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TRAFFIC IMPACT ANALYSIS
for
MAVEN GROUP

Proposed Oakite Site Redevelopment

Block 71, Lots 37.01 & 37.02

700 Middlesex Avenue (CR 501)

Borough of Metuchen

Middlesex County, New Jersey

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EXECUTIVE SUMMARY

Atlantic Traffic & Design Engineering, LLC (ATDE) has prepared this Traffic Impact Analysis for the proposed Oakite Site Redevelopment located at the northwest quadrant of the intersection of Middlesex Avenue (CR 501) and Factory Street in the Borough of Metuchen, Middlesex County, New Jersey. The subject property is currently occupied by a 66,074 square foot SportsPlex to the north and an approximately 3,000 square foot Fulton Bank to the south.

Under the phased redevelopment proposal, a 64-bed Artis assisted living facility, a 158-bed Monarch assisted living facility, a 12,870 square foot daycare facility and a 2,250 square foot coffee shop with drive-thru would be constructed. Please note, the existing 66,074 square foot SportsPlex and 3,000 square foot Fulton Bank would remain under the proposed redevelopment. (The bank is currently vacant but assumed to be reoccupied for the purposes of this analysis.)

Under proposed conditions, access will be provided via 1 full-movement driveway along southbound Middlesex Avenue (CR 501). Additional access will be provided via the existing full-movement driveway along northbound Durham Avenue. The new full-movement access on Middlesex Avenue (CR 501) is proposed to be dedicated to the Borough of Metuchen as a public street, known as Greenwich Parkway. This dedication includes the complete interconnection from Middlesex Avenue (CR 501) to Durham Avenue.

Based on our findings, it was determined that traffic signal timing mitigation is appropriate at the intersections of Middlesex Avenue (NJ Route 27) and Central Avenue (CR 669)/Lake Avenue (NJ Route 27) during the weekday morning peak hour as well as of New Durham Road (CR 501) and Bridge Street/John Street during each of the study peak hours. The timing mitigation considered reallocating up to 6 seconds of green time from the side streets to the main line.

INTRODUCTION

Atlantic Traffic & Design Engineering, LLC (ATDE) has prepared this Traffic Impact Analysis to examine the future traffic impacts of the proposed Oakite Site Redevelopment in the Borough of Metuchen. The subject site is located on the northwest quadrant of the intersection of Middlesex Avenue (CR 501) and Factory Street in the Borough of Metuchen, Middlesex County, New Jersey. Refer to **Figure 1** in the **Appendix** for the Site Location Map.

CURRENT CONDITION

The subject property is currently occupied by a 66,074 square foot SportsPlex facility and an approximately 3,000 square foot Fulton Bank with 3 drive-thru lanes. A full-movement driveway along northbound Durham Avenue which provides access to the SportsPlex. A full-movement driveway and an ingress-only driveway provide access to the Fulton Bank along southbound Middlesex Avenue (CR 501). Currently there is no vehicle connection between the SportsPlex driveway and the Fulton Bank driveways.

PROPOSED CONDITION

The proposed redevelopment plan includes the following:

- 64-bed Artis Assisted Living facility
- 158-bed Monarch Assisted Living facility
- 12,870 square foot daycare
- A 2,250 square foot coffee shop with drive-thru

The 66,074 square foot SportsPlex facility and the approximately 3,000 square foot Fulton Bank on the property will remain under proposed conditions.

The existing driveway along Durham Avenue and the ingress-only driveway along Middlesex Avenue (CR 501) will be maintained. The full-movement driveway along Middlesex Avenue (CR 501) is proposed to be modified to provide designated left and right turn lanes. The new full-movement access

on Middlesex Avenue (CR 501) is proposed to be dedicated to the Borough of Metuchen as a public street, known as Greenwich Parkway. This dedication includes the complete interconnection from Middlesex Avenue (CR 501) to Durham Avenue.

