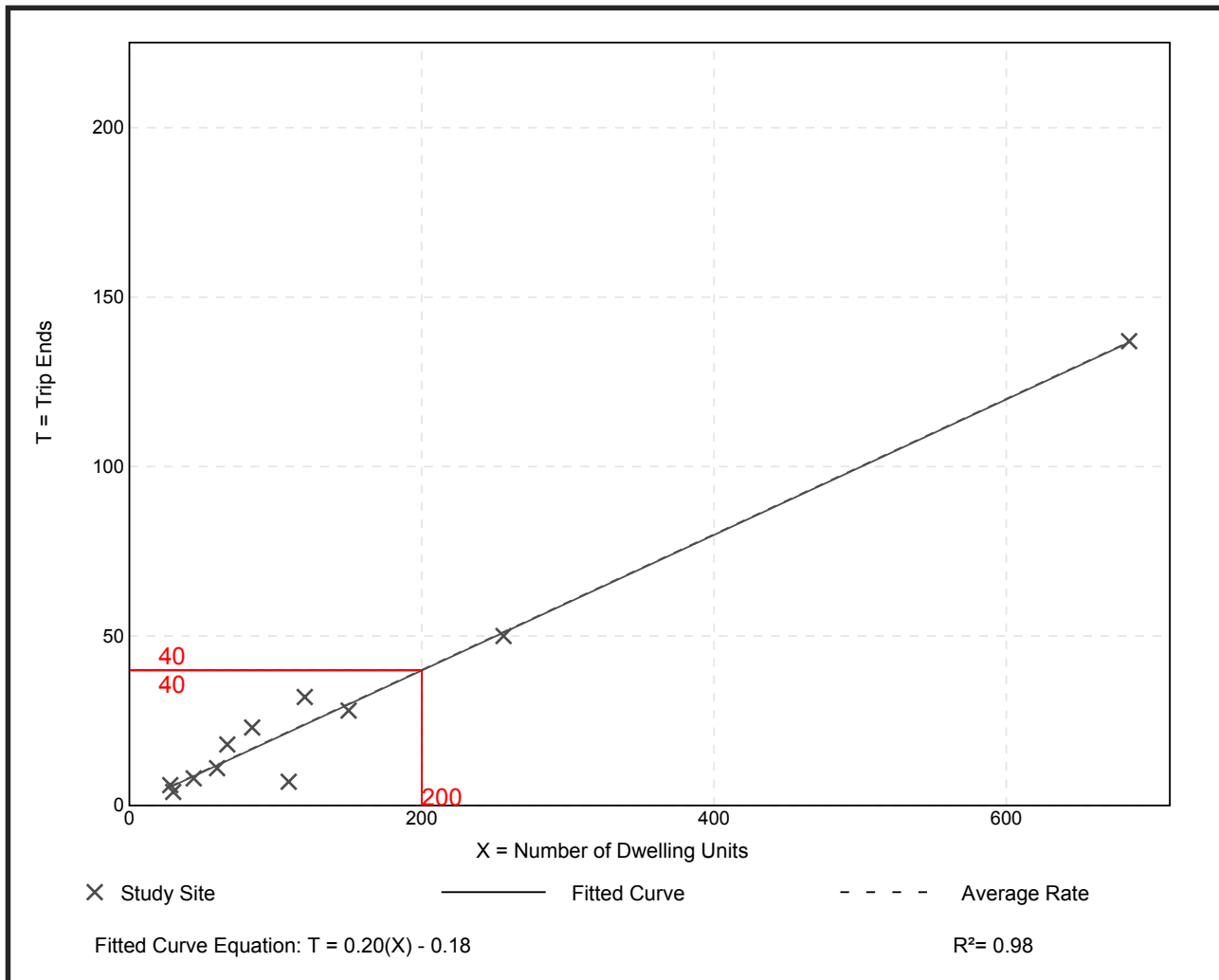
# Senior Adult Housing - Attached (252)

Vehicle Trip Ends vs: Dwelling Units  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 11  
 Avg. Num. of Dwelling Units: 148  
 Directional Distribution: 35% entering, 65% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.06 - 0.27	0.05

## Data Plot and Equation



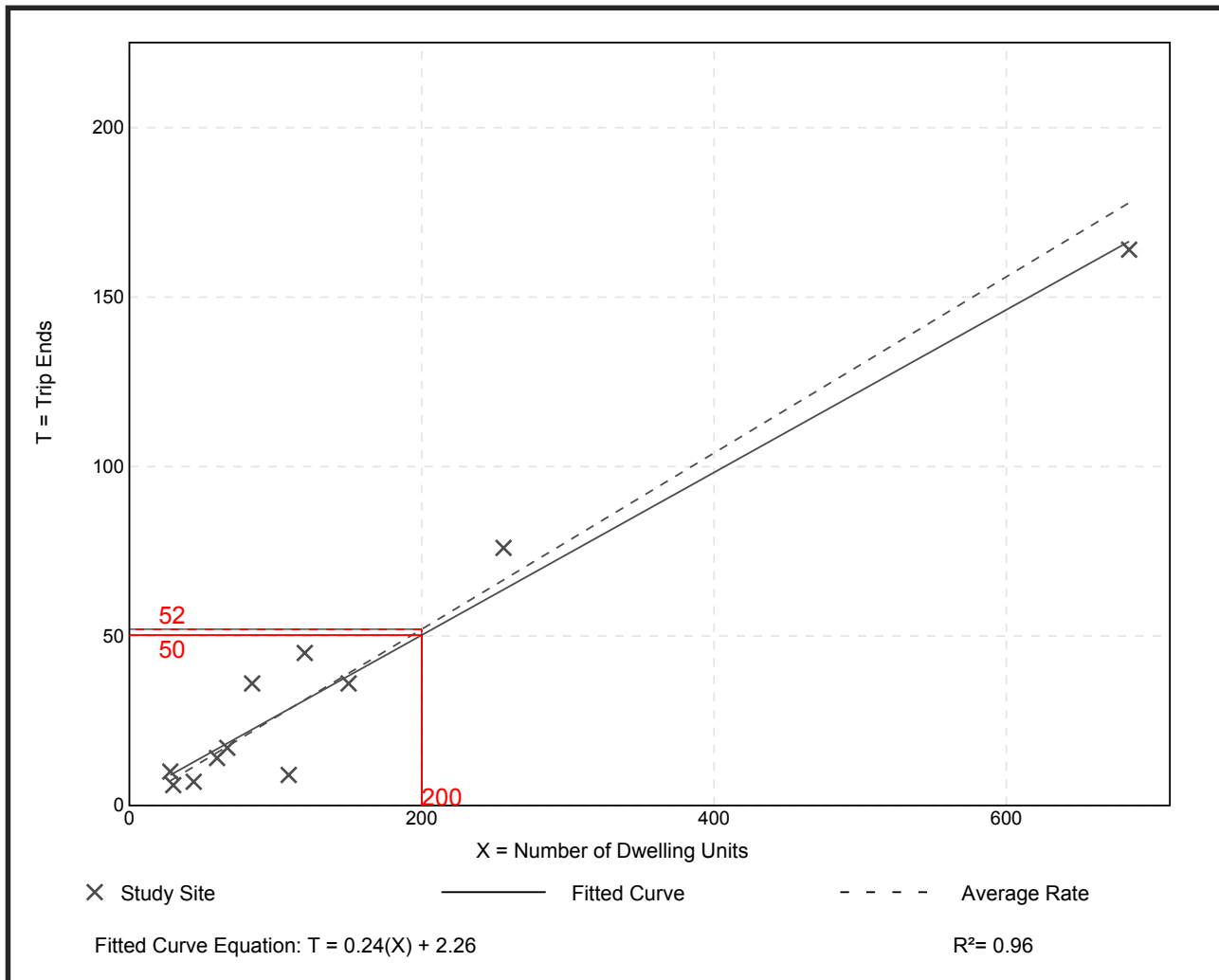
# Senior Adult Housing - Attached (252)

Vehicle Trip Ends vs: Dwelling Units  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 11  
 Avg. Num. of Dwelling Units: 148  
 Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.26	0.08 - 0.43	0.08

## Data Plot and Equation



# Senior Adult Housing - Attached (252)

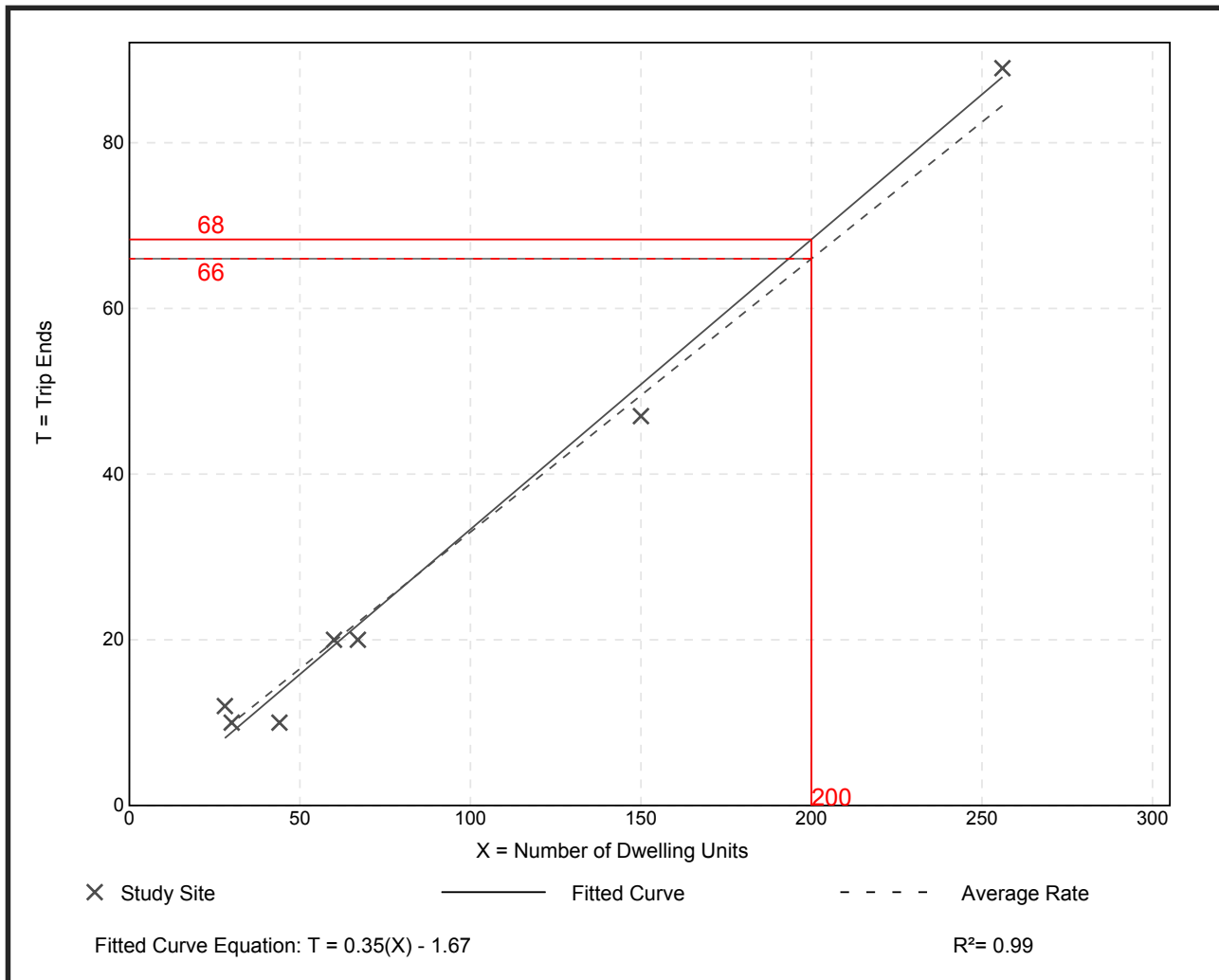
Vehicle Trip Ends vs: Dwelling Units  
On a: Saturday , Peak Hour of Generator

Setting/Location: General Urban/Suburban  
Number of Studies: 7  
Avg. Num. of Dwelling Units: 91  
Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.33	0.23 - 0.43	0.04

## Data Plot and Equation



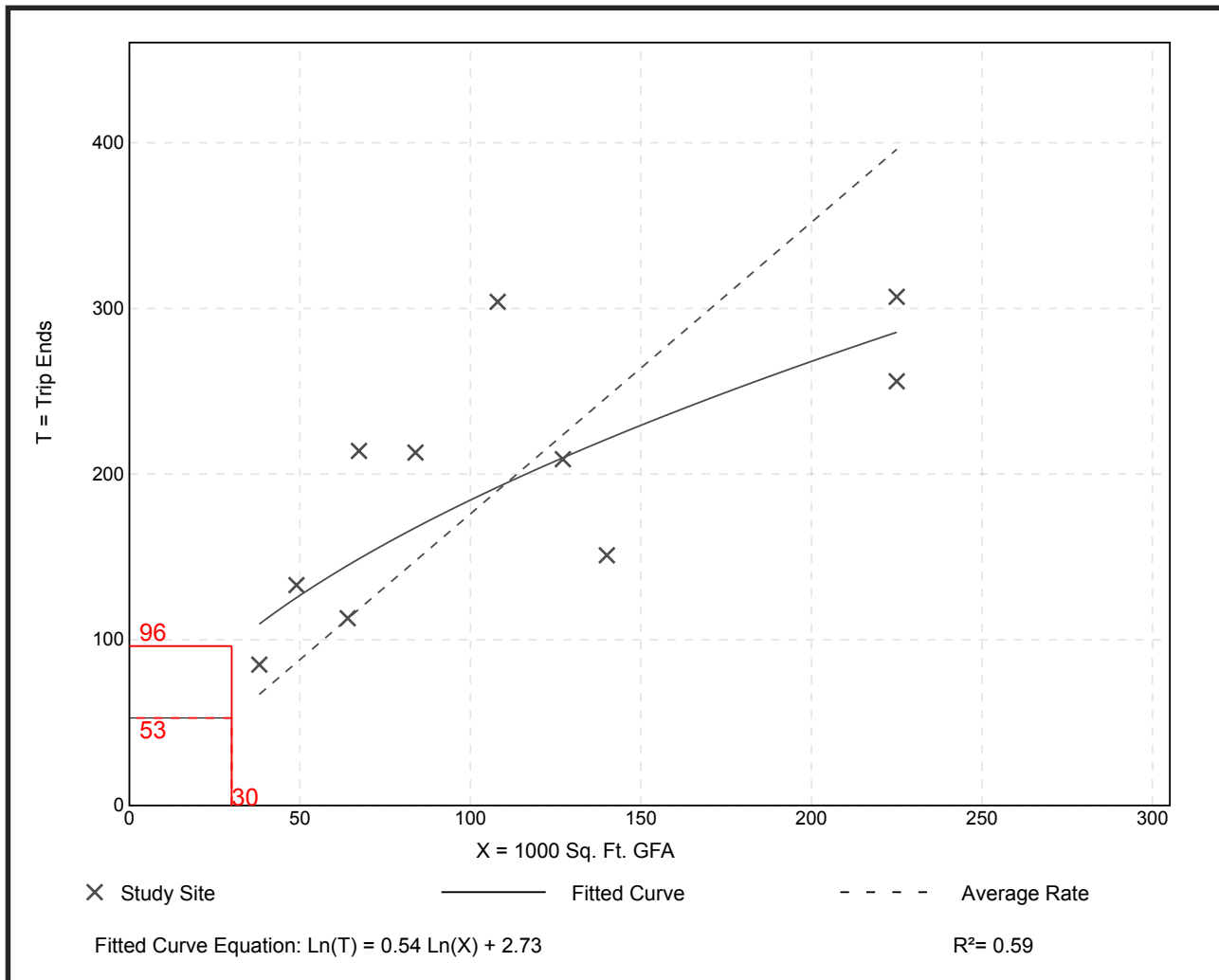
# Recreational Community Center (495)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 10  
 Avg. 1000 Sq. Ft. GFA: 113  
 Directional Distribution: 66% entering, 34% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.76	1.08 - 3.18	0.74

## Data Plot and Equation



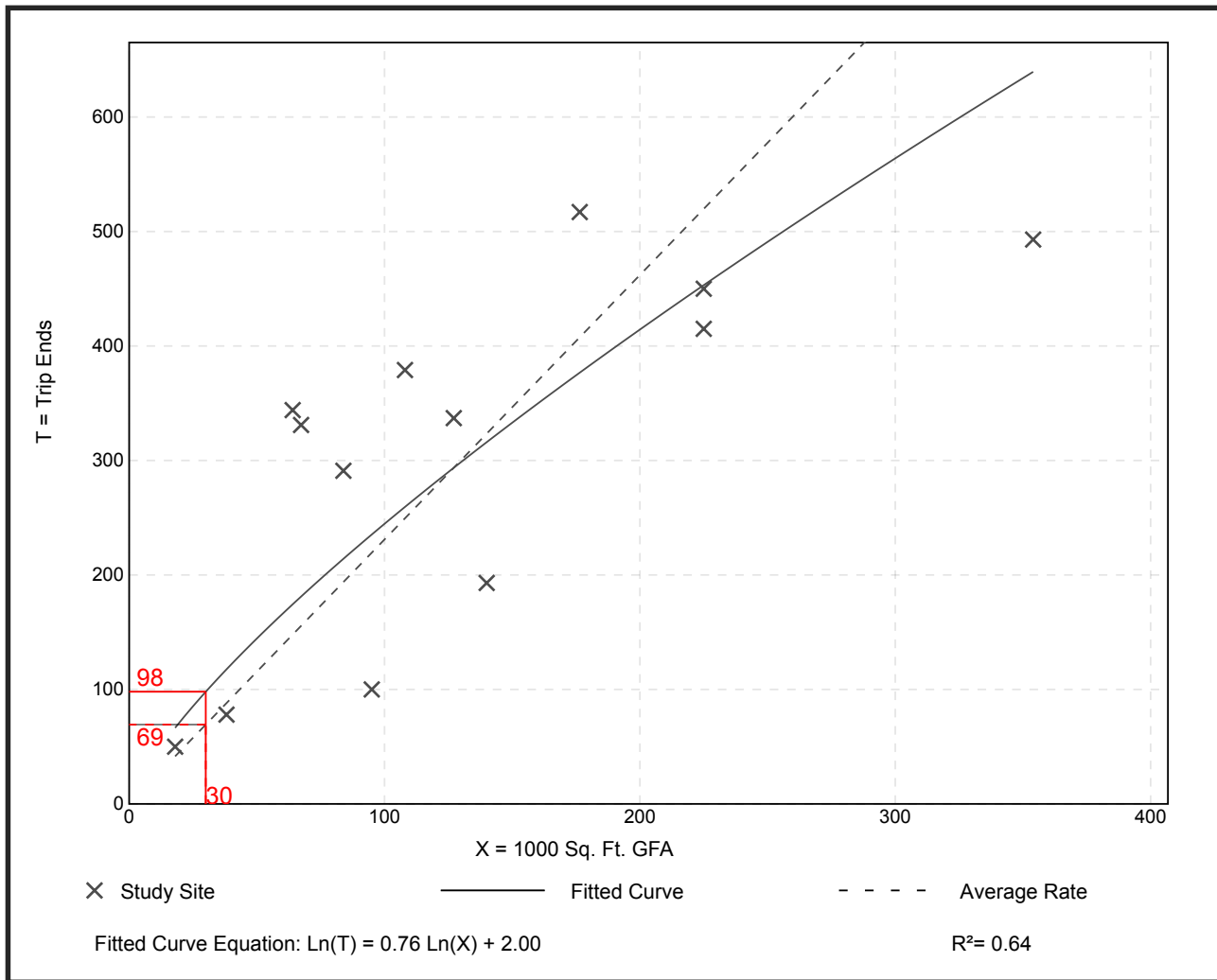
# Recreational Community Center (495)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 13  
 Avg. 1000 Sq. Ft. GFA: 132  
 Directional Distribution: 47% entering, 53% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.31	1.05 - 5.37	1.14

## Data Plot and Equation



# Recreational Community Center (495)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Saturday, Peak Hour of Generator

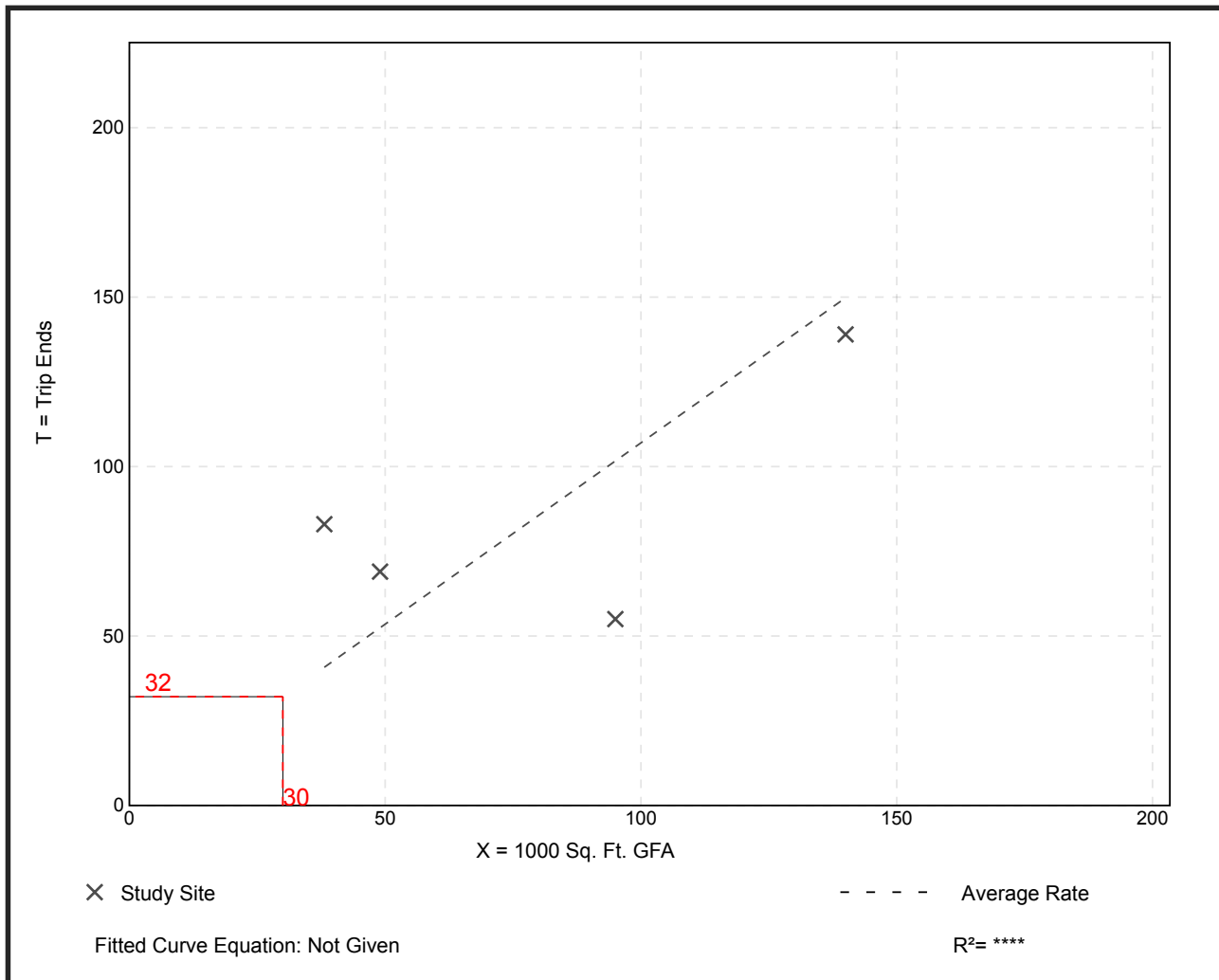
Setting/Location: General Urban/Suburban  
Number of Studies: 4  
Avg. 1000 Sq. Ft. GFA: 81  
Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.07	0.58 - 2.18	0.56