SCOPE OF STUDY

This study has been performed to evaluate potential traffic impacts associated with the proposed Oakite Site Redevelopment. Accordingly, this analysis includes the following:

- A review of existing roadway and traffic conditions in the vicinity of the site, including roadway geometrics and traffic volumes;
- Projection of the volume of traffic expected to be generated by the proposed redevelopment;
- An analysis of future roadway operations through Level of Service calculations;
- A preliminary traffic signal warrant analysis of the Middlesex Avenue (CR 501)/Greenwich Parkway intersection;
- An evaluation of the Site Plan focusing on access and parking supply; and
- Recommendations and conclusions.

EXISTING TRAFFIC CONDITIONS

SUBJECT PROPERTY

The subject property is located on the northwest quadrant of the intersection of Middlesex Avenue (CR 501) and Factory Street in the Borough of Metuchen, Middlesex County, New Jersey. The subject property has the following characteristics:

- Designated as Lots 37.01 and 37.02 in Block 71.
- Currently occupied by a 66,074 square foot SportsPlex sports facility and an approximately 3,000 square foot drive-in bank.
- Located in the Oakite Site Redevelopment Plan area where the proposed uses are permitted.
- Land uses in the vicinity of the site area are a mix of commercial and residential along the Middlesex Avenue (CR 501) and Durham Avenue corridors, respectively.
- Greenway Park is located opposite the site along Middlesex Avenue (CR 501).
- Abandoned railroad tracks belonging to Lehigh Valley Railroad Co. run along the site's eastern property boundary.

ROADWAY NETWORK

The subject property has frontage along northbound Durham Avenue, southbound Middlesex Avenue (CR 501) and westbound Factory Street. The following is a description of the adjacent roadway network:

Middlesex Avenue (CR 501)/NJ Route 27

- Classified as an Urban Major Collector under Borough of Metuchen jurisdiction between Bridge Street and New Durham Road (CR 501).
- Classified as an Urban Principal Arterial under Middlesex County jurisdiction between New Durham Road (CR 501) and Central Avenue (CR 669).

- Classified as an Urban Principal Arterial under New Jersey Department of Transportation (NJDOT) jurisdiction north of its intersection with Central Avenue (CR 669).
- Designated as a north/south roadway within the vicinity of the subject property.
- Generally provides 1 wide lane in each direction of travel and turn lanes at signalized key intersections.
- Meets its southernly terminus at its unsignalized intersection with Bridge Street.
- The posted speed limit is 25 miles per hour south of its intersection with Central Avenue (CR 669) and 30 miles per hour north of its intersection with Central Avenue (CR 669).
- Provides an Average Annual Daily Traffic (AADT) of approximately 17,000 vehicles according to NJDOT data collected in 2018.
- Sidewalk is provided along both sides of the roadway within the vicinity of the subject property.
- Parking is not permitted within the vicinity of the subject property.
- A pedestrian crossing for the Middlesex Greenway is located approximately 250 feet north of the existing main site driveway.

Durham Avenue

- Classified as a Minor Collector under Borough of Metuchen jurisdiction.
- Designated as a north/south roadway within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Sidewalk is provided along both sides of the roadway within the vicinity of the subject property.

- Parking is not permitted within the vicinity of the subject property.

Oliver Street

- Classified as a local roadway with a general north/south orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel.
- There is no posted speed limit, so it is assumed to be 25 miles per hour.
- Meets its southern terminus at its unsignalized intersection with New Durham Road (CR 501) and its northern terminus is at a "dead-end."
- Parking is allowed on both sides of the roadway.
- Sidewalk is provided only in the northbound direction of the roadway.

New Durham Road (CR 501)

- Classified as an Urban Principal Arterial under Middlesex County jurisdiction with a general east/west orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel.
- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Meets its easterly terminus at its intersection with Middlesex Avenue (CR 501)/Memorial Parkway.
- Parking is not permitted west of Hampton Street.
- Sidewalk is provided on both sides of the roadway.