## Data Plot and Equation

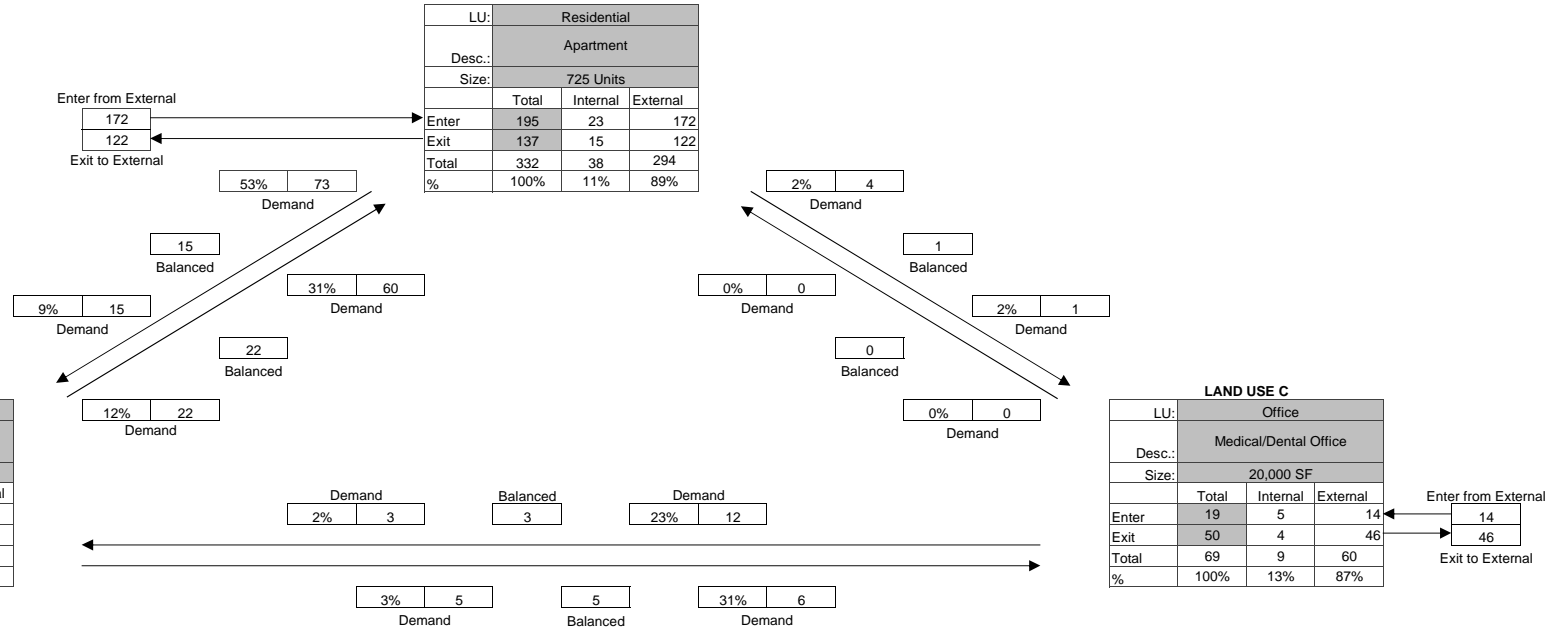
Caution – Small Sample Size





## Internal Trip Capture Worksheet - 2027 Build - PM Peak Hour

Project Number: 17004213G  
 Project Description: Town Center South  
 Analyst: KM  
 Date: 11/1/2017  
 Time Period: PM Peak Hour



LU:	Residential		
Desc.:	Apartment		
Size:	725 Units		
	Total	Internal	External
Enter	195	23	172
Exit	137	15	122
Total	332	38	294
%	100%	11%	89%

LAND USE B			
LU:	Retail		
Desc.:	Shopping Center		
Size:	70,000 SF		
	Total	Internal	External
Enter	164	18	146
Exit	181	27	154
Total	345	45	300
%	100%	13%	87%

LAND USE C			
LU:	Office		
Desc.:	Medical/Dental Office		
Size:	20,000 SF		
	Total	Internal	External
Enter	19	5	14
Exit	50	4	46
Total	69	9	60
%	100%	13%	87%

Land Use	Description	Size	PM Peak Hour							
			External Trips			Internally Captured Trips				
			IN	OUT	Total	IN	OUT	Total	%	
A	Residential	Apartment	725	172	122	294	23	15	38	11%
B	Retail	Shopping Center	70,000	146	154	300	18	27	45	13%
C	Office	Medical/Dental Office	20,000	14	46	60	5	4	9	13%
<b>Total:</b>			<b>332</b>	<b>322</b>	<b>654</b>	<b>46</b>	<b>46</b>	<b>92</b>	<b>12%</b>	

ITE Trip Generation Handbook (March 2001) Table 7.1					
From	To	MidDay	PM	DAILY	Utilized Rates PM Peak Hour
Office	Office	2%	1%	2%	1%
	Retail	20%	23%	22%	23%
	Residential	0%	2%	2%	2%
Retail	Office	3%	3%	3%	3%
	Retail	29%	20%	30%	20%
	Residential	7%	12%	11%	12%
Residential	Office	0%	0%	0%	0%
	Retail	34%	53%	38%	53%
	Residential	0%	0%	0%	0%

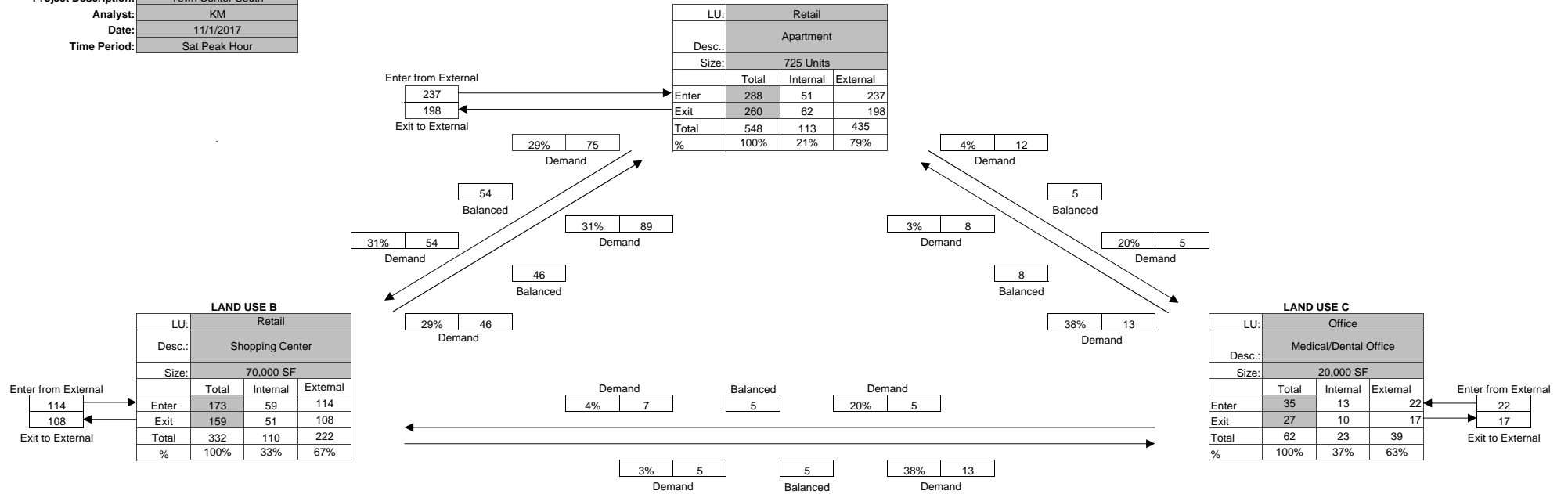
ITE Trip Generation Handbook (March 2001) Table 7.2					
To	From	MidDay	PM	DAILY	Utilized Rates PM Peak Hour
Office	Office	6%	6%	2%	6%
	Retail	38%	31%	15%	31%
	Residential	0%	0%	0%	0%
Retail	Office	4%	2%	4%	2%
	Retail	31%	20%	28%	20%
	Residential	5%	9%	9%	9%
Residential	Office	0%	2%	3%	2%
	Retail	37%	31%	33%	31%
	Residential	0%	0%	0%	0%





## Internal Trip Capture Worksheet - 2027 Build - SAT Peak Hour

**Project Number:** 17004213G  
**Project Description:** Town Center South  
**Analyst:** KM  
**Date:** 11/1/2017  
**Time Period:** Sat Peak Hour



Land Use	Description	Size	Sat Peak Hour							
			External Trips			Internally Captured Trips				
			IN	OUT	Total	IN	OUT	Total	%	
A	Retail	Apartment	725	237	198	435	51	62	113	21%
B	Retail	Shopping Center	70,000	114	108	222	59	51	110	33%
C	Office	Medical/Dental Office	20,000	22	17	39	13	10	23	37%
<b>Total:</b>			<b>373</b>	<b>323</b>	<b>696</b>	<b>123</b>	<b>123</b>	<b>246</b>	<b>26%</b>	

ITE Trip Generation Handbook (March 2001) Table 7.1						Utilized Rates	
From	To	MidDay	PM	DAILY	Sat Peak Hour		
Office	Office	2%	1%	2%	<b>2%</b>		
	Retail	20%	23%	22%	<b>20%</b>		
	Residential	0%	2%	2%	<b>0%</b>		
Retail	Office	3%	3%	3%	<b>3%</b>		
	Retail	29%	20%	30%	<b>29%</b>		
	Residential	7%	12%	11%	<b>7%</b>		
Residential	Office	0%	0%	0%	<b>0%</b>		
	Retail	34%	53%	38%	<b>34%</b>		
	Residential	0%	0%	0%	<b>0%</b>		

ITE Trip Generation Handbook (March 2001) Table 7.2						Utilized Rates	
To	From	MidDay	PM	DAILY	Sat Peak Hour		
Office	Office	6%	6%	2%	<b>6%</b>		
	Retail	38%	31%	15%	<b>38%</b>		
	Residential	0%	0%	0%	<b>0%</b>		
Retail	Office	4%	2%	4%	<b>4%</b>		
	Retail	31%	20%	28%	<b>31%</b>		
	Residential	5%	9%	9%	<b>5%</b>		
Residential	Office	0%	2%	3%	<b>0%</b>		
	Retail	37%	31%	33%	<b>37%</b>		
	Residential	0%	0%	0%	<b>0%</b>		



Town Center South  
Robbinsville Township, Mercer County, New Jersey  
MC Project No.: 17004213G  
Appendix

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***TOWN CENTER SOUTH***

***TRAFFIC FEASIBILITY STUDY***

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**APPENDIX D**

**CAPACITY ANALYSIS**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	516	11	48	750	66	10	8	111	16	190
Future Volume (vph)	141	516	11	48	750	66	10	8	111	16	190
Lane Group Flow (vph)	162	593	13	55	862	76	11	31	0	146	218
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.52	0.51	0.01	0.10	0.83	0.08	0.06	0.11		0.73	0.49
Control Delay	10.4	12.9	0.0	5.8	28.0	6.6	30.7	16.7		55.8	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	10.4	12.9	0.0	5.8	28.0	6.6	30.7	16.7		55.8	8.7
Queue Length 50th (ft)	22	182	0	7	349	0	5	4		79	0
Queue Length 95th (ft)	44	293	0	m24	#650	m36	19	26		133	52
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	344	1159	1041	628	1043	936	239	368		259	504
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	0.47	0.51	0.01	0.09	0.83	0.08	0.05	0.08		0.56	0.43

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 75

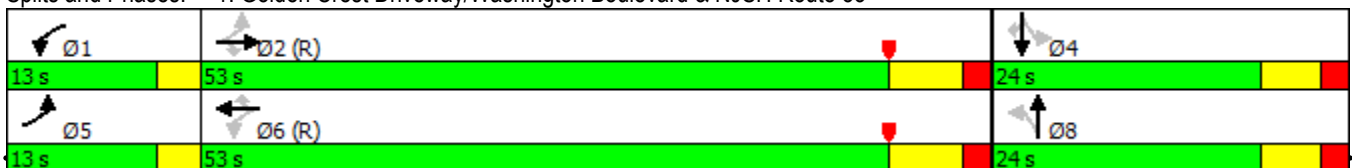
Control Type: Actuated-Coordinated























# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	516	11	48	750	66	10	8	19	111	16	190
Future Volume (veh/h)	141	516	11	48	750	66	10	8	19	111	16	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1863	1813	1900	1863	1900	1900	1976	1900	1900	1775	1956
Adj Flow Rate, veh/h	162	593	13	55	862	76	11	9	22	128	18	218
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	2	9	0	2	0	0	0	0	0	0	1
Cap, veh/h	337	1163	962	526	1135	984	124	80	195	243	24	260
Arrive On Green	0.06	0.62	0.62	0.04	0.61	0.61	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1740	1863	1541	1810	1863	1615	1162	510	1246	1071	151	1663
Grp Volume(v), veh/h	162	593	13	55	862	76	11	0	31	146	0	218
Grp Sat Flow(s),veh/h/ln	1740	1863	1541	1810	1863	1615	1162	0	1756	1221	0	1663
Q Serve(g_s), s	3.1	15.8	0.3	1.0	30.3	1.7	0.8	0.0	1.4	9.4	0.0	11.5
Cycle Q Clear(g_c), s	3.1	15.8	0.3	1.0	30.3	1.7	11.5	0.0	1.4	10.7	0.0	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	0.88		1.00
Lane Grp Cap(c), veh/h	337	1163	962	526	1135	984	124	0	275	266	0	260
V/C Ratio(X)	0.48	0.51	0.01	0.10	0.76	0.08	0.09	0.00	0.11	0.55	0.00	0.84
Avail Cap(c_a), veh/h	432	1163	962	652	1135	984	174	0	351	325	0	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	9.3	6.4	6.9	12.8	7.2	42.1	0.0	32.6	37.2	0.0	36.8
Incr Delay (d2), s/veh	0.4	1.6	0.0	0.0	3.9	0.1	0.1	0.0	0.1	0.7	0.0	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	13.4	0.2	0.9	22.5	1.4	0.5	0.0	1.2	6.4	0.0	10.1
LnGrp Delay(d),s/veh	13.0	10.9	6.4	6.9	16.7	7.3	42.2	0.0	32.7	37.8	0.0	48.1
LnGrp LOS	B	B	A	A	B	A	D		C	D		D
Approach Vol, veh/h		768			993			42			364	
Approach Delay, s/veh		11.3			15.4			35.2			44.0	
Approach LOS		B			B			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	63.2		20.1	8.1	61.8		20.1				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	3.0	17.8		13.5	5.1	32.3		13.5				
Green Ext Time (p_c), s	0.0	7.1		0.6	0.1	5.6		0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			19.1									
HCM 2010 LOS			B									

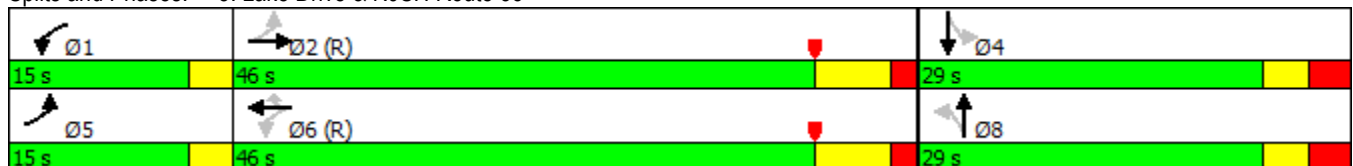























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗
Traffic Volume (vph)	8	635	22	837	31	11	1	14	2
Future Volume (vph)	8	635	22	837	31	11	1	14	2
Lane Group Flow (vph)	9	685	24	900	33	12	11	15	19
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.02	0.45	0.04	0.57	0.03	0.09	0.08	0.10	0.13
Control Delay	0.4	5.0	1.5	6.4	0.2	40.0	23.6	40.2	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.4	5.0	1.5	6.4	0.2	40.0	23.6	40.2	20.9
Queue Length 50th (ft)	1	2	2	170	0	6	1	8	1
Queue Length 95th (ft)	m1	373	5	410	2	23	17	27	22
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	599	1507	717	1580	1290	451	401	466	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.45	0.03	0.57	0.03	0.03	0.03	0.03	0.04

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lake Drive & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	635	2	22	837	31	11	1	9	14	2	16
Future Volume (veh/h)	8	635	2	22	837	31	11	1	9	14	2	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1863	1776	1900	1796	1900	1976	1976	1900
Adj Flow Rate, veh/h	9	683	2	24	900	33	12	1	10	15	2	17
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	4	4	0	2	7	0	0	0	0	0	0
Cap, veh/h	417	1344	4	682	1401	1135	149	8	83	158	11	90
Arrive On Green	0.01	0.98	0.98	0.03	0.75	0.75	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1810	1821	5	1810	1863	1509	1416	141	1407	1483	180	1527
Grp Volume(v), veh/h	9	0	685	24	900	33	12	0	11	15	0	19
Grp Sat Flow(s),veh/h/ln	1810	0	1826	1810	1863	1509	1416	0	1548	1483	0	1707
Q Serve(g_s), s	0.1	0.0	1.2	0.3	20.9	0.5	0.7	0.0	0.6	0.9	0.0	1.0
Cycle Q Clear(g_c), s	0.1	0.0	1.2	0.3	20.9	0.5	1.7	0.0	0.6	1.5	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.91	1.00		0.89
Lane Grp Cap(c), veh/h	417	0	1348	682	1401	1135	149	0	91	158	0	101
V/C Ratio(X)	0.02	0.00	0.51	0.04	0.64	0.03	0.08	0.00	0.12	0.10	0.00	0.19
Avail Cap(c_a), veh/h	638	0	1348	878	1401	1135	427	0	396	449	0	436
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.00	0.85	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	0.0	0.2	2.5	5.4	2.8	41.1	0.0	40.1	40.8	0.0	40.3
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.0	2.3	0.0	0.1	0.0	0.2	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	1.5	0.3	16.9	0.4	0.5	0.0	0.5	0.7	0.0	0.8
LnGrp Delay(d),s/veh	5.0	0.0	1.4	2.5	7.6	2.9	41.2	0.0	40.3	40.9	0.0	40.6
LnGrp LOS	A		A	A	A	A	D		D	D		D
Approach Vol, veh/h		694			957			23				34
Approach Delay, s/veh		1.4			7.3			40.8				40.8
Approach LOS		A			A			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	73.4		11.3	4.0	74.7		11.3				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.3	3.2		3.5	2.1	22.9		3.7				
Green Ext Time (p_c), s	0.0	8.7		0.1	0.0	6.7		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			6.1									
HCM 2010 LOS			A									

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗			↗
Traffic Vol, veh/h	18	641	872	14	0	18
Future Vol, veh/h	18	641	872	14	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	2	0	0	0
Mvmt Flow	20	728	991	16	0	20

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1007	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	696	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	696	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	18
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	696	-	-	-	298
HCM Lane V/C Ratio	0.029	-	-	-	0.069
HCM Control Delay (s)	10.3	-	-	-	18
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	54	328	258	532	306	150	141	231	71
Future Volume (vph)	54	328	258	532	306	150	141	231	71
Lane Group Flow (vph)	57	345	272	560	322	458	148	243	75
Turn Type	Prot	NA	pm+ov	NA	Perm	NA	Split	NA	Prot
Protected Phases	5	2	8	6		8	4	4	4
Permitted Phases			2		6				
Detector Phase	5	2	8	6	6	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	20.0	7.0	10.0	10.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	34.0	19.0	22.0	22.0	19.0	17.0	17.0	17.0
Total Split (s)	13.0	54.0	36.0	41.0	41.0	36.0	34.0	34.0	34.0
Total Split (%)	10.5%	43.5%	29.0%	33.1%	33.1%	29.0%	27.4%	27.4%	27.4%
Yellow Time (s)	3.0	5.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
All-Red Time (s)	2.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	11.0	12.0	11.0	11.0	12.0	10.0	10.0	10.0
Lead/Lag	Lead			Lag	Lag				
Lead-Lag Optimize?	Yes			Yes	Yes				
Recall Mode	None	Min	None	Min	Min	None	None	None	None
v/c Ratio	0.58	0.55	0.24	1.16	0.53	1.15	0.55	0.80	0.17
Control Delay	78.0	35.0	2.9	131.7	14.2	132.8	53.3	66.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	35.0	2.9	131.7	14.2	132.8	53.3	66.6	0.9
Queue Length 50th (ft)	43	209	16	~525	49	~426	106	182	0
Queue Length 95th (ft)	#100	319	51	#780	145	#661	174	273	0
Internal Link Dist (ft)		523		1238		1506		456	
Turn Bay Length (ft)	305						200		
Base Capacity (vph)	111	681	1114	484	606	400	351	395	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.51	0.24	1.16	0.53	1.15	0.42	0.62	0.15

Intersection Summary

Cycle Length: 124

Actuated Cycle Length: 116.2

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

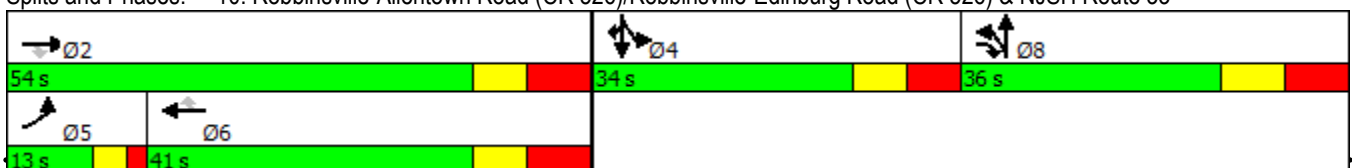
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.






















# 95th percentile volume exceeds capacity, queue may be longer.

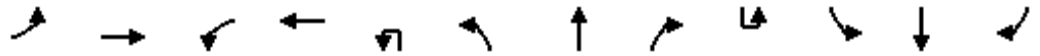
Queue shown is maximum after two cycles.

Splits and Phases: 10: Robbinsville-Allentown Road (CR 526)/Robbinsville-Edinburg Road (CR 526) & NJSH Route 33





												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	328	258	0	532	306	283	150	2	141	231	71
Future Volume (veh/h)	54	328	258	0	532	306	283	150	2	141	231	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1827	1900	0	1863	1830	1900	1943	1900	1776	1900	1827
Adj Flow Rate, veh/h	57	345	272	0	560	322	298	158	2	148	243	75
Adj No. of Lanes	1	1	1	0	1	1	0	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	12	4	4	0	2	8	3	3	3	7	0	4
Cap, veh/h	71	642	908	0	491	410	258	137	2	250	281	230
Arrive On Green	0.04	0.35	0.35	0.00	0.26	0.26	0.21	0.21	0.21	0.15	0.15	0.15
Sat Flow, veh/h	1616	1827	1615	0	1863	1555	1224	649	8	1691	1900	1553
Grp Volume(v), veh/h	57	345	272	0	560	322	458	0	0	148	243	75
Grp Sat Flow(s),veh/h/ln	1616	1827	1615	0	1863	1555	1881	0	0	1691	1900	1553
Q Serve(g_s), s	4.0	17.2	10.1	0.0	30.0	21.9	24.0	0.0	0.0	9.3	14.2	4.9
Cycle Q Clear(g_c), s	4.0	17.2	10.1	0.0	30.0	21.9	24.0	0.0	0.0	9.3	14.2	4.9
Prop In Lane	1.00		1.00	0.00		1.00	0.65		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	642	908	0	491	410	396	0	0	250	281	230
V/C Ratio(X)	0.80	0.54	0.30	0.00	1.14	0.79	1.16	0.00	0.00	0.59	0.86	0.33
Avail Cap(c_a), veh/h	114	690	950	0	491	410	396	0	0	357	401	327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	29.5	13.1	0.0	41.9	38.9	44.9	0.0	0.0	45.3	47.4	43.4
Incr Delay (d2), s/veh	8.0	1.0	0.3	0.0	85.4	10.2	94.8	0.0	0.0	0.8	9.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	13.7	11.0	0.0	48.5	15.9	41.0	0.0	0.0	7.9	13.0	3.8
LnGrp Delay(d),s/veh	61.9	30.5	13.4	0.0	127.3	49.2	139.7	0.0	0.0	46.1	57.1	43.7
LnGrp LOS	E	C	B		F	D	F			D	E	D
Approach Vol, veh/h		674			882			458			466	
Approach Delay, s/veh		26.3			98.8			139.7			51.5	
Approach LOS		C			F			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		51.0		26.8	10.0	41.0		36.0				
Change Period (Y+Rc), s		11.0		10.0	5.0	11.0		12.0				
Max Green Setting (Gmax), s		43.0		24.0	8.0	30.0		24.0				
Max Q Clear Time (g_c+I1), s		19.2		16.2	6.0	32.0		26.0				
Green Ext Time (p_c), s		10.4		0.6	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			77.7									
HCM 2010 LOS			E									






















Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↘		↗	↕↕	↗		↗	↕↕	↗
Traffic Volume (vph)	6	137	185	170	3	264	1123	66	3	31	1032	1
Future Volume (vph)	6	137	185	170	3	264	1123	66	3	31	1032	1
Lane Group Flow (vph)	0	543	206	203	0	296	1248	73	0	37	1147	1
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm
Protected Phases		4		8		5	2			1	6	
Permitted Phases	4		8		5			2	1			6
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	41.0	41.0	5.0	5.0	41.0	41.0
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	49.0	49.0	11.0	11.0	49.0	49.0
Total Split (s)	45.0	45.0	45.0	45.0	26.0	26.0	49.0	49.0	26.0	26.0	49.0	49.0
Total Split (%)	37.5%	37.5%	37.5%	37.5%	21.7%	21.7%	40.8%	40.8%	21.7%	21.7%	40.8%	40.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)		7.0	7.0	7.0			6.0	8.0			6.0	8.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max
v/c Ratio		0.82	1.47	0.34			5.02	0.97	0.12		0.58	1.03
Control Delay		42.1	278.7	33.0			1856.5	55.5	4.0		92.2	53.7
Queue Delay		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0
Total Delay		42.1	278.7	33.0			1856.5	55.5	4.0		92.2	53.7
Queue Length 50th (ft)		320	~218	118			~429	~573	0		30	~501
Queue Length 95th (ft)		#502	#373	185			#576	#726	23		m50	#607
Internal Link Dist (ft)		1506		507				493				460
Turn Bay Length (ft)			105				275		275		300	120
Base Capacity (vph)		659	140	592			59	1290	609		83	1114
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		0.82	1.47	0.34			5.02	0.97	0.12		0.45	1.03

**Intersection Summary**

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 ~ 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.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)**



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	6	137	346	185	170	13	3	264	1123	66	3	31
Future Volume (veh/h)	6	137	346	185	170	13	3	264	1123	66	3	31
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1943	1900	1863	1882	1900		1845	1759	1727		1849
Adj Flow Rate, veh/h	7	152	0	206	189	14		293	1248	73		34
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90
Percent Heavy Veh, %	2	2	2	2	1	1		3	8	10		3
Cap, veh/h	38	406	0	295	371	27		293	1948	855		50
Arrive On Green	0.21	0.21	0.00	0.21	0.21	0.21		0.17	0.58	0.58		0.03
Sat Flow, veh/h	31	1894	0	1230	1732	128		1757	3343	1467		1761
Grp Volume(v), veh/h	159	0	0	206	0	203		293	1248	73		34
Grp Sat Flow(s),veh/h/ln	1925	0	0	1230	0	1860		1757	1671	1467		1761
Q Serve(g_s), s	0.0	0.0	0.0	13.9	0.0	11.6		20.0	29.8	2.6		2.3
Cycle Q Clear(g_c), s	8.4	0.0	0.0	22.3	0.0	11.6		20.0	29.8	2.6		2.3
Prop In Lane	0.04		0.00	1.00		0.07		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	443	0	0	295	0	398		293	1948	855		50
V/C Ratio(X)	0.36	0.00	0.00	0.70	0.00	0.51		1.00	0.64	0.09		0.68
Avail Cap(c_a), veh/h	638	0	0	421	0	589		293	1948	855		293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	0.85	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	40.4	0.0	0.0	46.8	0.0	41.6		50.0	16.7	11.0		57.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.0	0.4		52.7	1.6	0.2		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	7.7	0.0	0.0	11.0	0.0	10.0		25.1	20.3	2.0		2.2
LnGrp Delay(d),s/veh	40.5	0.0	0.0	47.9	0.0	42.0		102.7	18.3	11.2		63.8
LnGrp LOS	D			D		D		F	B	B		E
Approach Vol, veh/h		159			409				1614			
Approach Delay, s/veh		40.5			45.0				33.3			
Approach LOS		D			D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	77.9		32.7	26.0	61.3		32.7				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	20.0	41.0		38.0	20.0	41.0		38.0				
Max Q Clear Time (g_c+I1), s	4.3	31.8		10.4	22.0	36.4		24.3				
Green Ext Time (p_c), s	0.0	6.5		1.6	0.0	3.7		1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				34.9								
HCM 2010 LOS				C								
<b>Notes</b>												

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1032	1
Future Volume (veh/h)	1032	1
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1976
Adj Flow Rate, veh/h	1147	1
Adj No. of Lanes	2	1
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	7	0
Cap, veh/h	1499	745
Arrive On Green	0.44	0.44
Sat Flow, veh/h	3374	1678
Grp Volume(v), veh/h	1147	1
Grp Sat Flow(s),veh/h/ln	1687	1678
Q Serve(g_s), s	34.4	0.0
Cycle Q Clear(g_c), s	34.4	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1499	745
V/C Ratio(X)	0.77	0.00
Avail Cap(c_a), veh/h	1499	745
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	28.1	18.5
Incr Delay (d2), s/veh	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.4	0.0
LnGrp Delay(d),s/veh	31.9	18.5
LnGrp LOS	C	B
Approach Vol, veh/h	1182	
Approach Delay, s/veh	32.8	
Approach LOS	C	
Timer		

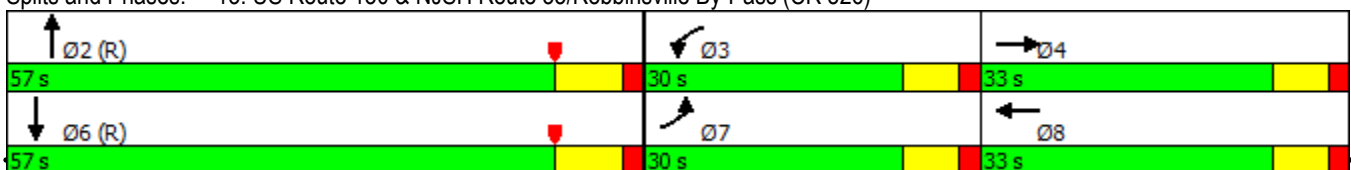


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↖	↑↗	↖	↑↗	↑↑↗	↑↑↗
Traffic Volume (vph)	337	135	94	619	1139	975
Future Volume (vph)	337	135	94	619	1139	975
Lane Group Flow (vph)	366	168	102	770	1245	1298
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	49.0	49.0
Minimum Split (s)	14.0	14.0	14.0	14.0	57.0	57.0
Total Split (s)	30.0	33.0	30.0	33.0	57.0	57.0
Total Split (%)	25.0%	27.5%	25.0%	27.5%	47.5%	47.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.74	0.17	0.61	0.86	0.63	0.65
Control Delay	57.4	32.0	66.6	52.9	2.7	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	32.0	66.6	52.9	2.7	29.1
Queue Length 50th (ft)	141	50	77	294	8	282
Queue Length 95th (ft)	186	84	131	#445	m8	335
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	657	967	326	896	1976	1987
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	0.56	0.17	0.31	0.86	0.63	0.65

**Intersection Summary**

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 10 (8%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)



17004213G - Washington Town Center  
 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)

2019 No Build Conditions  
 AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	337	135	19	94	619	89	0	1139	6	0	975	219
Future Volume (veh/h)	337	135	19	94	619	89	0	1139	6	0	975	219
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1698	1900	1792	1834	1900	0	1755	1900	0	1788	1900
Adj Flow Rate, veh/h	366	147	21	102	673	0	0	1238	7	0	1060	238
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	8	6	4	4	0	8	8	0	7	7
Cap, veh/h	433	740	104	126	727	0	0	2372	13	0	1924	432
Arrive On Green	0.13	0.26	0.26	0.07	0.21	0.00	0.00	0.48	0.48	0.00	0.48	0.48
Sat Flow, veh/h	3442	2842	399	1707	3575	0	0	5076	28	0	4150	895
Grp Volume(v), veh/h	366	82	86	102	673	0	0	804	441	0	864	434
Grp Sat Flow(s),veh/h/ln	1721	1613	1628	1707	1742	0	0	1597	1751	0	1627	1630
Q Serve(g_s), s	12.5	4.8	4.9	7.1	22.7	0.0	0.0	20.9	20.9	0.0	22.5	22.5
Cycle Q Clear(g_c), s	12.5	4.8	4.9	7.1	22.7	0.0	0.0	20.9	20.9	0.0	22.5	22.5
Prop In Lane	1.00		0.25	1.00		0.00	0.00		0.02	0.00		0.55
Lane Grp Cap(c), veh/h	433	420	424	126	727	0	0	1541	844	0	1570	786
V/C Ratio(X)	0.85	0.20	0.20	0.81	0.93	0.00	0.00	0.52	0.52	0.00	0.55	0.55
Avail Cap(c_a), veh/h	660	420	424	327	755	0	0	1541	844	0	1570	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	34.6	34.6	54.7	46.6	0.0	0.0	21.5	21.5	0.0	21.9	21.9
Incr Delay (d2), s/veh	3.9	0.1	0.1	4.6	16.6	0.0	0.0	1.3	2.3	0.0	1.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.3	3.8	4.0	6.3	18.4	0.0	0.0	14.5	15.9	0.0	15.7	16.1
LnGrp Delay(d),s/veh	55.3	34.7	34.7	59.3	63.1	0.0	0.0	22.8	23.8	0.0	23.3	24.7
LnGrp LOS	E	C	C	E	E			C	C		C	C
Approach Vol, veh/h		534			775			1245			1298	
Approach Delay, s/veh		48.8			62.6			23.1			23.8	
Approach LOS		D			E			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		65.9	15.9	38.2		65.9	22.1	32.0				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		49.0	23.0	26.0		49.0	23.0	26.0				
Max Q Clear Time (g_c+I1), s		22.9	9.1	6.9		24.5	14.5	24.7				
Green Ext Time (p_c), s		12.1	0.1	1.8		11.7	0.6	0.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			34.8									
HCM 2010 LOS			C									

17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 Build Conditions  
 AM Peak

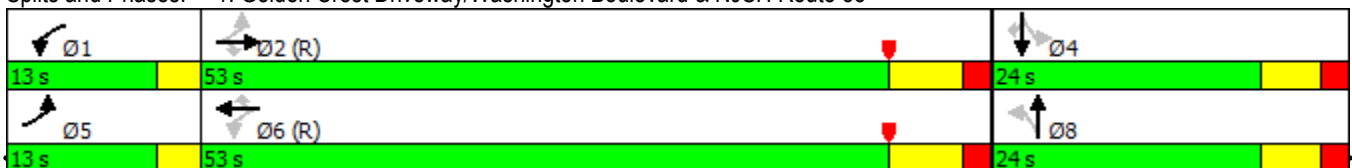
























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	141	585	11	48	819	80	10	8	125	16	190
Future Volume (vph)	141	585	11	48	819	80	10	8	125	16	190
Lane Group Flow (vph)	162	672	13	55	941	92	11	31	0	162	218
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.66	0.59	0.01	0.12	0.92	0.10	0.06	0.10		0.77	0.48
Control Delay	24.5	14.7	0.0	6.4	36.9	6.7	30.4	16.4		58.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	24.5	14.7	0.0	6.4	36.9	6.7	30.4	16.4		58.6	8.4
Queue Length 50th (ft)	26	229	0	9	433	2	5	4		88	0
Queue Length 95th (ft)	88	352	0	m21	#787	m35	19	26		146	52
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	278	1143	1028	556	1025	928	224	368		258	504
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	0.58	0.59	0.01	0.10	0.92	0.10	0.05	0.08		0.63	0.43

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	585	11	48	819	80	10	8	19	125	16	190
Future Volume (veh/h)	141	585	11	48	819	80	10	8	19	125	16	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1863	1813	1900	1863	1900	1900	1976	1900	1900	1774	1956
Adj Flow Rate, veh/h	162	672	13	55	941	92	11	9	22	144	18	218
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	2	9	0	2	0	0	0	0	0	0	1
Cap, veh/h	279	1142	945	459	1113	965	123	85	209	258	23	278
Arrive On Green	0.06	0.61	0.61	0.04	0.60	0.60	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1740	1863	1541	1810	1863	1615	1162	510	1246	1090	136	1663
Grp Volume(v), veh/h	162	672	13	55	941	92	11	0	31	162	0	218
Grp Sat Flow(s),veh/h/ln	1740	1863	1541	1810	1863	1615	1162	0	1756	1227	0	1663
Q Serve(g_s), s	3.1	19.6	0.3	1.0	37.0	2.2	0.8	0.0	1.3	10.4	0.0	11.3
Cycle Q Clear(g_c), s	3.1	19.6	0.3	1.0	37.0	2.2	12.6	0.0	1.3	11.8	0.0	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	0.89		1.00
Lane Grp Cap(c), veh/h	279	1142	945	459	1113	965	123	0	294	281	0	278
V/C Ratio(X)	0.58	0.59	0.01	0.12	0.85	0.10	0.09	0.00	0.11	0.58	0.00	0.78
Avail Cap(c_a), veh/h	373	1142	945	585	1113	965	160	0	351	325	0	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	10.5	6.8	8.0	14.7	7.7	42.2	0.0	31.8	36.7	0.0	35.9
Incr Delay (d2), s/veh	0.7	2.2	0.0	0.0	6.0	0.1	0.1	0.0	0.1	0.7	0.0	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	15.9	0.2	0.9	27.1	1.8	0.5	0.0	1.2	7.1	0.0	9.8
LnGrp Delay(d),s/veh	17.6	12.7	6.8	8.1	20.7	7.9	42.3	0.0	31.8	37.4	0.0	43.8
LnGrp LOS	B	B	A	A	C	A	D		C	D		D
Approach Vol, veh/h		847			1088			42			380	
Approach Delay, s/veh		13.6			19.0			34.6			41.1	
Approach LOS		B			B			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	62.2		21.1	8.2	60.8		21.1				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	3.0	21.6		13.8	5.1	39.0		14.6				
Green Ext Time (p_c), s	0.0	8.2		0.6	0.1	4.1		0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			20.9									
HCM 2010 LOS			C									



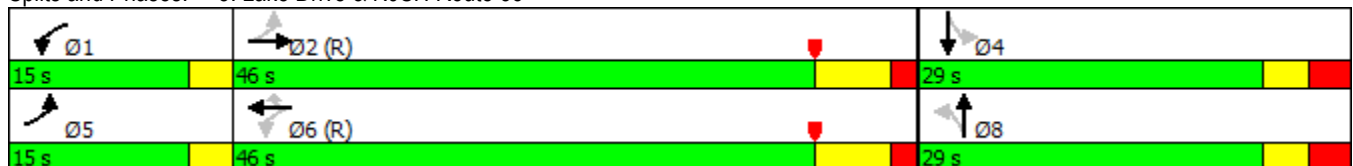


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗
Traffic Volume (vph)	8	676	35	865	31	66	1	14	2
Future Volume (vph)	8	676	35	865	31	66	1	14	2
Lane Group Flow (vph)	9	774	38	930	33	71	26	15	19
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.02	0.58	0.08	0.64	0.03	0.47	0.14	0.10	0.10
Control Delay	0.8	10.1	2.7	10.2	0.3	47.7	16.0	36.1	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.8	10.1	2.7	10.2	0.3	47.7	16.0	36.1	17.8
Queue Length 50th (ft)	1	313	3	208	0	39	1	8	1
Queue Length 95th (ft)	m1	505	11	559	2	78	23	25	21
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	527	1328	582	1445	1187	361	407	371	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.58	0.07	0.64	0.03	0.20	0.06	0.04	0.04

**Intersection Summary**






















Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 5: Lake Drive & NJSH Route 33**



17004213G - Washington Town Center  
5: Lake Drive & NJSH Route 33

2019 Build Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	676	44	35	865	31	66	1	23	14	2	16
Future Volume (veh/h)	8	676	44	35	865	31	66	1	23	14	2	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1831	1900	1900	1863	1776	1900	1787	1900	1976	1976	1900
Adj Flow Rate, veh/h	9	727	47	38	930	33	71	1	25	15	2	17
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	4	4	0	2	7	0	0	0	0	0	0
Cap, veh/h	374	1204	78	488	1361	1102	179	5	118	175	14	123
Arrive On Green	0.01	0.71	0.71	0.03	0.73	0.73	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1810	1702	110	1810	1863	1509	1416	59	1469	1463	180	1527
Grp Volume(v), veh/h	9	0	774	38	930	33	71	0	26	15	0	19
Grp Sat Flow(s),veh/h/ln	1810	0	1812	1810	1863	1509	1416	0	1528	1463	0	1707
Q Serve(g_s), s	0.1	0.0	19.6	0.5	24.2	0.5	4.4	0.0	1.4	0.9	0.0	0.9
Cycle Q Clear(g_c), s	0.1	0.0	19.6	0.5	24.2	0.5	5.4	0.0	1.4	2.3	0.0	0.9
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.96	1.00		0.89
Lane Grp Cap(c), veh/h	374	0	1282	488	1361	1102	179	0	123	175	0	138
V/C Ratio(X)	0.02	0.00	0.60	0.08	0.68	0.03	0.40	0.00	0.21	0.09	0.00	0.14
Avail Cap(c_a), veh/h	595	0	1282	668	1361	1102	427	0	390	431	0	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.78	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	6.7	5.3	6.5	3.3	41.0	0.0	38.7	39.8	0.0	38.5
Incr Delay (d2), s/veh	0.0	0.0	1.7	0.1	2.8	0.1	0.5	0.0	0.3	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	14.9	0.4	19.2	0.4	3.2	0.0	1.1	0.6	0.0	0.8
LnGrp Delay(d),s/veh	6.3	0.0	8.4	5.4	9.3	3.4	41.5	0.0	39.0	39.9	0.0	38.6
LnGrp LOS	A		A	A	A	A	D		D	D		D
Approach Vol, veh/h		783			1001			97				34
Approach Delay, s/veh		8.4			9.0			40.8				39.2
Approach LOS		A			A			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	70.7		13.3	4.0	72.7		13.3				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.5	21.6		4.3	2.1	26.2		7.4				
Green Ext Time (p_c), s	0.0	7.7		0.2	0.0	6.6		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			10.9									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	668	28	42	913	14	0	0	42	0	0	18
Future Vol, veh/h	18	668	28	42	913	14	0	0	42	0	0	18
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	125	-	-	75	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	2	2	0	0	0	2	0	0	0
Mvmt Flow	20	726	30	46	992	15	0	0	46	0	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	992	0	0	757	0	0	-	-	741	-	-	992
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.12	-	-	-	-	6.22	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	-	-	3.318	-	-	3.3
Pot Cap-1 Maneuver	705	-	-	854	-	-	0	0	416	0	0	301
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	705	-	-	854	-	-	-	-	416	-	-	301
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.4			14.7			17.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	705	-	-	854	-	-	301
HCM Lane V/C Ratio	0.11	0.028	-	-	0.053	-	-	0.065
HCM Control Delay (s)	14.7	10.3	-	-	9.5	-	-	17.8
HCM Lane LOS	B	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.2	-	-	0.2

17004213G - Washington Town Center  
 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)