Bridge Street

- Classified as an Urban Major Collector under Borough of Metuchen jurisdiction with a general north/south orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel.

- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Meets its northerly terminus at its intersection with New Durham Road (CR 501) and meets its southerly terminus at its intersection with Essex Avenue (NJ Route 27).
- Sidewalk is provided along both sides of the roadway and parking is not permitted.
- Vehicles over 4 tons (straight trucks and tractor trailers) are not permitted.

John Street

- Classified as a local roadway under Borough of Metuchen jurisdiction.
- Provides a general north/south orientation within the vicinity of the subject property and primarily serves a residential community.
- Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Meets its southerly terminus at its intersection with New Durham Road (CR 501) and meets its northerly terminus with Durham Avenue.
- Parking is not permitted on either side of the roadway south of its intersection with Windy Hill Road.
- Sidewalk is provided on both sides of the roadway.

Central Avenue (CR 669)

- Classified as an Urban Major Collector west of its intersection with Middlesex Avenue (CR 501) and a local roadway to the east under Middlesex County jurisdiction.
- Provides a general east/west orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.

- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Meets its easterly terminus at the Lehigh Valley Railroad Co. line.
- Parking is allowed on both sides of the roadway.
- Sidewalk is provided on both sides of the roadway.

Lake Avenue (NJ Route 27)

- Classified as an Urban Principal Arterial under NJDOT jurisdiction with a general east/west orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Meets its westerly terminus at its intersection with Middlesex Avenue (CR 501).
- Sidewalk and bike lanes are provided on both sides of the roadway.
- Parking does not appear to be permitted along the roadway due to the existing geometry.

Main Street (CR 531)

- Classified as an Urban Minor Arterial with a general east/west orientation within the vicinity of the subject property.
- Provides 1 lane to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- The posted speed limit is 25 miles per hour within the vicinity of the subject property.
- Parking is not permitted on either side of the roadway.
- Sidewalk is provided on both sides of the roadway.
- Serves NJTransit bus routes 810, 813 and 819 along the roadway corridor.

EXISTING TRAFFIC VOLUMES

To examine the existing traffic demand at the project site, traffic counts were conducted during the weekday morning, weekday evening and Saturday midday periods at the following intersections:

1. Middlesex Avenue (CR 501) & Central Avenue (CR 669)
2. Middlesex Avenue (CR 501/NJ Route 27) & Lake Avenue (NJ Route 27)
3. Middlesex Avenue (CR 501/NJ Route 27) & Main Street (CR 531)
4. New Durham Road (CR 501) & Oliver Street
5. New Durham Road (CR 501) & John Street
6. New Durham Road (CR 501) & Bridge Street
7. Durham Avenue & Central Avenue (CR 669)
8. New Durham Road (CR 501)/Memorial Parkway & Middlesex Avenue (CR 501)

Specifically, manual turning movement counts were conducted on the following dates and times:

- Thursday, October 8, 2020 from 6:00 am to 9:00 am
- Thursday, October 8, 2020 from 4:00 pm to 6:00 pm
- Saturday, October 10, 2020 from 11:00 am to 2:00 pm

PEAK HOURS

The results of the traffic counts indicate there are distinct hours during the periods of study when site traffic generation experiences its highest level. Based on the traffic count information, the weekday morning peak hour occurred from **7:30 am to 8:30 am**, the weekday evening peak hour occurred from **4:45 pm to 5:45 pm** and the Saturday midday peak hour occurred from **12:15 pm to 1:15 pm**.

The manual turning movement count summaries are contained in the **Appendix**. The existing weekday morning, weekday evening and Saturday midday peak hour traffic volumes are summarized on **Figure 2** in the **Appendix**.

The effects of the COVID-19 pandemic have greatly impacted the flow of traffic throughout the world. To offset this, ATDE has compared the traffic data collected at four historical NJDOT vehicle count stations. The counts were performed on the following roadways and were collected between August 2018 and November 2019:

- Middlesex Avenue (CR 501)
- Middlesex Avenue (NJ Route 27)
- Central Avenue (CR 669)
- Main Street (CR 531)

When comparing the 2018 and 2019 NJDOT data and the traffic data collected by ATDE, the 2020 data was found to be approximately 10.5% lower. Therefore, ATDE increased the collected traffic data to adjust for the reduction in current traffic volumes due to the COVID-19 pandemic.

In order to provide a conservative analysis, the existing peak hour traffic volumes were grown utilizing the Covid19 adjustment factor. The existing SportsPlex and Fulton Bank were notably low and therefore trip generation calculations were prepared for the driveway turn movements based on research data published by the Institute of Transportation Engineers (ITE). The trip generation is described in more detail in the next section of this report. These resultant pre-Covid19 existing traffic volumes are summarized on **Figure 3** in the **Appendix**.

PROPOSED DEVELOPMENT TRAFFIC CHARACTERISTICS

TRIP GENERATION

Projections of trip generation for the proposed redevelopment were prepared using research data compiled by the ITE as contained within the 11th Edition of the *Trip Generation Manual.* Specifically, trip generation projections have been prepared using the following ITE trip generation rates:

Existing:

- LUC 495: "*Recreational Community Center*" for the existing 66,074 square foot SportsPlex facility
- LUC 912: "*Drive-in Bank*" for the existing 3,000 square foot Fulton Bank

Phase 1 Development:

- LUC 254: "*Assisted Living*" for the proposed 64-bed Artis Assisted Living facility
- LUC 565: "*Day Care Center*" for the proposed 12,870 square foot day care

Phase 2 Development:

- LUC 254: "*Assisted Living*" for the proposed 158-bed Monarch Assisted Living facility
- LUC 937: "Coffee/Donut Shop with Drive-Through Window" for the proposed 2,250 square foot coffee shop with drive-thru

Please note, in order to maintain a conservative analysis, it is assumed that the full Phase 2 Build-out would be constructed within the next 3 years. Copies of the ITE trip generation summary printouts are contained in the **Appendix. Table 1** summarizes the ITE trip generation projection for the proposed development.

Table 1
ITE Trip Generation
Existing Vs. Proposed Development

Land Use	Land Use	Trip Type	Weekday Morning			Weekday Evening			Saturday Midday		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Existing	66,074 SF SportsPlex	New	83	43	126	92	105	197	38	33	71
		Pass-By	0	0	0	0	0	0	0	0	0
	3,000 SF Drive-in Bank	New	13	9	22	20	21	41	25	24	49
		Pass-By	4	4	8	11	11	22	15	15	30
	Existing Total		100	56	156	123	137	260	78	72	150
Proposed	64-Bed Artis Assisted Living	New	7	5	12	6	9	15	8	9	17
		Pass-By	0	0	0	0	0	0	0	0	0
	12,870 SF Day Care Center	New	75	67	142	67	76	143	14	8	22
		Pass-By	0	0	0	0	0	0	0	0	0
	158-Bed Monarch Assisted Living	New	17	11	28	15	23	38	20	23	43
		Pass-By	0	0	0	0	0	0	0	0	0
	2,250 SF Coffee Shop with Drive-Thru	New	51	48	99	22	22	44	50	50	100
		Pass-By	47	47	94	22	22	44	49	49	98
	Existing & Proposed Total		297	234	531	255	289	544	219	211	430

TRIP DISTRIBUTION

The additional site-generated traffic attributed to the proposed development has been oriented to the adjacent roadway network based existing travel patterns. The distribution of the new and pass-by site-generated traffic is shown on **Figures 4** and **5** in the **Appendix,** respectively. The new and pass-by site-generated traffic volumes are summarized on **Figures 6** and **7** in the **Appendix**, respectively. The total site-generated traffic volumes are illustrated on **Figure 8** in the **Appendix.**

FUTURE TRAFFIC CONDITIONS

FUTURE BASE TRAFFIC VOLUMES

It is recognized that traffic routinely fluctuates along various State and County roadways, as well as local streets, and varies not only day-to-day, but also on a monthly and yearly basis. It is expected that as development continues in the vicinity of the site, traffic may be expected to increase on a regular basis. It is anticipated the proposed Oakite Site Redevelopment will be completed within 3 years.