2019 Build Conditions  
 AM Peak

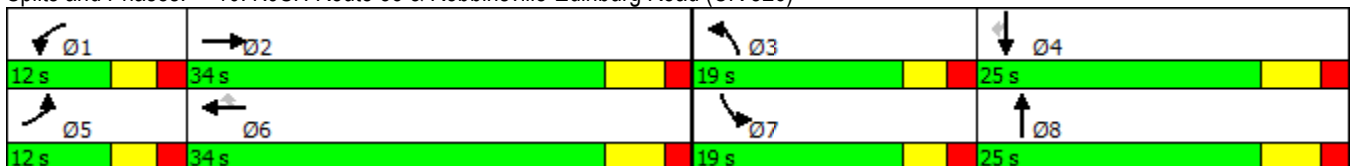


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	54	642	69	587	306	311	178	372	28	71
Future Volume (vph)	54	642	69	587	306	311	178	372	28	71
Lane Group Flow (vph)	57	690	75	618	322	338	270	392	30	75
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8	7	4	
Permitted Phases					6					4
Detector Phase	5	2	1	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	13.0	10.0	13.0	13.0	12.0	13.0	12.0	13.0	13.0
Total Split (s)	12.0	34.0	12.0	34.0	34.0	19.0	25.0	19.0	25.0	25.0
Total Split (%)	13.3%	37.8%	13.3%	37.8%	37.8%	21.1%	27.8%	21.1%	27.8%	27.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.46	0.58	0.52	0.51	0.42	0.50	0.76	0.78	0.09	0.18
Control Delay	51.9	26.7	53.6	25.4	4.7	36.6	45.4	47.3	29.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	26.7	53.6	25.4	4.7	36.6	45.4	47.3	29.2	0.9
Queue Length 50th (ft)	31	172	41	150	0	93	132	109	14	0
Queue Length 95th (ft)	71	236	#96	207	58	138	#222	#174	37	0
Internal Link Dist (ft)		523		57			351		456	
Turn Bay Length (ft)	305					100		200		
Base Capacity (vph)	137	1182	150	1214	775	703	428	558	431	480
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	0.42	0.58	0.50	0.51	0.42	0.48	0.63	0.70	0.07	0.16

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 83.5  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

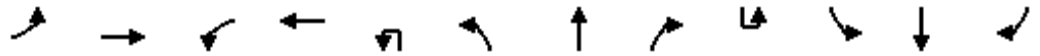
Splits and Phases: 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	642	13	69	587	306	311	178	71	372	28	71
Future Volume (veh/h)	54	642	13	69	587	306	311	178	71	372	28	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1696	1828	1900	1863	1863	1830	1863	1863	1900	1776	1863	1827
Adj Flow Rate, veh/h	57	676	14	75	618	322	338	193	77	392	30	75
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
Peak Hour Factor	0.95	0.95	0.92	0.92	0.95	0.95	0.92	0.92	0.92	0.95	0.92	0.95
Percent Heavy Veh, %	12	4	4	2	2	8	2	2	2	7	2	4
Cap, veh/h	72	1207	25	96	1262	554	427	231	92	472	377	314
Arrive On Green	0.04	0.35	0.35	0.05	0.36	0.36	0.12	0.18	0.18	0.14	0.20	0.20
Sat Flow, veh/h	1616	3479	72	1774	3539	1555	3442	1268	506	3281	1863	1553
Grp Volume(v), veh/h	57	337	353	75	618	322	338	0	270	392	30	75
Grp Sat Flow(s),veh/h/ln	1616	1736	1815	1774	1770	1555	1721	0	1773	1640	1863	1553
Q Serve(g_s), s	2.8	12.7	12.7	3.4	11.0	13.6	7.7	0.0	11.9	9.4	1.1	3.3
Cycle Q Clear(g_c), s	2.8	12.7	12.7	3.4	11.0	13.6	7.7	0.0	11.9	9.4	1.1	3.3
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	72	602	630	96	1262	554	427	0	323	472	377	314
V/C Ratio(X)	0.79	0.56	0.56	0.78	0.49	0.58	0.79	0.00	0.84	0.83	0.08	0.24
Avail Cap(c_a), veh/h	140	602	630	154	1262	554	597	0	417	569	438	366
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00
Uniform Delay (d), s/veh	38.2	21.4	21.4	37.7	20.2	21.1	34.3	0.0	31.8	33.6	26.1	27.0
Incr Delay (d2), s/veh	7.0	3.7	3.6	12.6	1.4	4.4	3.1	0.0	11.0	7.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	11.0	11.3	3.6	9.4	10.7	6.9	0.0	11.0	8.3	1.0	2.5
LnGrp Delay(d),s/veh	45.2	25.1	24.9	50.3	21.6	25.5	37.5	0.0	42.8	40.9	26.1	27.1
LnGrp LOS	D	C	C	D	C	C	D		D	D	C	C
Approach Vol, veh/h		747			1015			608			497	
Approach Delay, s/veh		26.6			25.0			39.9			37.9	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	34.0	15.0	22.3	8.6	34.8	16.6	20.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	7.0	28.0	14.0	19.0	7.0	28.0	14.0	19.0				
Max Q Clear Time (g_c+I1), s	5.4	14.7	9.7	5.3	4.8	15.6	11.4	13.9				
Green Ext Time (p_c), s	0.0	8.0	0.3	1.6	0.0	7.6	0.2	0.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.8									
HCM 2010 LOS			C									

17004213G - Washington Town Center  
 12: US Route 130 & Robbinsville-Allentown Road (CR 526)

2019 Build Conditions  
 AM Peak

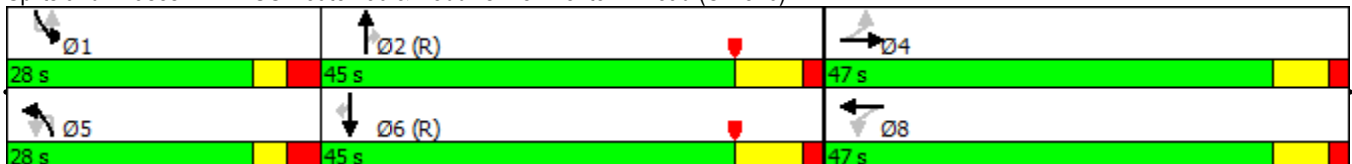





















Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕	↗	↘		↗	↑↑	↗		↗	↑↑	↗
Traffic Volume (vph)	6	151	185	184	3	292	1137	66	3	31	1046	1
Future Volume (vph)	6	151	185	184	3	292	1137	66	3	31	1046	1
Lane Group Flow (vph)	0	589	206	218	0	327	1263	73	0	37	1162	1
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm
Protected Phases		4		8		5	2			1	6	
Permitted Phases	4		8		5			2	1			6
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	32.0	32.0	5.0	5.0	32.0	32.0
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	40.0	40.0	11.0	11.0	40.0	40.0
Total Split (s)	47.0	47.0	47.0	47.0	28.0	28.0	45.0	45.0	28.0	28.0	45.0	45.0
Total Split (%)	39.2%	39.2%	39.2%	39.2%	23.3%	23.3%	37.5%	37.5%	23.3%	23.3%	37.5%	37.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)		7.0	7.0	7.0			6.0	8.0			6.0	8.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max
v/c Ratio		0.86	1.45	0.35			5.54	1.05	0.13		0.58	1.16
Control Delay		44.0	269.6	31.7			2091.1	78.1	4.4		91.8	103.9
Queue Delay		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0
Total Delay		44.0	269.6	31.7			2091.1	78.1	4.4		91.8	103.9
Queue Length 50th (ft)		358	~217	125			~446	~624	0		30	~545
Queue Length 95th (ft)		#559	#372	194			#633	#786	24		m48	#672
Internal Link Dist (ft)		1177		507				493				460
Turn Bay Length (ft)			105				275		275		300	120
Base Capacity (vph)		688	142	623			59	1203	574		84	1005
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		0.86	1.45	0.35			5.54	1.05	0.13		0.44	1.16

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 ~ 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.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	6	151	373	185	184	13	3	292	1137	66	3	31
Future Volume (veh/h)	6	151	373	185	184	13	3	292	1137	66	3	31
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1944	1900	1863	1882	1900		1845	1759	1727		1849
Adj Flow Rate, veh/h	7	168	0	206	204	14		324	1263	73		34
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90
Percent Heavy Veh, %	2	2	2	2	1	1		3	8	10		3
Cap, veh/h	37	424	0	295	389	27		322	1917	841		50
Arrive On Green	0.22	0.22	0.00	0.22	0.22	0.22		0.18	0.57	0.57		0.03
Sat Flow, veh/h	28	1899	0	1212	1742	120		1757	3343	1467		1761
Grp Volume(v), veh/h	175	0	0	206	0	218		324	1263	73		34
Grp Sat Flow(s),veh/h/ln	1927	0	0	1212	0	1861		1757	1671	1467		1761
Q Serve(g_s), s	0.0	0.0	0.0	14.1	0.0	12.4		22.0	31.1	2.7		2.3
Cycle Q Clear(g_c), s	9.2	0.0	0.0	23.3	0.0	12.4		22.0	31.1	2.7		2.3
Prop In Lane	0.04		0.00	1.00		0.06		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	462	0	0	295	0	416		322	1917	841		50
V/C Ratio(X)	0.38	0.00	0.00	0.70	0.00	0.52		1.01	0.66	0.09		0.68
Avail Cap(c_a), veh/h	670	0	0	429	0	620		322	1917	841		323
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	39.8	0.0	0.0	46.5	0.0	41.0		49.0	17.6	11.5		57.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.0	0.4		51.6	1.8	0.2		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	8.6	0.0	0.0	11.0	0.0	10.6		27.5	21.0	2.0		2.2
LnGrp Delay(d),s/veh	40.0	0.0	0.0	47.6	0.0	41.4		100.6	19.3	11.7		63.8
LnGrp LOS	D			D		D		F	B	B		E
Approach Vol, veh/h		175			424				1660			
Approach Delay, s/veh		40.0			44.4				34.9			
Approach LOS		D			D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	76.8		33.8	28.0	58.2		33.8				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	22.0	37.0		40.0	22.0	37.0		40.0				
Max Q Clear Time (g_c+I1), s	4.3	33.1		11.2	24.0	38.7		25.3				
Green Ext Time (p_c), s	0.0	3.2		1.7	0.0	0.0		1.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				37.1								
HCM 2010 LOS				D								
<b>Notes</b>												

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1046	1
Future Volume (veh/h)	1046	1
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1976
Adj Flow Rate, veh/h	1162	1
Adj No. of Lanes	2	1
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	7	0
Cap, veh/h	1411	702
Arrive On Green	0.42	0.42
Sat Flow, veh/h	3374	1678
Grp Volume(v), veh/h	1162	1
Grp Sat Flow(s),veh/h/ln	1687	1678
Q Serve(g_s), s	36.7	0.0
Cycle Q Clear(g_c), s	36.7	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1411	702
V/C Ratio(X)	0.82	0.00
Avail Cap(c_a), veh/h	1411	702
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	31.0	20.3
Incr Delay (d2), s/veh	5.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.2	0.0
LnGrp Delay(d),s/veh	36.5	20.3
LnGrp LOS	D	C
Approach Vol, veh/h	1197	
Approach Delay, s/veh	37.3	
Approach LOS	D	
Timer		



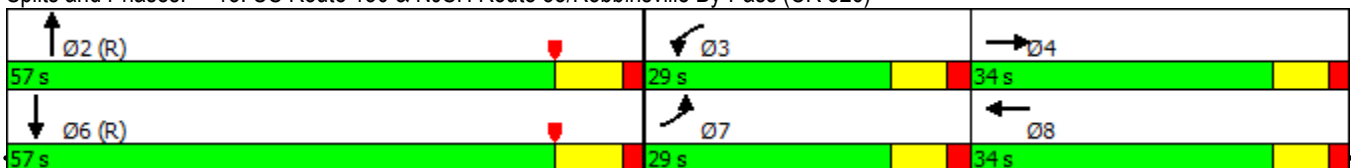




















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↗	↑↓	↖	↑↓	↑↑↓	↑↑↓
Traffic Volume (vph)	406	177	94	674	1153	975
Future Volume (vph)	406	177	94	674	1153	975
Lane Group Flow (vph)	441	228	102	830	1260	1373
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	49.0	49.0
Minimum Split (s)	14.0	14.0	14.0	14.0	57.0	57.0
Total Split (s)	29.0	34.0	29.0	34.0	57.0	57.0
Total Split (%)	24.2%	28.3%	24.2%	28.3%	47.5%	47.5%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.80	0.24	0.61	0.97	0.64	0.70
Control Delay	59.2	32.5	66.7	69.1	2.5	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	32.5	66.7	69.1	2.5	29.9
Queue Length 50th (ft)	170	69	77	335	8	301
Queue Length 95th (ft)	223	m110	131	#501	m7	356
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	629	968	312	855	1955	1972
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	0.70	0.24	0.33	0.97	0.64	0.70

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 10 (8%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	177	33	94	674	89	0	1153	6	0	975	288
Future Volume (veh/h)	406	177	33	94	674	89	0	1153	6	0	975	288
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1683	1900	1792	1833	1900	0	1755	1900	0	1791	1900
Adj Flow Rate, veh/h	441	192	36	102	733	0	0	1253	7	0	1060	313
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	8	8	6	4	4	0	8	8	0	7	7
Cap, veh/h	505	800	147	126	780	0	0	2194	12	0	1672	494
Arrive On Green	0.15	0.30	0.30	0.07	0.22	0.00	0.00	0.45	0.45	0.00	0.45	0.45
Sat Flow, veh/h	3442	2698	497	1707	3575	0	0	5076	27	0	3910	1107
Grp Volume(v), veh/h	441	112	116	102	733	0	0	814	446	0	922	451
Grp Sat Flow(s),veh/h/ln	1721	1599	1595	1707	1741	0	0	1597	1751	0	1630	1596
Q Serve(g_s), s	15.1	6.4	6.6	7.1	24.8	0.0	0.0	22.7	22.7	0.0	26.2	26.2
Cycle Q Clear(g_c), s	15.1	6.4	6.6	7.1	24.8	0.0	0.0	22.7	22.7	0.0	26.2	26.2
Prop In Lane	1.00		0.31	1.00		0.00	0.00		0.02	0.00		0.69
Lane Grp Cap(c), veh/h	505	474	473	126	780	0	0	1425	781	0	1454	712
V/C Ratio(X)	0.87	0.24	0.24	0.81	0.94	0.00	0.00	0.57	0.57	0.00	0.63	0.63
Avail Cap(c_a), veh/h	631	474	473	313	784	0	0	1425	781	0	1454	712
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	31.9	32.0	54.7	45.8	0.0	0.0	24.7	24.7	0.0	25.7	25.7
Incr Delay (d2), s/veh	9.5	0.1	0.1	4.6	18.8	0.0	0.0	1.7	3.0	0.0	2.1	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.4	5.1	5.3	6.3	20.1	0.0	0.0	15.5	17.1	0.0	17.9	18.1
LnGrp Delay(d),s/veh	59.6	32.0	32.1	59.3	64.5	0.0	0.0	26.4	27.7	0.0	27.8	29.9
LnGrp LOS	E	C	C	E	E			C	C		C	C
Approach Vol, veh/h		669			835			1260			1373	
Approach Delay, s/veh		50.2			63.9			26.8			28.5	
Approach LOS		D			E			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		61.5	15.9	42.6		61.5	24.6	33.9				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		49.0	22.0	27.0		49.0	22.0	27.0				
Max Q Clear Time (g_c+I1), s		24.7	9.1	8.6		28.2	17.1	26.8				
Green Ext Time (p_c), s		12.3	0.1	2.1		11.3	0.5	0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			38.6									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖		↗	
Traffic Vol, veh/h	0	41	477	0	489	1
Future Vol, veh/h	0	41	477	0	489	1
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	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	45	518	0	532	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	532	533	-	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	547	1035	0	-	-
Stage 1	0	-	-	0	-	-
Stage 2	0	-	-	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	-	547	1035	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	11.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	EBLn1	SBT	SBR
Capacity (veh/h)	1035	547	-	-
HCM Lane V/C Ratio	0.501	0.081	-	-
HCM Control Delay (s)	11.9	12.2	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	2.9	0.3	-	-

17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 No Build Conditions  
 PM Peak

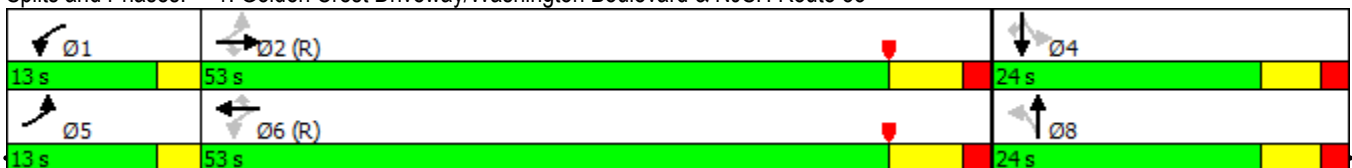
























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	246	876	15	55	747	96	31	36	132	31	259
Future Volume (vph)	246	876	15	55	747	96	31	36	132	31	259
Lane Group Flow (vph)	262	932	16	59	795	102	33	123	0	173	276
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.74	0.82	0.01	0.22	0.82	0.12	0.18	0.34		0.79	0.55
Control Delay	21.2	23.3	0.0	9.2	35.0	9.5	33.1	14.6		60.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	21.2	23.3	0.0	9.2	35.0	9.5	33.1	14.6		60.0	8.5
Queue Length 50th (ft)	43	416	0	17	435	16	16	18		93	0
Queue Length 95th (ft)	#95	#729	0	m22	#649	m41	42	64		#178	64
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	366	1142	1108	353	974	883	214	414		260	548
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	0.72	0.82	0.01	0.17	0.82	0.12	0.15	0.30		0.67	0.50

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	876	15	55	747	96	31	36	80	132	31	259
Future Volume (veh/h)	246	876	15	55	747	96	31	36	80	132	31	259
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1976	1900	1845	1863	1900	1945	1900	1900	1900	1937
Adj Flow Rate, veh/h	262	932	16	59	795	102	33	38	85	140	33	276
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	1	0	0	3	2	0	3	3	0	0	2
Cap, veh/h	346	1090	973	258	991	850	97	107	240	227	38	329
Arrive On Green	0.09	0.58	0.58	0.04	0.54	0.54	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	1881	1680	1810	1845	1583	1087	535	1198	771	189	1647
Grp Volume(v), veh/h	262	932	16	59	795	102	33	0	123	173	0	276
Grp Sat Flow(s),veh/h/ln	1774	1881	1680	1810	1845	1583	1087	0	1733	960	0	1647
Q Serve(g_s), s	5.5	37.2	0.4	1.3	31.6	2.9	1.4	0.0	5.5	11.1	0.0	14.5
Cycle Q Clear(g_c), s	5.5	37.2	0.4	1.3	31.6	2.9	18.0	0.0	5.5	16.6	0.0	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.69	0.81		1.00
Lane Grp Cap(c), veh/h	346	1090	973	258	991	850	97	0	347	264	0	329
V/C Ratio(X)	0.76	0.86	0.02	0.23	0.80	0.12	0.34	0.00	0.35	0.65	0.00	0.84
Avail Cap(c_a), veh/h	392	1090	973	381	991	850	97	0	347	264	0	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	15.8	8.0	15.1	16.9	10.3	44.6	0.0	31.0	38.1	0.0	34.6
Incr Delay (d2), s/veh	6.0	8.6	0.0	0.1	4.9	0.2	0.8	0.0	0.2	4.6	0.0	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.6	29.4	0.3	1.1	22.9	2.3	1.5	0.0	4.8	8.1	0.0	12.7
LnGrp Delay(d),s/veh	23.0	24.4	8.1	15.2	21.8	10.5	45.4	0.0	31.2	42.6	0.0	50.8
LnGrp LOS	C	C	A	B	C	B	D		C	D		D
Approach Vol, veh/h		1210			956			156			449	
Approach Delay, s/veh		23.9			20.2			34.2			47.7	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	59.1		24.0	10.7	55.3		24.0				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	3.3	39.2		18.6	7.5	33.6		20.0				
Green Ext Time (p_c), s	0.0	4.3		0.0	0.1	6.5		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			27.0									
HCM 2010 LOS			C									
























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	47	1040	15	866	7	8	3	55	1
Future Volume (vph)	47	1040	15	866	7	8	3	55	1
Lane Group Flow (vph)	51	1119	16	931	8	9	15	59	27
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.13	0.76	0.05	0.67	0.01	0.06	0.08	0.42	0.14
Control Delay	0.9	10.4	2.6	12.6	0.0	36.1	21.2	46.9	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.9	10.4	2.6	12.6	0.0	36.1	21.2	46.9	16.0
Queue Length 50th (ft)	0	11	1	304	0	5	2	32	1
Queue Length 95th (ft)	m0	#905	6	559	0	18	19	68	24
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	492	1467	403	1385	1219	359	450	360	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.76	0.04	0.67	0.01	0.03	0.03	0.16	0.06

**Intersection Summary**

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 5: Lake Drive & NJSH Route 33**



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1040	1	15	866	7	8	3	11	55	1	24
Future Volume (veh/h)	47	1040	1	15	866	7	8	3	11	55	1	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1863	1900	1900	1976	1900	1900	1976	1900
Adj Flow Rate, veh/h	51	1118	1	16	931	8	9	3	12	59	1	26
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	0	2	0	0	0	0	4	0	0
Cap, veh/h	406	1374	1	447	1321	1146	161	25	101	172	5	118
Arrive On Green	0.05	0.97	0.97	0.02	0.71	0.71	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1810	1879	2	1810	1863	1615	1405	346	1385	1421	63	1626
Grp Volume(v), veh/h	51	0	1119	16	931	8	9	0	15	59	0	27
Grp Sat Flow(s),veh/h/ln	1810	0	1881	1810	1863	1615	1405	0	1732	1421	0	1689
Q Serve(g_s), s	0.6	0.0	7.1	0.2	26.1	0.1	0.5	0.0	0.7	3.6	0.0	1.4
Cycle Q Clear(g_c), s	0.6	0.0	7.1	0.2	26.1	0.1	1.9	0.0	0.7	4.4	0.0	1.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.80	1.00		0.96
Lane Grp Cap(c), veh/h	406	0	1375	447	1321	1146	161	0	126	172	0	123
V/C Ratio(X)	0.13	0.00	0.81	0.04	0.70	0.01	0.06	0.00	0.12	0.34	0.00	0.22
Avail Cap(c_a), veh/h	575	0	1375	655	1321	1146	418	0	443	432	0	432
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.00	0.47	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	0.0	0.4	3.5	7.6	3.8	40.2	0.0	39.0	41.1	0.0	39.3
Incr Delay (d2), s/veh	0.0	0.0	2.6	0.0	3.2	0.0	0.1	0.0	0.2	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	4.8	0.2	20.6	0.1	0.4	0.0	0.6	2.6	0.0	1.2
LnGrp Delay(d),s/veh	7.0	0.0	3.1	3.5	10.8	3.8	40.3	0.0	39.2	41.5	0.0	39.6
LnGrp LOS	A		A	A	B	A	D		D	D		D
Approach Vol, veh/h		1170			955			24				86
Approach Delay, s/veh		3.2			10.6			39.6				40.9
Approach LOS		A			B			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	72.8		12.6	6.6	70.8		12.6				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.2	9.1		6.4	2.6	28.1		3.9				
Green Ext Time (p_c), s	0.0	13.4		0.2	0.0	7.3		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			8.2									
HCM 2010 LOS			A									

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	1045	846	55	0	42
Future Vol, veh/h	62	1045	846	55	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	3	2	0	3
Mvmt Flow	67	1136	920	60	0	46

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	979	0	-	0	-	949
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.327
Pot Cap-1 Maneuver	713	-	-	-	0	315
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	713	-	-	-	-	315
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	713	-	-	-	315
HCM Lane V/C Ratio	0.095	-	-	-	0.145
HCM Control Delay (s)	10.6	-	-	-	18.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5





Lane Group	EBL	EBT	EBR	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	73	598	374	562	294	168	285	240	109
Future Volume (vph)	73	598	374	562	294	168	285	240	109
Lane Group Flow (vph)	79	650	407	611	320	441	310	261	118
Turn Type	Prot	NA	pm+ov	NA	Perm	NA	Split	NA	Prot
Protected Phases	5	2	8	6		8	4	4	4
Permitted Phases			2		6				
Detector Phase	5	2	8	6	6	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	20.0	7.0	10.0	10.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	34.0	19.0	22.0	22.0	19.0	17.0	17.0	17.0
Total Split (s)	13.0	54.0	36.0	41.0	41.0	36.0	34.0	34.0	34.0
Total Split (%)	10.5%	43.5%	29.0%	33.1%	33.1%	29.0%	27.4%	27.4%	27.4%
Yellow Time (s)	3.0	5.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
All-Red Time (s)	2.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	11.0	12.0	11.0	11.0	12.0	10.0	10.0	10.0
Lead/Lag	Lead			Lag	Lag				
Lead-Lag Optimize?	Yes			Yes	Yes				
Recall Mode	None	Min	None	Min	Min	None	None	None	None
v/c Ratio	0.73	0.98	0.37	1.34	0.53	1.15	0.93	0.74	0.25
Control Delay	92.8	70.6	6.5	205.8	16.4	139.3	83.6	60.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.8	70.6	6.5	205.8	16.4	139.3	83.6	60.4	1.2
Queue Length 50th (ft)	63	515	71	~647	64	~420	245	198	0
Queue Length 95th (ft)	#143	#765	128	#873	158	#629	#410	294	0
Internal Link Dist (ft)		523		1238		1506		456	
Turn Bay Length (ft)	305						200		
Base Capacity (vph)	113	663	1115	455	600	382	348	370	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.98	0.37	1.34	0.53	1.15	0.89	0.71	0.24

Intersection Summary

Cycle Length: 124

Actuated Cycle Length: 123.1

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

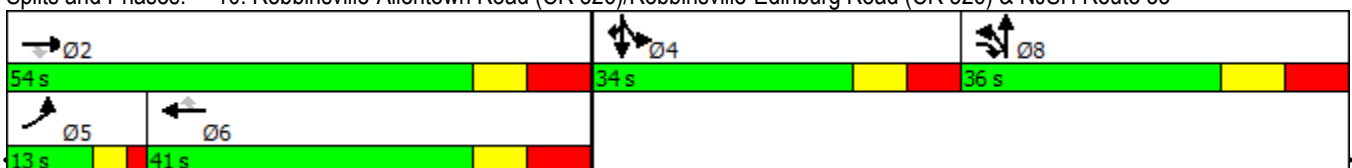
~ Volume exceeds capacity, queue is theoretically infinite.