As a result, minimal (if any) additional "background" traffic growth can be anticipated with such a short build-out. However, in order to perform a conservative analysis, the existing traffic volumes on the study roadway system were increased by a 1.00% growth rate per year for Urban Principal Arterials in accordance with the NJDOT growth factor for Middlesex County to develop the future Base traffic volumes summarized on **Figure 9** in the **Appendix.**

Other Area Developments

The Borough of Metuchen was contacted to determine if there are any proposed or planned developments in the vicinity of the site which could impact traffic conditions on the adjacent roadway network. A 272-unit residential development is proposed at 212 Durham Avenue located opposite the SportsPlex driveway. Land Use Code 221: "Multifamily Housing (Mid-Rise)" was used to calculate the traffic volumes associated with the proposed development as illustrated on **Figure 10** in the **Appendix.**

FUTURE TRAFFIC VOLUMES

The future No-Build traffic volumes were established by utilizing the future Base traffic volumes and surcharging the adjacent area developments. The resulting future No-Build traffic volumes are summarized on **Figure 11** in the **Appendix.**

Due to the new interconnection between the access points along Durham Avenue and Middlesex Avenue (CR 501), site generated traffic was redistributed throughout the roadway network as shown on **Figure 12** in the **Appendix.** The future Build traffic volumes were established by surcharging the site-generated traffic volumes and redistributed traffic volumes onto the future No-Build traffic volumes. The resulting future Build traffic volumes are summarized on **Figure 13** in the **Appendix.**

ANALYSIS OF FUTURE TRAFFIC VOLUMES

A Volume/Capacity and Level of Service Analysis[1] was conducted for the future No-Build and Build weekday morning, weekday evening and Saturday midday peak hour traffic volumes at the study intersections using the Synchro 11 software. This type of analysis is performed to gauge the operational state of traffic activity, and to identify any areas of excessive delay or congestion.

Signalized intersections were modeled with traffic signal plans and directives provided by Middlesex County and the NJDOT contained in the **Appendix.** The Synchro 11 summary printouts and Level of Service summary tables are contained in the **Appendix** which provide a comparison between future No-Build and future Build conditions. The results of the capacity analysis are summarized by study intersections below.

Middlesex Avenue (CR 501) & Central Avenue (CR 669)/Lake Avenue (NJ Route 27)

Under future No-Build conditions, the signalized intersection of Middlesex Avenue (CR 501) and Central Avenue (CR 669)/Lake Avenue (NJ Route 27) was calculated to operate at an overall Level of Service E or better during each of the peak hours with the following exceptions. For the intersection with Central Avenue (CR 669), the eastbound approach and the southbound left-turn movements were calculated to operate at a Level of Service F during the weekday morning peak hour. For the intersection with Lake Avenue (NJ Route

[1] See the **Appendix** for Volume/Capacity and Level of Service description.

27), the northbound approach was calculated to operate at a Level of Service F during the weekday morning peak hour.

Under future Build conditions, the signalized intersection of Middlesex Avenue (CR 501) and Central Avenue (CR 669)/Lake Avenue (NJ Route 27) was mitigated with a minor timing change during the weekday morning peak hour to reduce congestion and delay under future Build conditions.

A minor timing reallocation of 1 second of green time from the side street to the main line right-of-way would improve the delay associated with the southbound left-turn movement at the intersection of Middlesex Avenue (CR 501) and Central Avenue (CR 669). Please note, a Level of Service F was calculated to continue for the southbound left-turn movement and the eastbound approach, which currently operate with heavy vehicle delays.