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: 10: Robbinsville-Allentown Road (CR 526)/Robbinsville-Edinburg Road (CR 526) & NJSH Route 33



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	598	374	0	562	294	231	168	6	285	240	109
Future Volume (veh/h)	73	598	374	0	562	294	231	168	6	285	240	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1900	1956	0	1845	1956	1900	1965	1900	1881	1900	1900
Adj Flow Rate, veh/h	79	650	407	0	611	320	251	183	7	310	261	118
Adj No. of Lanes	1	1	1	0	1	1	0	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	0	1	0	3	1	0	0	0	1	0	0
Cap, veh/h	99	663	905	0	464	418	211	154	6	337	357	304
Arrive On Green	0.06	0.35	0.35	0.00	0.25	0.25	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1740	1900	1663	0	1845	1663	1084	791	30	1792	1900	1615
Grp Volume(v), veh/h	79	650	407	0	611	320	441	0	0	310	261	118
Grp Sat Flow(s),veh/h/ln	1740	1900	1663	0	1845	1663	1905	0	0	1792	1900	1615
Q Serve(g_s), s	5.5	41.7	18.2	0.0	31.0	22.0	24.0	0.0	0.0	20.9	15.9	7.9
Cycle Q Clear(g_c), s	5.5	41.7	18.2	0.0	31.0	22.0	24.0	0.0	0.0	20.9	15.9	7.9
Prop In Lane	1.00		1.00	0.00		1.00	0.57		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	99	663	905	0	464	418	371	0	0	337	357	304
V/C Ratio(X)	0.80	0.98	0.45	0.00	1.32	0.77	1.19	0.00	0.00	0.92	0.73	0.39
Avail Cap(c_a), veh/h	113	663	905	0	464	418	371	0	0	349	370	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	39.6	17.0	0.0	46.1	42.7	49.6	0.0	0.0	49.1	47.1	43.8
Incr Delay (d2), s/veh	24.9	29.9	0.5	0.0	157.2	8.7	108.4	0.0	0.0	27.7	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	35.9	17.7	0.0	64.8	16.5	42.8	0.0	0.0	18.8	13.8	6.4
LnGrp Delay(d),s/veh	82.2	69.5	17.5	0.0	203.3	51.4	158.0	0.0	0.0	76.8	53.0	44.1
LnGrp LOS	F	E	B		F	D	F			E	D	D
Approach Vol, veh/h		1136			931			441			689	
Approach Delay, s/veh		51.7			151.1			158.0			62.2	
Approach LOS		D			F			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		54.0		33.2	12.0	42.0		36.0				
Change Period (Y+Rc), s		11.0		10.0	5.0	11.0		12.0				
Max Green Setting (Gmax), s		43.0		24.0	8.0	30.0		24.0				
Max Q Clear Time (g_c+I1), s		43.7		22.9	7.5	33.0		26.0				
Green Ext Time (p_c), s		0.0		0.2	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			97.6									
HCM 2010 LOS			F									

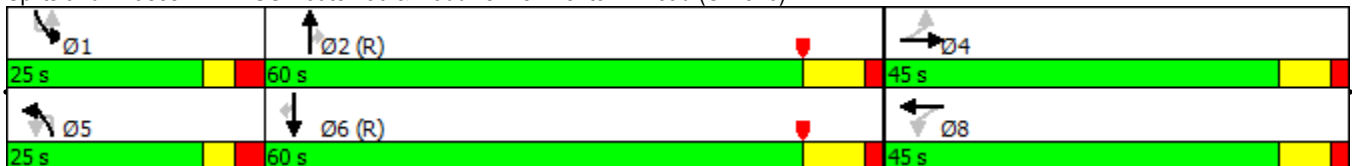


Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Lane Configurations		↔	↗	↘		↗	↑↑	↗		↗	↑↑	↗	
Traffic Volume (vph)	15	223	90	123	4	264	1079	152	5	65	1345	18	
Future Volume (vph)	15	223	90	123	4	264	1079	152	5	65	1345	18	
Lane Group Flow (vph)	0	667	98	160	0	291	1173	165	0	76	1462	20	
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm	
Protected Phases		4		8		5	2			1	6		
Permitted Phases	4		8		5			2	1			6	
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6	
Switch Phase													
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	52.0	52.0	5.0	5.0	52.0	52.0	
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	60.0	60.0	11.0	11.0	60.0	60.0	
Total Split (s)	45.0	45.0	45.0	45.0	25.0	25.0	60.0	60.0	25.0	25.0	60.0	60.0	
Total Split (%)	34.6%	34.6%	34.6%	34.6%	19.2%	19.2%	46.2%	46.2%	19.2%	19.2%	46.2%	46.2%	
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0			0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		7.0	7.0	7.0			6.0	8.0		6.0	8.0	8.0	
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max	
v/c Ratio		1.12	1.38	0.30			5.20	0.87	0.24		1.36	1.09	0.03
Control Delay		114.7	273.9	35.6			1938.8	43.9	6.0		250.8	103.7	3.3
Queue Delay		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		114.7	273.9	35.6			1938.8	43.9	6.0		250.8	103.7	3.3
Queue Length 50th (ft)		~611	~109	99			~460	472	9		~87	~705	0
Queue Length 95th (ft)		#851	#228	161			#611	571	54		m#119	#894	m0
Internal Link Dist (ft)		1506		507				493				460	
Turn Bay Length (ft)			105				275		275		300		120
Base Capacity (vph)		593	71	542			56	1355	694		56	1342	700
Starvation Cap Reductn		0	0	0			0	0	0		0	0	0
Spillback Cap Reductn		0	0	0			0	0	0		0	0	0
Storage Cap Reductn		0	0	0			0	0	0		0	0	0
Reduced v/c Ratio		1.12	1.38	0.30			5.20	0.87	0.24		1.36	1.09	0.03

**Intersection Summary**

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 ~ 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.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)**



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	15	223	376	90	123	24	4	264	1079	152	5	65
Future Volume (veh/h)	15	223	376	90	123	24	4	264	1079	152	5	65
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1957	1900	1881	1881	1900		1900	1845	1881		1900
Adj Flow Rate, veh/h	16	242	0	98	134	26		287	1173	165		71
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
Percent Heavy Veh, %	1	1	1	1	1	1		0	3	1		0
Cap, veh/h	41	341	0	180	281	54		264	2119	966		91
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18		0.15	0.60	0.60		0.05
Sat Flow, veh/h	63	1860	0	1145	1532	297		1810	3505	1598		1810
Grp Volume(v), veh/h	258	0	0	98	0	160		287	1173	165		71
Grp Sat Flow(s),veh/h/ln	1924	0	0	1145	0	1829		1810	1752	1598		1810
Q Serve(g_s), s	5.4	0.0	0.0	4.2	0.0	10.2		19.0	25.9	5.9		5.0
Cycle Q Clear(g_c), s	16.3	0.0	0.0	20.6	0.0	10.2		19.0	25.9	5.9		5.0
Prop In Lane	0.06		0.00	1.00		0.16		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	382	0	0	180	0	335		264	2119	966		91
V/C Ratio(X)	0.68	0.00	0.00	0.55	0.00	0.48		1.09	0.55	0.17		0.78
Avail Cap(c_a), veh/h	589	0	0	304	0	535		264	2119	966		264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	0.85	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	50.0	0.0	0.0	53.6	0.0	47.5		55.5	15.3	11.3		61.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.0	0.0	0.4		79.9	1.0	0.4		5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	13.3	0.0	0.0	6.3	0.0	8.9		27.6	18.5	4.9		4.8
LnGrp Delay(d),s/veh	50.6	0.0	0.0	54.6	0.0	47.9		135.4	16.3	11.7		66.2
LnGrp LOS	D			D		D		F	B	B		E
Approach Vol, veh/h		258			258				1625			
Approach Delay, s/veh		50.6			50.4				36.9			
Approach LOS		D			D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	86.6		30.8	25.0	74.2		30.8				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	19.0	52.0		38.0	19.0	52.0		38.0				
Max Q Clear Time (g_c+I1), s	7.0	27.9		18.3	21.0	48.4		22.6				
Green Ext Time (p_c), s	0.1	14.0		1.3	0.0	3.0		1.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			37.2									
HCM 2010 LOS			D									
<b>Notes</b>												

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1345	18
Future Volume (veh/h)	1345	18
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1864
Adj Flow Rate, veh/h	1462	20
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	4	6
Cap, veh/h	1767	806
Arrive On Green	0.51	0.51
Sat Flow, veh/h	3471	1583
Grp Volume(v), veh/h	1462	20
Grp Sat Flow(s),veh/h/ln	1736	1583
Q Serve(g_s), s	46.4	0.8
Cycle Q Clear(g_c), s	46.4	0.8
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1767	806
V/C Ratio(X)	0.83	0.02
Avail Cap(c_a), veh/h	1767	806
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	27.1	15.9
Incr Delay (d2), s/veh	4.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	31.2	0.7
LnGrp Delay(d),s/veh	31.7	15.9
LnGrp LOS	C	B
Approach Vol, veh/h	1553	
Approach Delay, s/veh	33.1	
Approach LOS	C	
Timer		

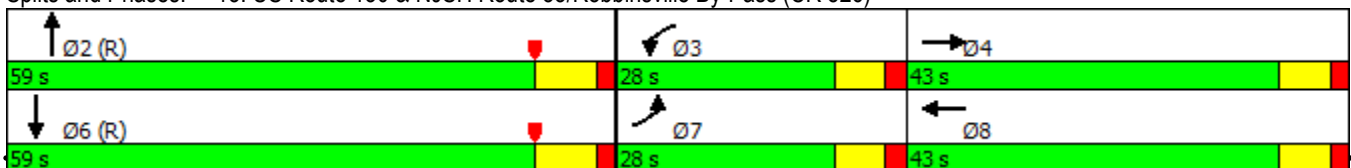


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↖	↑↗	↖	↑↗	↑↑↗	↑↑↗
Traffic Volume (vph)	413	514	77	487	1109	1393
Future Volume (vph)	413	514	77	487	1109	1393
Lane Group Flow (vph)	454	619	85	605	1229	1936
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	51.0	51.0
Minimum Split (s)	14.0	14.0	14.0	14.0	59.0	59.0
Total Split (s)	28.0	43.0	28.0	43.0	59.0	59.0
Total Split (%)	21.5%	33.1%	21.5%	33.1%	45.4%	45.4%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.85	0.64	0.58	0.83	0.52	0.84
Control Delay	67.4	44.6	72.1	58.7	19.1	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	44.6	72.1	58.7	19.1	34.1
Queue Length 50th (ft)	192	243	70	254	389	509
Queue Length 95th (ft)	m#253	m303	123	305	m440	#672
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	565	1003	277	961	2365	2309
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	0.80	0.62	0.31	0.63	0.52	0.84

**Intersection Summary**

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)**



17004213G - Washington Town Center  
 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)

2019 No Build Conditions  
 PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	514	49	77	487	64	0	1109	9	0	1393	369
Future Volume (veh/h)	413	514	49	77	487	64	0	1109	9	0	1393	369
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1873	1900	1810	1844	1900	0	1843	1900	0	1831	1900
Adj Flow Rate, veh/h	454	565	54	85	535	0	0	1219	10	0	1531	405
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	5	2	2	0	3	3	0	4	4
Cap, veh/h	509	865	83	106	631	0	0	2603	21	0	1995	523
Arrive On Green	0.14	0.26	0.26	0.06	0.18	0.00	0.00	0.51	0.51	0.00	0.51	0.51
Sat Flow, veh/h	3510	3284	313	1723	3596	0	0	5315	42	0	4110	1034
Grp Volume(v), veh/h	454	306	313	85	535	0	0	794	435	0	1291	645
Grp Sat Flow(s),veh/h/ln	1755	1779	1818	1723	1752	0	0	1678	1836	0	1666	1648
Q Serve(g_s), s	16.5	19.9	19.9	6.3	19.2	0.0	0.0	19.9	19.9	0.0	40.6	41.4
Cycle Q Clear(g_c), s	16.5	19.9	19.9	6.3	19.2	0.0	0.0	19.9	19.9	0.0	40.6	41.4
Prop In Lane	1.00		0.17	1.00		0.00	0.00		0.02	0.00		0.63
Lane Grp Cap(c), veh/h	509	469	479	106	631	0	0	1696	928	0	1684	833
V/C Ratio(X)	0.89	0.65	0.65	0.80	0.85	0.00	0.00	0.47	0.47	0.00	0.77	0.77
Avail Cap(c_a), veh/h	567	493	503	278	970	0	0	1696	928	0	1684	833
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.6	42.6	42.6	60.2	51.6	0.0	0.0	20.8	20.8	0.0	25.9	26.1
Incr Delay (d2), s/veh	14.3	2.1	2.1	5.1	2.7	0.0	0.0	0.9	1.7	0.0	3.4	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.9	15.2	15.6	5.7	14.6	0.0	0.0	14.4	15.8	0.0	26.7	27.8
LnGrp Delay(d),s/veh	68.9	44.7	44.8	65.3	54.2	0.0	0.0	21.7	22.5	0.0	29.3	33.1
LnGrp LOS	E	D	D	E	D			C	C		C	C
Approach Vol, veh/h		1073			620			1229			1936	
Approach Delay, s/veh		55.0			55.7			22.0			30.6	
Approach LOS		D			E			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		73.7	15.0	41.3		73.7	25.8	30.4				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		51.0	21.0	36.0		51.0	21.0	36.0				
Max Q Clear Time (g_c+I1), s		21.9	8.3	21.9		43.4	18.5	21.2				
Green Ext Time (p_c), s		17.4	0.1	2.2		6.3	0.3	2.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				37.0								
HCM 2010 LOS				D								

17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 Build Conditions  
 PM Peak

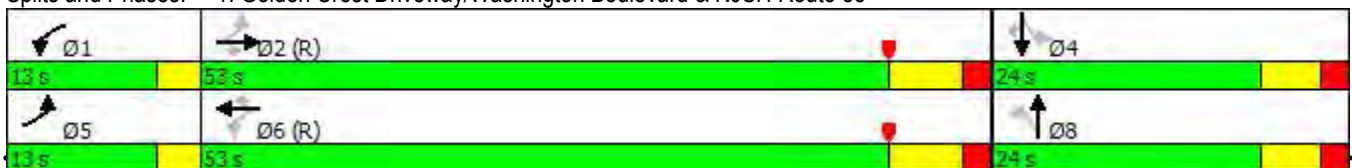


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	246	947	15	55	814	109	31	36	146	31	259
Future Volume (vph)	246	947	15	55	814	109	31	36	146	31	259
Lane Group Flow (vph)	262	1007	16	59	866	116	33	123	0	188	276
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.86	0.89	0.01	0.29	0.93	0.14	0.18	0.33		0.82	0.53
Control Delay	46.8	29.8	0.0	10.9	43.4	8.3	33.0	14.3		63.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	46.8	29.8	0.0	10.9	43.4	8.3	33.0	14.3		63.4	8.2
Queue Length 50th (ft)	86	507	0	16	491	15	16	18		101	0
Queue Length 95th (ft)	#234	#822	0	m21	#751	m40	42	64		#202	64
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	303	1127	1094	284	932	856	203	414		258	548
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	0.86	0.89	0.01	0.21	0.93	0.14	0.16	0.30		0.73	0.50

























Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33





												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	947	15	55	814	109	31	36	80	146	31	259
Future Volume (veh/h)	246	947	15	55	814	109	31	36	80	146	31	259
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1976	1900	1845	1863	1900	1945	1900	1900	1900	1937
Adj Flow Rate, veh/h	262	1007	16	59	866	116	33	38	85	155	33	276
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	1	0	0	3	2	0	3	3	0	0	2
Cap, veh/h	304	1090	973	211	991	850	82	107	240	229	33	329
Arrive On Green	0.09	0.58	0.58	0.04	0.54	0.54	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	1881	1680	1810	1845	1583	1087	535	1198	782	166	1647
Grp Volume(v), veh/h	262	1007	16	59	866	116	33	0	123	188	0	276
Grp Sat Flow(s),veh/h/ln	1774	1881	1680	1810	1845	1583	1087	0	1733	948	0	1647
Q Serve(g_s), s	5.5	43.6	0.4	1.3	36.9	3.3	0.1	0.0	5.5	12.4	0.0	14.5
Cycle Q Clear(g_c), s	5.5	43.6	0.4	1.3	36.9	3.3	18.0	0.0	5.5	17.9	0.0	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.69	0.82		1.00
Lane Grp Cap(c), veh/h	304	1090	973	211	991	850	82	0	347	263	0	329
V/C Ratio(X)	0.86	0.92	0.02	0.28	0.87	0.14	0.40	0.00	0.35	0.72	0.00	0.84
Avail Cap(c_a), veh/h	350	1090	973	334	991	850	82	0	347	263	0	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	17.1	8.0	18.0	18.2	10.4	45.0	0.0	31.0	38.7	0.0	34.6
Incr Delay (d2), s/veh	15.9	14.2	0.0	0.2	7.5	0.2	1.2	0.0	0.2	7.8	0.0	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	35.1	0.3	1.3	26.7	2.6	1.5	0.0	4.8	9.0	0.0	12.7
LnGrp Delay(d),s/veh	35.1	31.3	8.1	18.2	25.7	10.6	46.2	0.0	31.2	46.5	0.0	50.8
LnGrp LOS	D	C	A	B	C	B	D		C	D		D
Approach Vol, veh/h		1285			1041			156			464	
Approach Delay, s/veh		31.8			23.6			34.4			49.1	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	59.1		24.0	10.7	55.3		24.0				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	3.3	45.6		19.9	7.5	38.9		20.0				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.1	4.8		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			31.8									
HCM 2010 LOS			C									
























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	47	1074	30	887	7	67	3	55	1
Future Volume (vph)	47	1074	30	887	7	67	3	55	1
Lane Group Flow (vph)	51	1211	32	954	8	72	38	59	27
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.14	0.89	0.16	0.70	0.01	0.48	0.18	0.40	0.13
Control Delay	1.0	18.9	4.1	14.1	0.0	47.8	15.2	44.7	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	18.9	4.1	14.1	0.0	47.8	15.2	44.7	15.3
Queue Length 50th (ft)	0	646	3	332	0	39	2	32	1
Queue Length 95th (ft)	m1	m#988	10	#658	0	78	29	67	24
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	477	1366	314	1369	1207	359	458	353	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.89	0.10	0.70	0.01	0.20	0.08	0.17	0.06

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lake Drive & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1074	52	30	887	7	67	3	33	55	1	24
Future Volume (veh/h)	47	1074	52	30	887	7	67	3	33	55	1	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1882	1900	1900	1863	1900	1900	1976	1900	1900	1976	1900
Adj Flow Rate, veh/h	51	1155	56	32	954	8	72	3	35	59	1	26
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	0	2	0	0	0	0	4	0	0
Cap, veh/h	372	1250	61	206	1290	1118	185	12	141	176	6	146
Arrive On Green	0.04	0.70	0.70	0.03	0.69	0.69	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1810	1780	86	1810	1863	1615	1405	134	1566	1391	63	1626
Grp Volume(v), veh/h	51	0	1211	32	954	8	72	0	38	59	0	27
Grp Sat Flow(s),veh/h/ln	1810	0	1867	1810	1863	1615	1405	0	1700	1391	0	1689
Q Serve(g_s), s	0.7	0.0	49.5	0.4	29.1	0.1	4.5	0.0	1.9	3.7	0.0	1.3
Cycle Q Clear(g_c), s	0.7	0.0	49.5	0.4	29.1	0.1	5.8	0.0	1.9	5.6	0.0	1.3
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.92	1.00		0.96
Lane Grp Cap(c), veh/h	372	0	1310	206	1290	1118	185	0	153	176	0	152
V/C Ratio(X)	0.14	0.00	0.92	0.16	0.74	0.01	0.39	0.00	0.25	0.34	0.00	0.18
Avail Cap(c_a), veh/h	540	0	1310	392	1290	1118	418	0	434	407	0	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.00	0.33	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	0.0	11.4	17.7	8.7	4.3	40.6	0.0	38.1	40.7	0.0	37.9
Incr Delay (d2), s/veh	0.0	0.0	4.8	0.3	3.8	0.0	0.5	0.0	0.3	0.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0	31.5	0.9	22.5	0.1	3.2	0.0	1.6	2.6	0.0	1.1
LnGrp Delay(d),s/veh	8.5	0.0	16.2	18.0	12.6	4.3	41.1	0.0	38.5	41.1	0.0	38.1
LnGrp LOS	A		B	B	B	A	D		D	D		D
Approach Vol, veh/h		1262			994			110			86	
Approach Delay, s/veh		15.9			12.7			40.2			40.2	
Approach LOS		B			B			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	70.2		14.1	6.6	69.3		14.1				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.4	51.5		7.6	2.7	31.1		7.8				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	6.0		0.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1067	34	48	882	55	0	0	46	0	0	42
Future Vol, veh/h	62	1067	34	48	882	55	0	0	46	0	0	42
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	125	-	-	75	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	2	2	3	2	2	2	2	0	2	3
Mvmt Flow	67	1160	37	52	959	60	0	0	50	0	0	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	959	0	0	1197	0	0	-	-	1178	-	-	959
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.12	-	-	-	-	6.22	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	-	-	3.318	-	-	3.327
Pot Cap-1 Maneuver	725	-	-	583	-	-	0	0	232	0	0	310
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	725	-	-	583	-	-	-	-	232	-	-	310
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.6			24.7			18.6		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	232	725	-	-	583	-	-	310
HCM Lane V/C Ratio	0.216	0.093	-	-	0.089	-	-	0.147
HCM Control Delay (s)	24.7	10.5	-	-	11.8	-	-	18.6
HCM Lane LOS	C	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0.3	-	-	0.5

17004213G - Washington Town Center  
 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)

2019 Build Conditions  
 PM Peak



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↙	↕	↙	↕	↗	↙	↕	↙	↕	↗
Traffic Volume (vph)	73	1025	81	609	294	268	194	519	34	109
Future Volume (vph)	73	1025	81	609	294	268	194	519	34	109
Lane Group Flow (vph)	79	1130	88	662	320	291	290	564	37	118
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8	7	4	
Permitted Phases					6					4
Detector Phase	5	2	1	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	13.0	10.0	13.0	13.0	12.0	13.0	12.0	13.0	13.0
Total Split (s)	14.0	36.0	14.0	36.0	36.0	23.0	27.0	23.0	27.0	27.0
Total Split (%)	14.0%	36.0%	14.0%	36.0%	36.0%	23.0%	27.0%	23.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.55	0.96	0.56	0.58	0.40	0.43	0.81	0.89	0.09	0.26
Control Delay	58.4	52.7	57.9	30.3	4.8	39.8	52.6	55.9	30.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	52.7	57.9	30.3	4.8	39.8	52.6	55.9	30.1	5.1
Queue Length 50th (ft)	49	~413	55	190	0	92	165	182	18	0
Queue Length 95th (ft)	97	#547	#109	252	61	130	#282	#279	45	32
Internal Link Dist (ft)		523		70			282		456	
Turn Bay Length (ft)	305					100		200		
Base Capacity (vph)	169	1173	173	1149	792	797	420	677	476	518
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	0.47	0.96	0.51	0.58	0.40	0.37	0.69	0.83	0.08	0.23

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 93.6

Natural Cycle: 90

Control Type: Semi Act-Uncoord

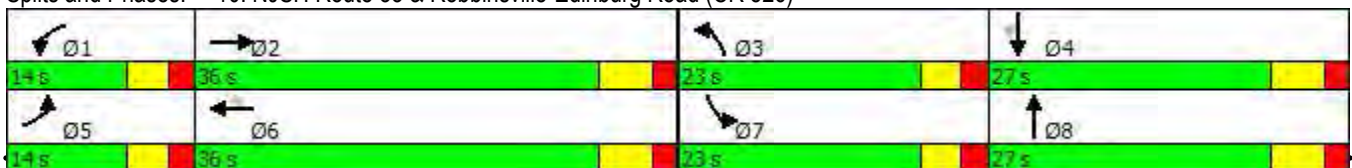
~ Volume exceeds capacity, queue is theoretically infinite.























Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

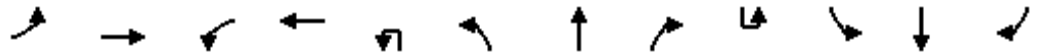
Splits and Phases: 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1025	15	81	609	294	268	194	73	519	34	109
Future Volume (veh/h)	73	1025	15	81	609	294	268	194	73	519	34	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1899	1900	1863	1845	1956	1863	1863	1900	1881	1863	1900
Adj Flow Rate, veh/h	79	1114	16	88	662	320	291	211	79	564	37	118
Adj No. of Lanes	1	2	0	1	2	1	2	1	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	0	0	2	3	1	2	2	2	1	2	0
Cap, veh/h	101	1191	17	113	1166	553	373	242	90	635	487	422
Arrive On Green	0.06	0.33	0.33	0.06	0.33	0.33	0.11	0.19	0.19	0.18	0.26	0.26
Sat Flow, veh/h	1740	3642	52	1774	3505	1663	3442	1293	484	3476	1863	1615
Grp Volume(v), veh/h	79	552	578	88	662	320	291	0	290	564	37	118
Grp Sat Flow(s),veh/h/ln	1740	1804	1890	1774	1752	1663	1721	0	1777	1738	1863	1615
Q Serve(g_s), s	4.1	27.2	27.2	4.5	14.3	14.6	7.6	0.0	14.5	14.5	1.4	5.3
Cycle Q Clear(g_c), s	4.1	27.2	27.2	4.5	14.3	14.6	7.6	0.0	14.5	14.5	1.4	5.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	101	590	618	113	1166	553	373	0	332	635	487	422
V/C Ratio(X)	0.78	0.94	0.94	0.78	0.57	0.58	0.78	0.00	0.87	0.89	0.08	0.28
Avail Cap(c_a), veh/h	171	590	618	174	1166	553	675	0	407	682	487	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	29.9	29.9	42.3	25.2	25.3	39.8	0.0	36.2	36.6	25.5	27.0
Incr Delay (d2), s/veh	4.9	24.1	23.3	11.5	2.0	4.4	1.4	0.0	16.0	12.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.8	24.3	25.1	4.6	11.6	11.8	6.6	0.0	13.4	12.7	1.3	4.3
LnGrp Delay(d),s/veh	47.6	54.0	53.2	53.8	27.2	29.7	41.2	0.0	52.3	48.9	25.6	27.1
LnGrp LOS	D	D	D	D	C	C	D		D	D	C	C
Approach Vol, veh/h		1209			1070			581			719	
Approach Delay, s/veh		53.2			30.1			46.7			44.1	
Approach LOS		D			C			D			D	
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	36.0	14.9	30.0	10.3	36.5	21.8	23.1				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	9.0	30.0	18.0	21.0	9.0	30.0	18.0	21.0				
Max Q Clear Time (g_c+11), s	6.5	29.2	9.6	7.3	6.1	16.6	16.5	16.5				
Green Ext Time (p_c), s	0.0	0.7	0.4	1.8	0.0	9.9	0.2	0.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			43.4									
HCM 2010 LOS			D									

17004213G - Washington Town Center  
 12: US Route 130 & Robbinsville-Allentown Road (CR 526)

2019 Build Conditions  
 PM Peak



Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Lane Configurations		↔	↔	↔		↔	↑↑	↔		↔	↑↑	↔	
Traffic Volume (vph)	15	236	90	137	4	292	1093	152	5	65	1358	18	
Future Volume (vph)	15	236	90	137	4	292	1093	152	5	65	1358	18	
Lane Group Flow (vph)	0	712	98	175	0	321	1188	165	0	76	1476	20	
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm	
Protected Phases		4		8		5	2			1	6		
Permitted Phases	4		8		5			2	1			6	
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6	
Switch Phase													
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	42.0	42.0	5.0	5.0	42.0	42.0	
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	50.0	50.0	11.0	11.0	50.0	50.0	
Total Split (s)	45.0	45.0	45.0	45.0	27.0	27.0	58.0	58.0	27.0	27.0	58.0	58.0	
Total Split (%)	34.6%	34.6%	34.6%	34.6%	20.8%	20.8%	44.6%	44.6%	20.8%	20.8%	44.6%	44.6%	
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0			0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		7.0	7.0	7.0			6.0	8.0		6.0	8.0	8.0	
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max	
v/c Ratio		1.20	1.66	0.32			5.73	0.91	0.25		1.36	1.14	0.03
Control Delay		141.8	391.9	36.5			2178.0	49.4	6.8		241.7	126.1	3.6
Queue Delay		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		141.8	391.9	36.5			2178.0	49.4	6.8		241.7	126.1	3.6
Queue Length 50th (ft)		~689	~120	111			~513	495	11		~87	~745	0
Queue Length 95th (ft)		#933	#239	176			#669	#631	58		m#107	m#907	m0
Internal Link Dist (ft)		1165		507				493				460	
Turn Bay Length (ft)			105				275		275		300		120
Base Capacity (vph)		594	59	542			56	1303	669		56	1290	676
Starvation Cap Reductn		0	0	0			0	0	0		0	0	0
Spillback Cap Reductn		0	0	0			0	0	0		0	0	0
Storage Cap Reductn		0	0	0			0	0	0		0	0	0
Reduced v/c Ratio		1.20	1.66	0.32			5.73	0.91	0.25		1.36	1.14	0.03

Intersection Summary

- Cycle Length: 130
- Actuated Cycle Length: 130
- Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
- Natural Cycle: 80
- Control Type: Actuated-Coordinated
- ~ 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.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)



17004213G - Washington Town Center  
 12: US Route 130 & Robbinsville-Allentown Road (CR 526)

2019 Build Conditions  
 PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	15	236	404	90	137	24	4	292	1093	152	5	65
Future Volume (veh/h)	15	236	404	90	137	24	4	292	1093	152	5	65
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1957	1900	1881	1881	1900		1900	1845	1881		1900
Adj Flow Rate, veh/h	16	257	0	98	149	26		317	1188	165		71
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
Percent Heavy Veh, %	1	1	1	1	1	1		0	3	1		0
Cap, veh/h	41	357	0	180	299	52		292	2091	953		92
Arrive On Green	0.19	0.19	0.00	0.19	0.19	0.19		0.16	0.60	0.60		0.05
Sat Flow, veh/h	60	1865	0	1129	1561	272		1810	3505	1598		1810
Grp Volume(v), veh/h	273	0	0	98	0	175		317	1188	165		71
Grp Sat Flow(s),veh/h/ln	1924	0	0	1129	0	1833		1810	1752	1598		1810
Q Serve(g_s), s	5.7	0.0	0.0	4.3	0.0	11.1		21.0	26.9	6.0		5.0
Cycle Q Clear(g_c), s	17.3	0.0	0.0	21.5	0.0	11.1		21.0	26.9	6.0		5.0
Prop In Lane	0.06		0.00	1.00		0.15		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	397	0	0	180	0	351		292	2091	953		92
V/C Ratio(X)	0.69	0.00	0.00	0.55	0.00	0.50		1.08	0.57	0.17		0.78
Avail Cap(c_a), veh/h	589	0	0	294	0	536		292	2091	953		292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	49.4	0.0	0.0	53.2	0.0	47.0		54.5	16.0	11.8		61.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.0	0.0	0.4		77.0	1.1	0.4		5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	14.4	0.0	0.0	6.3	0.0	9.6		30.1	19.2	5.0		4.8
LnGrp Delay(d),s/veh	50.2	0.0	0.0	54.2	0.0	47.4		131.5	17.1	12.2		66.2
LnGrp LOS	D			D		D		F	B	B		E
Approach Vol, veh/h		273			273				1670			
Approach Delay, s/veh		50.2			49.8				38.4			
Approach LOS		D			D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	85.6		31.9	27.0	71.1		31.9				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	21.0	50.0		38.0	21.0	50.0		38.0				
Max Q Clear Time (g_c+I1), s	7.0	28.9		19.3	23.0	51.5		23.5				
Green Ext Time (p_c), s	0.1	13.1		1.4	0.0	0.0		1.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			39.8									
HCM 2010 LOS			D									
<b>Notes</b>												



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1358	18
Future Volume (veh/h)	1358	18
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1864
Adj Flow Rate, veh/h	1476	20
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	4	6
Cap, veh/h	1686	769
Arrive On Green	0.49	0.49
Sat Flow, veh/h	3471	1583
Grp Volume(v), veh/h	1476	20
Grp Sat Flow(s),veh/h/ln	1736	1583
Q Serve(g_s), s	49.5	0.9
Cycle Q Clear(g_c), s	49.5	0.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1686	769
V/C Ratio(X)	0.88	0.03
Avail Cap(c_a), veh/h	1686	769
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	29.9	17.4
Incr Delay (d2), s/veh	6.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.4	0.7
LnGrp Delay(d),s/veh	36.6	17.5
LnGrp LOS	D	B
Approach Vol, veh/h	1567	
Approach Delay, s/veh	37.7	
Approach LOS	D	
Timer		

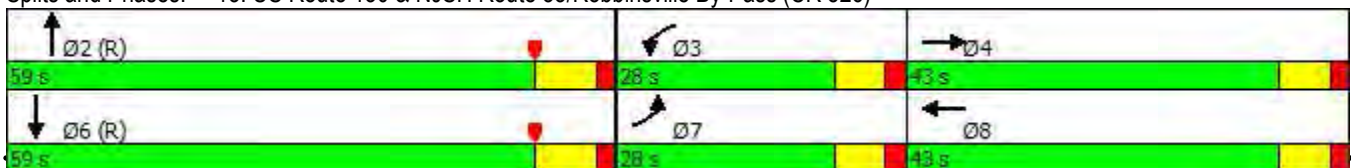




















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↗	↑↓	↖	↑↓	↑↑↓	↑↑↓
Traffic Volume (vph)	480	554	77	544	1123	1393
Future Volume (vph)	480	554	77	544	1123	1393
Lane Group Flow (vph)	527	677	85	668	1244	2015
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	51.0	51.0
Minimum Split (s)	14.0	14.0	14.0	14.0	59.0	59.0
Total Split (s)	28.0	43.0	28.0	43.0	59.0	59.0
Total Split (%)	21.5%	33.1%	21.5%	33.1%	45.4%	45.4%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.94	0.64	0.58	0.85	0.56	0.92
Control Delay	77.6	42.4	72.1	58.0	20.7	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	42.4	72.1	58.0	20.7	41.6
Queue Length 50th (ft)	227	264	70	281	397	563
Queue Length 95th (ft)	m#329	m324	123	333	m438	#750
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	565	1054	277	962	2234	2181
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	0.93	0.64	0.31	0.69	0.56	0.92

**Intersection Summary**

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	554	62	77	544	64	0	1123	9	0	1393	440
Future Volume (veh/h)	480	554	62	77	544	64	0	1123	9	0	1393	440
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1872	1900	1810	1846	1900	0	1844	1900	0	1831	1900
Adj Flow Rate, veh/h	527	609	68	85	598	0	0	1234	10	0	1531	484
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	1	1	5	2	2	0	3	3	0	4	4
Cap, veh/h	567	937	104	106	668	0	0	2466	20	0	1809	564
Arrive On Green	0.16	0.29	0.29	0.06	0.19	0.00	0.00	0.48	0.48	0.00	0.48	0.48
Sat Flow, veh/h	3510	3227	360	1723	3599	0	0	5316	42	0	3944	1177
Grp Volume(v), veh/h	527	335	342	85	598	0	0	804	440	0	1348	667
Grp Sat Flow(s),veh/h/ln	1755	1778	1808	1723	1753	0	0	1678	1836	0	1666	1623
Q Serve(g_s), s	19.3	21.4	21.5	6.3	21.6	0.0	0.0	21.4	21.4	0.0	46.0	47.3
Cycle Q Clear(g_c), s	19.3	21.4	21.5	6.3	21.6	0.0	0.0	21.4	21.4	0.0	46.0	47.3
Prop In Lane	1.00		0.20	1.00		0.00	0.00		0.02	0.00		0.73
Lane Grp Cap(c), veh/h	567	516	525	106	668	0	0	1607	879	0	1596	777
V/C Ratio(X)	0.93	0.65	0.65	0.80	0.90	0.00	0.00	0.50	0.50	0.00	0.84	0.86
Avail Cap(c_a), veh/h	567	516	525	278	971	0	0	1607	879	0	1596	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	40.4	40.4	60.2	51.4	0.0	0.0	23.2	23.2	0.0	29.6	30.0
Incr Delay (d2), s/veh	21.6	2.3	2.3	5.1	6.0	0.0	0.0	1.1	2.0	0.0	5.7	11.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.5	16.2	16.5	5.7	16.5	0.0	0.0	15.3	16.8	0.0	30.2	31.7
LnGrp Delay(d),s/veh	75.4	42.6	42.6	65.3	57.4	0.0	0.0	24.3	25.3	0.0	35.3	41.8
LnGrp LOS	E	D	D	E	E			C	C		D	D
Approach Vol, veh/h		1204			683			1244			2015	
Approach Delay, s/veh		57.0			58.4			24.7			37.5	
Approach LOS		E			E			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		70.2	15.0	44.7		70.2	28.0	31.8				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		51.0	21.0	36.0		51.0	21.0	36.0				
Max Q Clear Time (g_c+I1), s		23.4	8.3	23.5		49.3	21.3	23.6				
Green Ext Time (p_c), s		17.6	0.1	2.4		1.6	0.0	1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			41.7									
HCM 2010 LOS			D									

Intersection						
Int Delay, s/veh	5.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖		↗	
Traffic Vol, veh/h	0	47	447	0	608	1
Future Vol, veh/h	0	47	447	0	608	1
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	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	51	486	0	661	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	661	662	-	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	462	927	0	-	-
Stage 1	0	-	-	0	-	-
Stage 2	0	-	-	0	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	-	462	927	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	13.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	EBLn1	SBT	SBR
Capacity (veh/h)	927	462	-	-
HCM Lane V/C Ratio	0.524	0.111	-	-
HCM Control Delay (s)	13.1	13.8	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	3.1	0.4	-	-

17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 No Build Conditions  
 SAT Peak

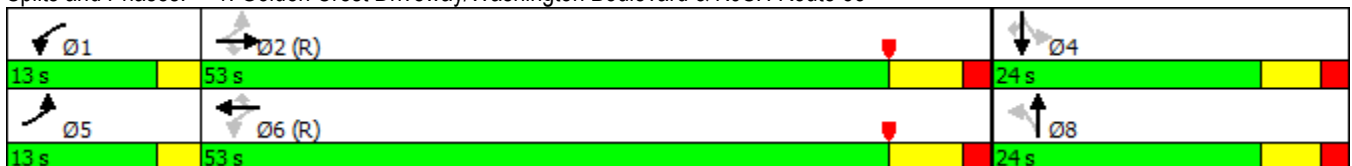


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	185	663	18	41	613	82	22	31	102	27	196
Future Volume (vph)	185	663	18	41	613	82	22	31	102	27	196
Lane Group Flow (vph)	189	677	18	42	626	84	22	81	0	132	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.38	0.55	0.02	0.09	0.59	0.09	0.12	0.27		0.67	0.49
Control Delay	5.8	12.3	0.0	7.2	23.9	9.4	32.7	17.8		52.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	5.8	12.3	0.0	7.2	23.9	9.4	32.7	17.8		52.4	9.1
Queue Length 50th (ft)	24	208	0	8	315	10	11	16		72	0
Queue Length 95th (ft)	53	369	0	m25	444	49	31	53		125	55
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	535	1240	1185	575	1069	952	253	396		272	493
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	0.35	0.55	0.02	0.07	0.59	0.09	0.09	0.20		0.49	0.41

Intersection Summary

























Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33



17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 No Build Conditions  
 SAT Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	663	18	41	613	82	22	31	48	102	27	196
Future Volume (veh/h)	185	663	18	41	613	82	22	31	48	102	27	196
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1900	1976	1845	1863	1881	1900	1976	1900	1900	1900	1976
Adj Flow Rate, veh/h	189	677	18	42	626	84	22	32	49	104	28	200
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	0	3	2	1	0	0	0	0	0	0
Cap, veh/h	439	1179	1042	447	1108	951	134	117	179	213	50	278
Arrive On Green	0.06	0.62	0.62	0.02	0.40	0.40	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1792	1900	1680	1757	1863	1599	1171	705	1080	856	299	1680
Grp Volume(v), veh/h	189	677	18	42	626	84	22	0	81	132	0	200
Grp Sat Flow(s),veh/h/ln	1792	1900	1680	1757	1863	1599	1171	0	1785	1155	0	1680
Q Serve(g_s), s	3.5	18.9	0.4	0.8	23.5	2.9	1.6	0.0	3.6	7.2	0.0	10.1
Cycle Q Clear(g_c), s	3.5	18.9	0.4	0.8	23.5	2.9	12.4	0.0	3.6	10.8	0.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	0.79		1.00
Lane Grp Cap(c), veh/h	439	1179	1042	447	1108	951	134	0	296	263	0	278
V/C Ratio(X)	0.43	0.57	0.02	0.09	0.57	0.09	0.16	0.00	0.27	0.50	0.00	0.72
Avail Cap(c_a), veh/h	527	1179	1042	578	1108	951	174	0	357	312	0	336
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	10.1	6.6	8.0	18.0	11.9	41.7	0.0	32.8	36.9	0.0	35.6
Incr Delay (d2), s/veh	0.2	2.0	0.0	0.0	1.8	0.2	0.2	0.0	0.2	0.6	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	15.7	0.3	0.7	18.0	2.4	1.0	0.0	3.2	5.7	0.0	8.7
LnGrp Delay(d),s/veh	10.3	12.1	6.6	8.0	19.8	12.0	42.0	0.0	33.0	37.5	0.0	39.6
LnGrp LOS	B	B	A	A	B	B	D		C	D		D
Approach Vol, veh/h		884			752			103			332	
Approach Delay, s/veh		11.6			18.3			34.9			38.8	
Approach LOS		B			B			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	62.8		20.9	8.6	60.5		20.9				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	2.8	20.9		12.8	5.5	25.5		14.4				
Green Ext Time (p_c), s	0.0	5.7		0.7	0.1	5.5		0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			19.6									
HCM 2010 LOS			B									

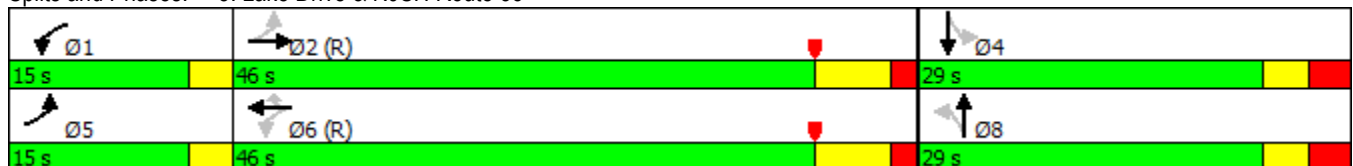























Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗
Traffic Volume (vph)	39	774	1	719	22	1	1	21	1
Future Volume (vph)	39	774	1	719	22	1	1	21	1
Lane Group Flow (vph)	41	816	1	757	23	1	3	22	19
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.07	0.51	0.00	0.50	0.02	0.01	0.02	0.15	0.13
Control Delay	0.5	4.6	2.0	7.2	0.0	38.0	30.3	41.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.5	4.6	2.0	7.2	0.0	38.0	30.3	41.0	19.6
Queue Length 50th (ft)	1	257	0	195	0	1	1	12	1
Queue Length 95th (ft)	m0	468	1	313	0	5	9	35	22
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	657	1604	657	1507	1320	441	453	456	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.51	0.00	0.50	0.02	0.00	0.01	0.05	0.04

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lake Drive & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	774	1	1	719	22	1	1	2	21	1	17
Future Volume (veh/h)	39	774	1	1	719	22	1	1	2	21	1	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1900	1900	1976	1900	1976	1976	1900
Adj Flow Rate, veh/h	41	815	1	1	757	23	1	1	2	22	1	18
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	533	1458	2	582	1367	1186	139	31	62	156	5	84
Arrive On Green	0.05	1.00	1.00	0.00	0.73	0.73	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1810	1897	2	1810	1863	1615	1416	589	1179	1494	89	1604
Grp Volume(v), veh/h	41	0	816	1	757	23	1	0	3	22	0	19
Grp Sat Flow(s),veh/h/ln	1810	0	1900	1810	1863	1615	1416	0	1768	1494	0	1693
Q Serve(g_s), s	0.4	0.0	0.0	0.0	16.4	0.3	0.1	0.0	0.1	1.3	0.0	1.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.0	16.4	0.3	1.0	0.0	0.1	1.4	0.0	1.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.67	1.00		0.95
Lane Grp Cap(c), veh/h	533	0	1459	582	1367	1186	139	0	93	156	0	89
V/C Ratio(X)	0.08	0.00	0.56	0.00	0.55	0.02	0.01	0.00	0.03	0.14	0.00	0.21
Avail Cap(c_a), veh/h	710	0	1459	821	1367	1186	427	0	452	459	0	433
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.00	0.82	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	3.2	5.4	3.2	41.3	0.0	40.5	41.1	0.0	40.9
Incr Delay (d2), s/veh	0.0	0.0	1.3	0.0	1.6	0.0	0.0	0.0	0.1	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.9	0.0	13.7	0.3	0.0	0.0	0.1	1.0	0.0	0.8
LnGrp Delay(d),s/veh	4.0	0.0	1.3	3.2	7.0	3.3	41.4	0.0	40.5	41.3	0.0	41.3
LnGrp LOS	A		A	A	A	A	D		D	D		D
Approach Vol, veh/h		857			781			4				41
Approach Delay, s/veh		1.4			6.9			40.7				41.3
Approach LOS		A			A			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.1	76.1		10.7	6.2	73.1		10.7				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.0	2.0		3.4	2.4	18.4		3.0				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	7.3		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			5.0									
HCM 2010 LOS			A									



Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	750	694	53	0	48
Future Vol, veh/h	47	750	694	53	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	2	0	2
Mvmt Flow	49	781	723	55	0	50

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	778	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	3.318
Pot Cap-1 Maneuver	848	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	848	-	411
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	848	-	-	-	411
HCM Lane V/C Ratio	0.058	-	-	-	0.122
HCM Control Delay (s)	9.5	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4



Lane Group	EBL	EBT	EBR	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	64	348	339	414	200	183	158	243	89
Future Volume (vph)	64	348	339	414	200	183	158	243	89
Lane Group Flow (vph)	68	370	361	440	213	458	168	259	95
Turn Type	Prot	NA	pm+ov	NA	Perm	NA	Split	NA	Prot
Protected Phases	5	2	8	6		8	4	4	4
Permitted Phases			2		6				
Detector Phase	5	2	8	6	6	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	20.0	7.0	10.0	10.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	34.0	19.0	22.0	22.0	19.0	17.0	17.0	17.0
Total Split (s)	13.0	54.0	36.0	41.0	41.0	36.0	34.0	34.0	34.0
Total Split (%)	10.5%	43.5%	29.0%	33.1%	33.1%	29.0%	27.4%	27.4%	27.4%
Yellow Time (s)	3.0	5.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
All-Red Time (s)	2.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	11.0	12.0	11.0	11.0	12.0	10.0	10.0	10.0
Lead/Lag	Lead			Lag	Lag				
Lead-Lag Optimize?	Yes			Yes	Yes				
Recall Mode	None	Min	None	Min	Min	None	None	None	None
v/c Ratio	0.61	0.57	0.32	0.93	0.35	1.14	0.56	0.83	0.21
Control Delay	78.3	36.0	5.3	71.2	6.9	130.9	52.7	69.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	36.0	5.3	71.2	6.9	130.9	52.7	69.7	1.0
Queue Length 50th (ft)	53	232	50	343	1	~432	121	197	0
Queue Length 95th (ft)	#115	340	101	#567	63	#656	194	#299	0
Internal Link Dist (ft)		523		1238		1506		456	
Turn Bay Length (ft)	305						200		
Base Capacity (vph)	123	700	1128	474	604	403	367	379	507
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.53	0.32	0.93	0.35	1.14	0.46	0.68	0.19

Intersection Summary

Cycle Length: 124

Actuated Cycle Length: 117.4

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

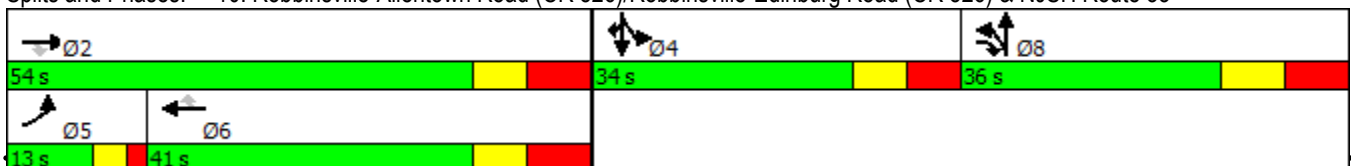
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

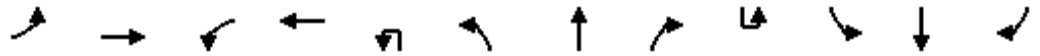
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Robbinsville-Allentown Road (CR 526)/Robbinsville-Edinburg Road (CR 526) & NJSH Route 33



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	348	339	0	414	200	245	183	2	158	243	89
Future Volume (veh/h)	64	348	339	0	414	200	245	183	2	158	243	89
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1956	0	1845	1937	1900	1967	1900	1881	1845	1900
Adj Flow Rate, veh/h	68	370	361	0	440	213	261	195	2	168	259	95
Adj No. of Lanes	1	1	1	0	1	1	0	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	3	2	1	1	1	1	3	0
Cap, veh/h	88	662	924	0	474	423	226	169	2	286	295	258
Arrive On Green	0.05	0.35	0.35	0.00	0.26	0.26	0.21	0.21	0.21	0.16	0.16	0.16
Sat Flow, veh/h	1810	1900	1663	0	1845	1647	1089	814	8	1792	1845	1615
Grp Volume(v), veh/h	68	370	361	0	440	213	458	0	0	168	259	95
Grp Sat Flow(s),veh/h/ln	1810	1900	1663	0	1845	1647	1912	0	0	1792	1845	1615
Q Serve(g_s), s	4.3	18.3	14.3	0.0	27.0	12.8	24.0	0.0	0.0	10.1	15.9	6.1
Cycle Q Clear(g_c), s	4.3	18.3	14.3	0.0	27.0	12.8	24.0	0.0	0.0	10.1	15.9	6.1
Prop In Lane	1.00		1.00	0.00		1.00	0.57		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	88	662	924	0	474	423	396	0	0	286	295	258
V/C Ratio(X)	0.78	0.56	0.39	0.00	0.93	0.50	1.16	0.00	0.00	0.59	0.88	0.37
Avail Cap(c_a), veh/h	125	705	962	0	478	426	396	0	0	371	382	334
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	30.6	14.6	0.0	42.0	36.8	45.9	0.0	0.0	45.1	47.6	43.5
Incr Delay (d2), s/veh	10.5	1.2	0.4	0.0	24.9	1.3	95.4	0.0	0.0	0.7	14.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	14.9	14.8	0.0	23.7	10.0	41.4	0.0	0.0	8.7	14.3	5.0
LnGrp Delay(d),s/veh	65.0	31.7	15.0	0.0	67.0	38.1	141.3	0.0	0.0	45.8	61.8	43.8
LnGrp LOS	E	C	B		E	D	F			D	E	D
Approach Vol, veh/h		799			653			458			522	
Approach Delay, s/veh		27.0			57.6			141.3			53.4	
Approach LOS		C			E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		51.4		28.5	10.6	40.7		36.0				
Change Period (Y+Rc), s		11.0		10.0	5.0	11.0		12.0				
Max Green Setting (Gmax), s		43.0		24.0	8.0	30.0		24.0				
Max Q Clear Time (g_c+I1), s		20.3		17.9	6.3	29.0		26.0				
Green Ext Time (p_c), s		9.2		0.6	0.0	0.8		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			62.4									
HCM 2010 LOS			E									

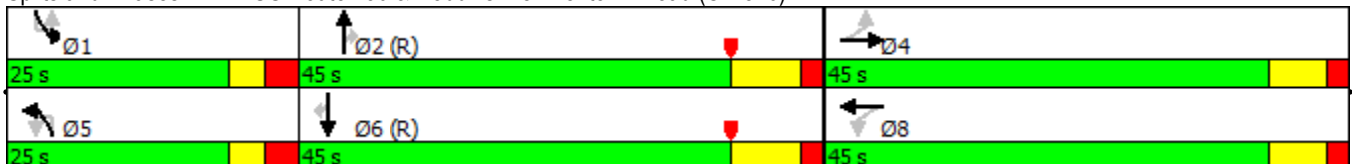





















Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕	↗	↘		↗	↑↑	↗		↗	↑↑	↗
Traffic Volume (vph)	10	163	79	109	1	299	743	97	3	56	875	23
Future Volume (vph)	10	163	79	109	1	299	743	97	3	56	875	23
Lane Group Flow (vph)	0	593	81	124	0	306	758	99	0	60	893	23
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm
Protected Phases		4		8		5	2			1	6	
Permitted Phases	4		8		5			2	1			6
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	37.0	37.0	5.0	5.0	37.0	37.0
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	45.0	45.0	11.0	11.0	45.0	45.0
Total Split (s)	45.0	45.0	45.0	45.0	25.0	25.0	45.0	45.0	25.0	25.0	45.0	45.0
Total Split (%)	39.1%	39.1%	39.1%	39.1%	21.7%	21.7%	39.1%	39.1%	21.7%	21.7%	39.1%	39.1%
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0	7.0		6.0	8.0	8.0		6.0	8.0	8.0
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max
v/c Ratio		0.94	0.76	0.22		4.86	0.65	0.17		0.95	0.82	0.04
Control Delay		54.7	78.3	28.8		1789.7	36.0	6.2		148.2	38.8	1.4
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		54.7	78.3	28.8		1789.7	36.0	6.2		148.2	38.8	1.4
Queue Length 50th (ft)		346	52	63		~429	256	0		47	172	0
Queue Length 95th (ft)		#547	#138	109		#582	327	38		#139	311	m3
Internal Link Dist (ft)		1506		507			493				460	
Turn Bay Length (ft)			105			275		275		300		120
Base Capacity (vph)		685	116	621		63	1160	582		64	1090	618
Starvation Cap Reductn		0	0	0		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0		0	0	0
Reduced v/c Ratio		0.87	0.70	0.20		4.86	0.65	0.17		0.94	0.82	0.04

Intersection Summary

- Cycle Length: 115
- Actuated Cycle Length: 115
- Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection
- Natural Cycle: 70
- Control Type: Actuated-Coordinated
- ~ 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.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	10	163	409	79	109	13	1	299	743	97	3	56
Future Volume (veh/h)	10	163	409	79	109	13	1	299	743	97	3	56
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1943	1900	1881	1900	1900		1881	1845	1881		1900
Adj Flow Rate, veh/h	10	166	0	81	111	13		305	758	99		57
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98		0.98	0.98	0.98		0.98
Percent Heavy Veh, %	1	1	1	1	0	0		1	3	1		0
Cap, veh/h	40	237	0	173	212	25		296	2275	1037		74
Arrive On Green	0.13	0.13	0.00	0.13	0.13	0.13		0.17	0.65	0.65		0.04
Sat Flow, veh/h	52	1867	0	1227	1670	196		1792	3505	1598		1810
Grp Volume(v), veh/h	176	0	0	81	0	124		305	758	99		57
Grp Sat Flow(s),veh/h/ln	1919	0	0	1227	0	1865		1792	1752	1598		1810
Q Serve(g_s), s	2.5	0.0	0.0	1.6	0.0	7.1		19.0	11.1	2.7		3.6
Cycle Q Clear(g_c), s	10.1	0.0	0.0	11.7	0.0	7.1		19.0	11.1	2.7		3.6
Prop In Lane	0.06		0.00	1.00		0.10		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	277	0	0	173	0	237		296	2275	1037		74
V/C Ratio(X)	0.64	0.00	0.00	0.47	0.00	0.52		1.03	0.33	0.10		0.77
Avail Cap(c_a), veh/h	662	0	0	423	0	616		296	2275	1037		299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	0.83	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	48.2	0.0	0.0	49.4	0.0	46.9		48.0	9.0	7.5		54.6
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.7	0.0	0.7		60.4	0.4	0.2		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	8.9	0.0	0.0	4.6	0.0	6.7		25.8	9.3	2.2		3.4
LnGrp Delay(d),s/veh	48.9	0.0	0.0	50.1	0.0	47.6		108.4	9.4	7.7		60.6
LnGrp LOS	D			D		D		F	A	A		E
Approach Vol, veh/h		176			205				1162			
Approach Delay, s/veh		48.9			48.6				35.3			
Approach LOS		D			D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	82.7		21.6	25.0	68.4		21.6				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	19.0	37.0		38.0	19.0	37.0		38.0				
Max Q Clear Time (g_c+I1), s	5.6	13.1		12.1	21.0	20.7		13.7				
Green Ext Time (p_c), s	0.1	7.3		1.0	0.0	6.4		1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.7								
HCM 2010 LOS				C								
<b>Notes</b>												

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	875	23
Future Volume (veh/h)	875	23
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1976
Adj Flow Rate, veh/h	893	23
Adj No. of Lanes	2	1
Peak Hour Factor	0.98	0.98
Percent Heavy Veh, %	3	0
Cap, veh/h	1841	881
Arrive On Green	0.53	0.53
Sat Flow, veh/h	3505	1678
Grp Volume(v), veh/h	893	23
Grp Sat Flow(s),veh/h/ln	1752	1678
Q Serve(g_s), s	18.7	0.8
Cycle Q Clear(g_c), s	18.7	0.8
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1841	881
V/C Ratio(X)	0.49	0.03
Avail Cap(c_a), veh/h	1841	881
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	17.4	13.1
Incr Delay (d2), s/veh	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.3	0.7
LnGrp Delay(d),s/veh	18.3	13.2
LnGrp LOS	B	B
Approach Vol, veh/h	973	
Approach Delay, s/veh	20.7	
Approach LOS	C	
Timer		

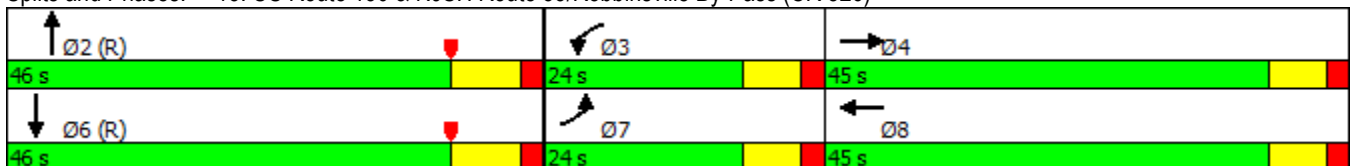


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↖	↗↗	↖	↗↗	↗↗↗	↗↗↗
Traffic Volume (vph)	316	195	69	317	759	891
Future Volume (vph)	316	195	69	317	759	891
Lane Group Flow (vph)	333	251	73	410	810	1251
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	38.0	38.0
Minimum Split (s)	14.0	14.0	14.0	14.0	46.0	46.0
Total Split (s)	24.0	45.0	24.0	45.0	46.0	46.0
Total Split (%)	20.9%	39.1%	20.9%	39.1%	40.0%	40.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.74	0.33	0.52	0.74	0.31	0.48
Control Delay	57.4	39.4	62.4	52.0	1.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	39.4	62.4	52.0	1.9	17.6
Queue Length 50th (ft)	123	85	53	145	6	195
Queue Length 95th (ft)	170	123	99	190	m24	265
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	512	1146	240	1157	2643	2608
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	0.65	0.22	0.30	0.35	0.31	0.48

**Intersection Summary**



















Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 32 (28%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)**



17004213G - Washington Town Center  
 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)

2019 No Build Conditions  
 SAT Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	195	44	69	317	72	0	759	10	0	891	297
Future Volume (veh/h)	316	195	44	69	317	72	0	759	10	0	891	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1878	1900	1712	1870	1900	0	1845	1900	0	1863	1900
Adj Flow Rate, veh/h	333	205	46	73	334	0	0	799	11	0	938	313
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	11	2	2	0	3	3	0	2	2
Cap, veh/h	397	515	113	91	422	0	0	2948	41	0	2173	724
Arrive On Green	0.11	0.18	0.18	0.06	0.12	0.00	0.00	0.58	0.58	0.00	0.58	0.58
Sat Flow, veh/h	3476	2909	640	1630	3646	0	0	5287	70	0	3942	1257
Grp Volume(v), veh/h	333	124	127	73	334	0	0	524	286	0	842	409
Grp Sat Flow(s),veh/h/ln	1738	1784	1765	1630	1776	0	0	1679	1833	0	1695	1641
Q Serve(g_s), s	10.8	7.1	7.3	5.1	10.5	0.0	0.0	9.0	9.0	0.0	16.1	16.2
Cycle Q Clear(g_c), s	10.8	7.1	7.3	5.1	10.5	0.0	0.0	9.0	9.0	0.0	16.1	16.2
Prop In Lane	1.00		0.36	1.00		0.00	0.00		0.04	0.00		0.77
Lane Grp Cap(c), veh/h	397	316	312	91	422	0	0	1934	1055	0	1952	945
V/C Ratio(X)	0.84	0.39	0.41	0.80	0.79	0.00	0.00	0.27	0.27	0.00	0.43	0.43
Avail Cap(c_a), veh/h	514	589	583	241	1174	0	0	1934	1055	0	1952	945
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	41.9	42.0	53.6	49.3	0.0	0.0	12.3	12.3	0.0	13.8	13.8
Incr Delay (d2), s/veh	7.6	0.3	0.3	5.9	1.3	0.0	0.0	0.3	0.6	0.0	0.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.5	6.3	6.5	4.4	9.0	0.0	0.0	7.6	8.3	0.0	12.2	12.2
LnGrp Delay(d),s/veh	57.5	42.2	42.3	59.5	50.6	0.0	0.0	12.6	12.9	0.0	14.5	15.2
LnGrp LOS	E	D	D	E	D			B	B		B	B
Approach Vol, veh/h		584			407			810			1251	
Approach Delay, s/veh		50.9			52.2			12.7			14.7	
Approach LOS		D			D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		74.2	13.5	27.3		74.2	20.1	20.7				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		38.0	17.0	38.0		38.0	17.0	38.0				
Max Q Clear Time (g_c+I1), s		11.0	7.1	9.3		18.2	12.8	12.5				
Green Ext Time (p_c), s		9.2	0.1	1.2		8.2	0.3	1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.1									
HCM 2010 LOS			C									



17004213G - Washington Town Center  
 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33

2019 Build Conditions  
 SAT Peak

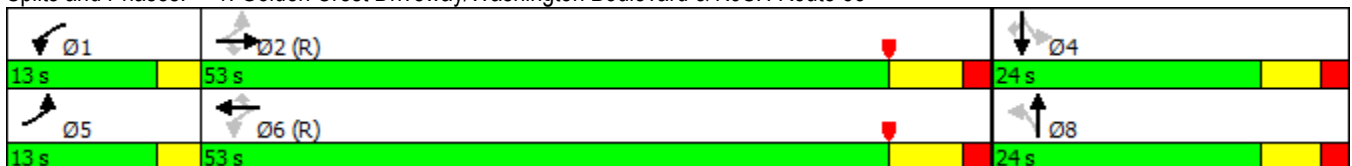


























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	185	751	18	41	689	97	22	31	120	27	196
Future Volume (vph)	185	751	18	41	689	97	22	31	120	27	196
Lane Group Flow (vph)	189	766	18	42	703	99	22	81	0	150	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	46.0	46.0	5.0	46.0	46.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	53.0	53.0	8.0	53.0	53.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	14.4%	58.9%	58.9%	14.4%	58.9%	58.9%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	3.0	7.0	7.0	3.0	7.0	7.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.43	0.63	0.02	0.10	0.67	0.11	0.12	0.26		0.72	0.47
Control Delay	7.0	14.5	0.0	7.5	27.3	9.3	32.2	17.3		54.7	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	7.0	14.5	0.0	7.5	27.3	9.3	32.2	17.3		54.7	8.7
Queue Length 50th (ft)	26	265	0	10	349	9	11	16		82	0
Queue Length 95th (ft)	53	452	0	m20	550	m56	31	53		140	55
Internal Link Dist (ft)		703			916			234		372	
Turn Bay Length (ft)	270		545	230		300	60				95
Base Capacity (vph)	468	1220	1167	497	1048	941	234	396		270	493
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	0.40	0.63	0.02	0.08	0.67	0.11	0.09	0.20		0.56	0.41

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Golden Crest Driveway/Washington Boulevard & NJSH Route 33



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	751	18	41	689	97	22	31	48	120	27	196
Future Volume (veh/h)	185	751	18	41	689	97	22	31	48	120	27	196
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1900	1976	1845	1863	1881	1900	1976	1900	1900	1900	1976
Adj Flow Rate, veh/h	189	766	18	42	703	99	22	32	49	122	28	200
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	0	3	2	1	0	0	0	0	0	0
Cap, veh/h	377	1151	1018	375	1078	925	132	127	195	235	43	303
Arrive On Green	0.06	0.61	0.61	0.02	0.39	0.39	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1792	1900	1680	1757	1863	1599	1171	705	1080	903	240	1680
Grp Volume(v), veh/h	189	766	18	42	703	99	22	0	81	150	0	200
Grp Sat Flow(s),veh/h/ln	1792	1900	1680	1757	1863	1599	1171	0	1785	1143	0	1680
Q Serve(g_s), s	3.6	24.0	0.4	0.9	27.8	3.6	1.6	0.0	3.5	8.7	0.0	10.0
Cycle Q Clear(g_c), s	3.6	24.0	0.4	0.9	27.8	3.6	13.9	0.0	3.5	12.2	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	0.81		1.00
Lane Grp Cap(c), veh/h	377	1151	1018	375	1078	925	132	0	322	279	0	303
V/C Ratio(X)	0.50	0.67	0.02	0.11	0.65	0.11	0.17	0.00	0.25	0.54	0.00	0.66
Avail Cap(c_a), veh/h	463	1151	1018	506	1078	925	155	0	357	306	0	336
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.5	11.7	7.1	9.7	20.1	12.7	41.9	0.0	31.7	36.6	0.0	34.3
Incr Delay (d2), s/veh	0.4	3.0	0.0	0.0	2.5	0.2	0.2	0.0	0.2	0.6	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	19.3	0.3	0.7	20.8	2.9	1.0	0.0	3.1	6.5	0.0	8.5
LnGrp Delay(d),s/veh	12.9	14.8	7.1	9.7	22.6	12.9	42.1	0.0	31.8	37.2	0.0	37.2
LnGrp LOS	B	B	A	A	C	B	D		C	D		D
Approach Vol, veh/h		973			844			103			350	
Approach Delay, s/veh		14.3			20.8			34.0			37.2	
Approach LOS		B			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	61.5		22.2	8.7	59.1		22.2				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	10.0	46.0		18.0	10.0	46.0		18.0				
Max Q Clear Time (g_c+I1), s	2.9	26.0		14.2	5.6	29.8		15.9				
Green Ext Time (p_c), s	0.0	6.5		0.5	0.1	6.0		0.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			21.1									
HCM 2010 LOS			C									



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↗	↙	↗	↗	↙	↗	↙	↗
Traffic Volume (vph)	39	822	18	746	22	64	1	21	1
Future Volume (vph)	39	822	18	746	22	64	1	21	1
Lane Group Flow (vph)	41	927	19	785	23	67	24	22	19
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2	1	6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	1	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	39.0	5.0	39.0	39.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	46.0	8.0	46.0	46.0	13.0	13.0	13.0	13.0
Total Split (s)	15.0	46.0	15.0	46.0	46.0	29.0	29.0	29.0	29.0
Total Split (%)	16.7%	51.1%	16.7%	51.1%	51.1%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0	3.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None
v/c Ratio	0.08	0.65	0.05	0.57	0.02	0.46	0.12	0.15	0.10
Control Delay	1.2	11.1	2.6	10.3	0.0	47.6	16.2	37.6	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	11.1	2.6	10.3	0.0	47.6	16.2	37.6	17.1
Queue Length 50th (ft)	1	335	2	225	0	37	1	12	1
Queue Length 95th (ft)	m1	596	7	405	0	75	23	33	20
Internal Link Dist (ft)		916		1073			87		234
Turn Bay Length (ft)	90		110		90	60		125	
Base Capacity (vph)	592	1423	510	1379	1214	361	446	372	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.65	0.04	0.57	0.02	0.19	0.05	0.06	0.04

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 72 (80%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Lake Drive & NJSH Route 33



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	822	59	18	746	22	64	1	22	21	1	17
Future Volume (veh/h)	39	822	59	18	746	22	64	1	22	21	1	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1863	1900	1900	1976	1900	1976	1976	1900
Adj Flow Rate, veh/h	41	865	62	19	785	23	67	1	23	22	1	18
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	484	1267	91	396	1320	1144	176	6	127	175	7	125
Arrive On Green	0.04	0.72	0.72	0.02	0.71	0.71	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1810	1752	126	1810	1863	1615	1416	70	1620	1465	89	1604
Grp Volume(v), veh/h	41	0	927	19	785	23	67	0	24	22	0	19
Grp Sat Flow(s),veh/h/ln	1810	0	1878	1810	1863	1615	1416	0	1690	1465	0	1693
Q Serve(g_s), s	0.5	0.0	24.3	0.3	19.1	0.4	4.2	0.0	1.2	1.3	0.0	0.9
Cycle Q Clear(g_c), s	0.5	0.0	24.3	0.3	19.1	0.4	5.1	0.0	1.2	2.5	0.0	0.9
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.96	1.00		0.95
Lane Grp Cap(c), veh/h	484	0	1358	396	1320	1144	176	0	132	175	0	132
V/C Ratio(X)	0.08	0.00	0.68	0.05	0.59	0.02	0.38	0.00	0.18	0.13	0.00	0.14
Avail Cap(c_a), veh/h	661	0	1358	599	1320	1144	427	0	432	435	0	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.00	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	0.0	6.8	6.4	6.6	3.9	41.1	0.0	38.8	40.0	0.0	38.7
Incr Delay (d2), s/veh	0.0	0.0	2.1	0.0	2.0	0.0	0.5	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	18.3	0.2	15.6	0.3	3.0	0.0	1.0	0.9	0.0	0.8
LnGrp Delay(d),s/veh	5.2	0.0	8.9	6.4	8.6	3.9	41.6	0.0	39.0	40.1	0.0	38.9
LnGrp LOS	A		A	A	A	A	D		D	D		D
Approach Vol, veh/h		968			827			91			41	
Approach Delay, s/veh		8.7			8.4			40.9			39.5	
Approach LOS		A			A			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	72.1		13.0	6.2	70.8		13.0				
Change Period (Y+Rc), s	3.0	7.0		6.0	3.0	7.0		6.0				
Max Green Setting (Gmax), s	12.0	39.0		23.0	12.0	39.0		23.0				
Max Q Clear Time (g_c+I1), s	2.3	26.3		4.5	2.5	21.1		7.1				
Green Ext Time (p_c), s	0.0	6.5		0.2	0.0	7.9		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			10.8									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	780	38	56	738	53	0	0	48	0	0	48
Future Vol, veh/h	47	780	38	56	738	53	0	0	48	0	0	48
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	125	-	-	75	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	2	2	2	2	2	2	0	2	2
Mvmt Flow	49	813	40	58	769	55	0	0	50	0	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	769	0	0	852	0	0	-	-	832	-	-	769
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.12	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	854	-	-	787	-	-	0	0	369	0	0	401
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	854	-	-	787	-	-	-	-	369	-	-	401
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.7			16.3			15.3		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	854	-	-	787	-	-	401
HCM Lane V/C Ratio	0.136	0.057	-	-	0.074	-	-	0.125
HCM Control Delay (s)	16.3	9.5	-	-	9.9	-	-	15.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0.2	-	-	0.4

17004213G - Washington Town Center  
 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)

2019 Build Conditions  
 SAT Peak

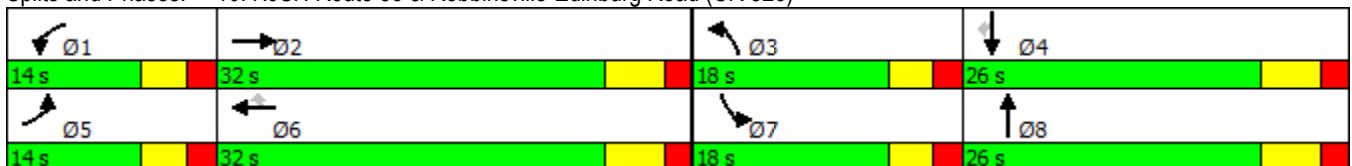


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	64	747	94	478	200	281	213	398	38	89
Future Volume (vph)	64	747	94	478	200	281	213	398	38	89
Lane Group Flow (vph)	68	814	100	509	213	299	310	423	40	95
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	5	2	1	6		3	8	7	4	
Permitted Phases					6					4
Detector Phase	5	2	1	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	13.0	10.0	13.0	13.0	12.0	13.0	12.0	13.0	13.0
Total Split (s)	14.0	32.0	14.0	32.0	32.0	18.0	26.0	18.0	26.0	26.0
Total Split (%)	15.6%	35.6%	15.6%	35.6%	35.6%	20.0%	28.9%	20.0%	28.9%	28.9%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.43	0.72	0.57	0.45	0.30	0.45	0.80	0.83	0.11	0.21
Control Delay	47.1	31.5	52.0	26.0	5.0	36.9	47.5	51.5	28.5	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	31.5	52.0	26.0	5.0	36.9	47.5	51.5	28.5	2.0
Queue Length 50th (ft)	37	222	55	123	0	84	156	122	18	0
Queue Length 95th (ft)	78	292	#114	175	50	125	#276	#198	45	8
Internal Link Dist (ft)		523		59			292		456	
Turn Bay Length (ft)	305					100		200		
Base Capacity (vph)	196	1132	192	1128	705	689	447	545	454	513
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	0.35	0.72	0.52	0.45	0.30	0.43	0.69	0.78	0.09	0.19

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 84.1  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

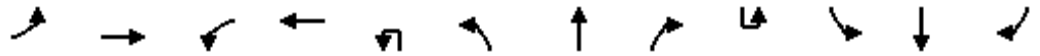
Splits and Phases: 10: NJSH Route 33 & Robbinsville-Edinburg Road (CR 526)





17004213G - Washington Town Center  
 12: US Route 130 & Robbinsville-Allentown Road (CR 526)

2019 Build Conditions  
 SAT Peak

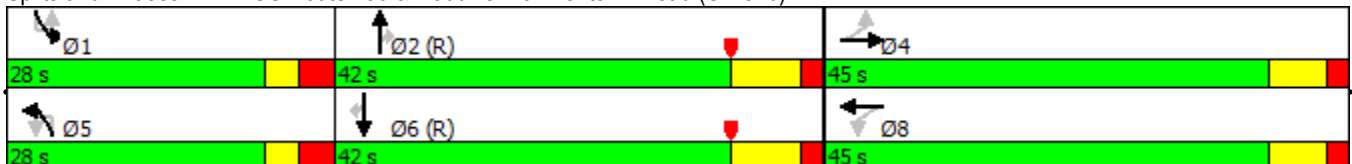


Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Lane Configurations		↕	↗	↘		↗	↑↑	↗		↗	↑↑	↗	
Traffic Volume (vph)	10	178	79	127	1	334	761	97	3	56	890	23	
Future Volume (vph)	10	178	79	127	1	334	761	97	3	56	890	23	
Lane Group Flow (vph)	0	641	81	143	0	342	777	99	0	60	908	23	
Turn Type	Perm	NA	Perm	NA	custom	Prot	NA	Perm	custom	Prot	NA	Perm	
Protected Phases		4		8		5	2			1	6		
Permitted Phases	4		8		5			2	1			6	
Detector Phase	4	4	8	8	5	5	2	2	1	1	6	6	
Switch Phase													
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	34.0	34.0	5.0	5.0	34.0	34.0	
Minimum Split (s)	14.0	14.0	14.0	14.0	11.0	11.0	42.0	42.0	11.0	11.0	42.0	42.0	
Total Split (s)	45.0	45.0	45.0	45.0	28.0	28.0	42.0	42.0	28.0	28.0	42.0	42.0	
Total Split (%)	39.1%	39.1%	39.1%	39.1%	24.3%	24.3%	36.5%	36.5%	24.3%	24.3%	36.5%	36.5%	
Yellow Time (s)	5.0	5.0	5.0	5.0	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0			0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		7.0	7.0	7.0			6.0	8.0		6.0	8.0	8.0	
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	None	C-Max	C-Max	
v/c Ratio		0.96	0.73	0.24			5.52	0.74	0.19		0.95	0.91	0.04
Control Delay		59.3	71.4	28.5			2061.5	41.4	6.8		144.7	52.4	2.1
Queue Delay		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		59.3	71.4	28.5			2061.5	41.4	6.8		144.7	52.4	2.1
Queue Length 50th (ft)		394	52	73			~450	276	0		46	233	0
Queue Length 95th (ft)		#630	#139	125			#637	352	40		m#123	#436	m2
Internal Link Dist (ft)		1165		507				493				460	
Turn Bay Length (ft)			105				275		275		300		120
Base Capacity (vph)		684	115	622			62	1043	534		64	1001	576
Starvation Cap Reductn		0	0	0			0	0	0		0	0	0
Spillback Cap Reductn		0	0	0			0	0	0		0	0	0
Storage Cap Reductn		0	0	0			0	0	0		0	0	0
Reduced v/c Ratio		0.94	0.70	0.23			5.52	0.74	0.19		0.94	0.91	0.04

Intersection Summary

Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 ~ 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.  
 m Volume for 95th percentile queue is metered by upstream signal.




















Splits and Phases: 12: US Route 130 & Robbinsville-Allentown Road (CR 526)





17004213G - Washington Town Center  
 12: US Route 130 & Robbinsville-Allentown Road (CR 526)

2019 Build Conditions  
 SAT Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	10	178	440	79	127	13	1	334	761	97	3	56
Future Volume (veh/h)	10	178	440	79	127	13	1	334	761	97	3	56
Number	7	4	14	3	8	18		5	2	12		1
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1943	1900	1881	1900	1900		1881	1845	1881		1900
Adj Flow Rate, veh/h	10	182	0	81	130	13		341	777	99		57
Adj No. of Lanes	0	1	0	1	1	0		1	2	1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98		0.98	0.98	0.98		0.98
Percent Heavy Veh, %	1	1	1	1	0	0		1	3	1		0
Cap, veh/h	39	254	0	173	231	23		343	2245	1023		75
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.14		0.19	0.64	0.64		0.04
Sat Flow, veh/h	46	1874	0	1209	1700	170		1792	3505	1598		1810
Grp Volume(v), veh/h	192	0	0	81	0	143		341	777	99		57
Grp Sat Flow(s),veh/h/ln	1920	0	0	1209	0	1870		1792	1752	1598		1810
Q Serve(g_s), s	2.7	0.0	0.0	1.6	0.0	8.2		21.9	11.8	2.7		3.6
Cycle Q Clear(g_c), s	11.0	0.0	0.0	12.6	0.0	8.2		21.9	11.8	2.7		3.6
Prop In Lane	0.05		0.00	1.00		0.09		1.00		1.00		1.00
Lane Grp Cap(c), veh/h	294	0	0	173	0	254		343	2245	1023		75
V/C Ratio(X)	0.65	0.00	0.00	0.47	0.00	0.56		0.99	0.35	0.10		0.76
Avail Cap(c_a), veh/h	662	0	0	409	0	618		343	2245	1023		346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	47.7	0.0	0.0	48.9	0.0	46.5		46.4	9.6	7.9		54.6
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.7	0.0	0.7		47.1	0.4	0.2		5.9
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
%ile BackOfQ(95%),veh/ln	9.9	0.0	0.0	4.6	0.0	7.7		21.7	9.7	2.3		3.4
LnGrp Delay(d),s/veh	48.6	0.0	0.0	49.6	0.0	47.2		93.6	10.0	8.1		60.5
LnGrp LOS	D			D		D		F	A	A		E
Approach Vol, veh/h		192			224				1217			
Approach Delay, s/veh		48.6			48.1				33.2			
Approach LOS		D			D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	81.7		22.6	28.0	64.4		22.6				
Change Period (Y+Rc), s	6.0	8.0		7.0	6.0	8.0		7.0				
Max Green Setting (Gmax), s	22.0	34.0		38.0	22.0	34.0		38.0				
Max Q Clear Time (g_c+I1), s	5.6	13.8		13.0	23.9	22.5		14.6				
Green Ext Time (p_c), s	0.1	7.1		1.1	0.0	5.5		1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			31.9									
HCM 2010 LOS			C									
<b>Notes</b>												

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	890	23
Future Volume (veh/h)	890	23
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1976
Adj Flow Rate, veh/h	908	23
Adj No. of Lanes	2	1
Peak Hour Factor	0.98	0.98
Percent Heavy Veh, %	3	0
Cap, veh/h	1719	823
Arrive On Green	0.49	0.49
Sat Flow, veh/h	3505	1678
Grp Volume(v), veh/h	908	23
Grp Sat Flow(s),veh/h/ln	1752	1678
Q Serve(g_s), s	20.5	0.8
Cycle Q Clear(g_c), s	20.5	0.8
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1719	823
V/C Ratio(X)	0.53	0.03
Avail Cap(c_a), veh/h	1719	823
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	20.2	15.1
Incr Delay (d2), s/veh	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.3	0.7
LnGrp Delay(d),s/veh	21.3	15.2
LnGrp LOS	C	B
Approach Vol, veh/h	988	
Approach Delay, s/veh	23.4	
Approach LOS	C	
Timer		

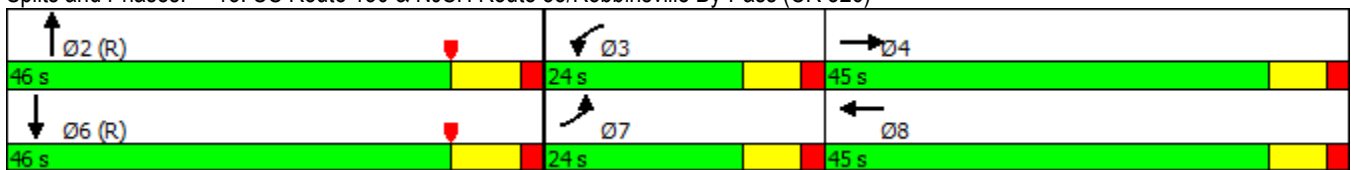




















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Configurations	↖↗	↑↓	↖	↑↓	↑↑↓	↑↑↓
Traffic Volume (vph)	392	240	69	387	777	891
Future Volume (vph)	392	240	69	387	777	891
Lane Group Flow (vph)	413	315	73	483	829	1343
Turn Type	Prot	NA	Prot	NA	NA	NA
Protected Phases	7	4	3	8	2	6
Permitted Phases						
Detector Phase	7	4	3	8	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	38.0	38.0
Minimum Split (s)	14.0	14.0	14.0	14.0	46.0	46.0
Total Split (s)	24.0	45.0	24.0	45.0	46.0	46.0
Total Split (%)	20.9%	39.1%	20.9%	39.1%	40.0%	40.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	6.0	6.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	8.0	8.0
Lead/Lag	Lead	Lag	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max
v/c Ratio	0.84	0.36	0.52	0.77	0.34	0.55
Control Delay	63.4	37.0	62.4	51.7	18.9	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	37.0	62.4	51.7	18.9	20.4
Queue Length 50th (ft)	154	104	53	174	134	230
Queue Length 95th (ft)	#226	146	99	221	182	303
Internal Link Dist (ft)		401		307	160	874
Turn Bay Length (ft)	350		175			
Base Capacity (vph)	512	1143	240	1158	2471	2437
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	0.81	0.28	0.30	0.42	0.34	0.55

**Intersection Summary**

Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 32 (28%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 13: US Route 130 & NJSH Route 33/Robbinsville By-Pass (CR 526)**



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	240	59	69	387	72	0	777	10	0	891	385
Future Volume (veh/h)	392	240	59	69	387	72	0	777	10	0	891	385
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1878	1900	1712	1869	1900	0	1845	1900	0	1863	1900
Adj Flow Rate, veh/h	413	253	62	73	407	0	0	818	11	0	938	405
Adj No. of Lanes	2	2	0	1	2	0	0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	11	2	2	0	3	3	0	2	2
Cap, veh/h	472	630	151	91	501	0	0	2725	37	0	1853	800
Arrive On Green	0.14	0.22	0.22	0.06	0.14	0.00	0.00	0.53	0.53	0.00	0.53	0.53
Sat Flow, veh/h	3476	2854	686	1630	3644	0	0	5289	69	0	3652	1503
Grp Volume(v), veh/h	413	156	159	73	407	0	0	536	293	0	913	430
Grp Sat Flow(s),veh/h/ln	1738	1784	1756	1630	1775	0	0	1679	1833	0	1695	1597
Q Serve(g_s), s	13.4	8.6	8.9	5.1	12.8	0.0	0.0	10.2	10.2	0.0	19.8	19.9
Cycle Q Clear(g_c), s	13.4	8.6	8.9	5.1	12.8	0.0	0.0	10.2	10.2	0.0	19.8	19.9
Prop In Lane	1.00		0.39	1.00		0.00	0.00		0.04	0.00		0.94
Lane Grp Cap(c), veh/h	472	394	388	91	501	0	0	1786	975	0	1803	850
V/C Ratio(X)	0.88	0.40	0.41	0.80	0.81	0.00	0.00	0.30	0.30	0.00	0.51	0.51
Avail Cap(c_a), veh/h	514	589	580	241	1173	0	0	1786	975	0	1803	850
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	38.3	38.4	53.6	47.9	0.0	0.0	15.0	15.0	0.0	17.2	17.2
Incr Delay (d2), s/veh	13.8	0.2	0.3	5.9	1.2	0.0	0.0	0.4	0.8	0.0	1.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.8	7.7	7.8	4.4	10.5	0.0	0.0	8.4	9.1	0.0	14.6	14.2
LnGrp Delay(d),s/veh	62.5	38.5	38.6	59.5	49.1	0.0	0.0	15.4	15.8	0.0	18.3	19.4
LnGrp LOS	E	D	D	E	D			B	B		B	B
Approach Vol, veh/h		728			480			829			1343	
Approach Delay, s/veh		52.2			50.7			15.6			18.6	
Approach LOS		D			D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		69.2	13.5	32.4		69.2	22.6	23.2				
Change Period (Y+Rc), s		8.0	7.0	7.0		8.0	7.0	7.0				
Max Green Setting (Gmax), s		38.0	17.0	38.0		38.0	17.0	38.0				
Max Q Clear Time (g_c+I1), s		12.2	7.1	10.9		21.9	15.4	14.8				
Green Ext Time (p_c), s		9.8	0.1	1.4		8.0	0.2	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.7								
HCM 2010 LOS				C								

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖		↗	
Traffic Vol, veh/h	0	49	483	0	579	1
Future Vol, veh/h	0	49	483	0	579	1
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	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	53	525	0	629	1

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	630	630	-	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-
Pot Cap-1 Maneuver	0	482	952	0	-
Stage 1	0	-	-	0	-
Stage 2	0	-	-	0	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	482	952	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	13.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	EBLn1	SBT	SBR
Capacity (veh/h)	952	482	-	-
HCM Lane V/C Ratio	0.551	0.11	-	-
HCM Control Delay (s)	13.3	13.4	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	3.5	0.4	-	-