Middlesex Avenue (NJ Route 27) & Main Street (CR 531)

Under future No-Build conditions, the signalized intersection of Middlesex Avenue (NJ Route 27) and Main Street (CR 531) was calculated to operate at a Level of Service C or better for any movement with the following exceptions. The eastbound and westbound right-of-way movements were calculated to operate at a Level of Service F during each of the study peak hours.

Under future Build conditions, the signalized intersection of Middlesex Avenue (NJ Route 27) and Main Street (CR 531) was calculated to operate consistent with future No-Build Levels of Service and does not require any mitigation as the site is not expected to increase trips for the eastbound and westbound movements.

New Durham Road (CR 501) & John Street/Bridge Street

Under future No-Build conditions, the signalized intersection of New Durham Road (CR 501) and John Street/Bridge Street was calculated to operate at a Level of Service E or better for any movement with the following exceptions. The northbound approach was calculated to operate at a Level of Service F during each of the study peak hours.

Under future Build conditions, the signalized intersection of New Durham Road (CR 501) and Bridge Street was mitigated with a minor timing change to reduce congestion and delay under future Build conditions. Specifically, in addition to the northbound approach mitigation, the westbound left-turn movements were calculated to change from a Level of Service E under future No-Build conditions to a Level of Service F under future Build conditions during the weekday evening peak hour.

The minor timing mitigation consisted of reallocating a maximum 6 seconds of green time from the side street to the main line right-of-way.

Durham Avenue & Central Avenue (CR 669)

Under future No-Build conditions, the signalized intersection of Durham Avenue and Central Avenue (CR 669) was calculated to operate at a Level of Service C or better for any movement during each of the study peak hours.

Under future Build conditions, the signalized intersection was calculated to operate at an acceptable Level of Service D or better for any movement during each of the study peak hours.

Middlesex Avenue (CR 501) & Greenwich Parkway (site driveway)

Under future Build conditions, the intersection of Middlesex Avenue (CR 501) and Greenwich Parkway (site driveway) was calculated to operate at a Level of Service E or better during each of the study peak hours. A Level of Service E translates to a 95th percentile queue of approximately 3 vehicles exiting the site which can be entirely accommodated under the proposed storage.

TRAFFIC SIGNAL WARRANTS

A preliminary Traffic Signal Warrant Analysis (TSWA) was conducted for the proposed Greenwich Parkway (site driveway) intersection with Middlesex Avenue (CR 501) using the future Build traffic volumes. The results of the investigation are summarized in the **Appendix**.

The Peak Hour Vehicular Volume Warrant published by the Federal Highway Administration in the Manual on Uniform Traffic Control Devices (MUTCD), is satisfied when the data points, based on minor and major street volumes, fall above the curve in MUTCD **Figure 4C-3,** as shown in the **Appendix** for at least 1 peak hour of an average day. For the proposed condition with 2 approach lanes on the proposed site driveway, the approach volume must exceed 150 vehicles per hour to satisfy the warrant. This warrant was not satisfied at the subject intersection under proposed conditions.

Based on a preliminary Traffic Signal Warrant Analysis, full 3-color signalization does not appear to be warranted at the intersection of Middlesex Avenue (CR 501) and Greenwich Parkway. Given that the minor street volumes on the Greenwich Parkway approach are based on trip generation projections, it may be appropriate to conduct future traffic counts at the intersection following construction of the development to further examine warrants for signalization.

CONCLUSIONS

In summary, it has been determined from a review of future site-generated traffic volumes that the proposed Oakite Site Redevelopment would not significantly impact traffic conditions in the site vicinity considering traffic signal timing mitigation.

A preliminary traffic signal warrant analysis was conducted for the intersection of Greenwich Parkway (site driveway) and Middlesex Avenue (CR 501) which indicates signalization is not warranted. Considering Stop-control, the site access points were found to operate with relatively limited vehicle queuing for exiting traffic. Both site driveways provide more than sufficient vehicle storage based on the peak hour traffic analysis results.

Technical Appendix

A | Figures

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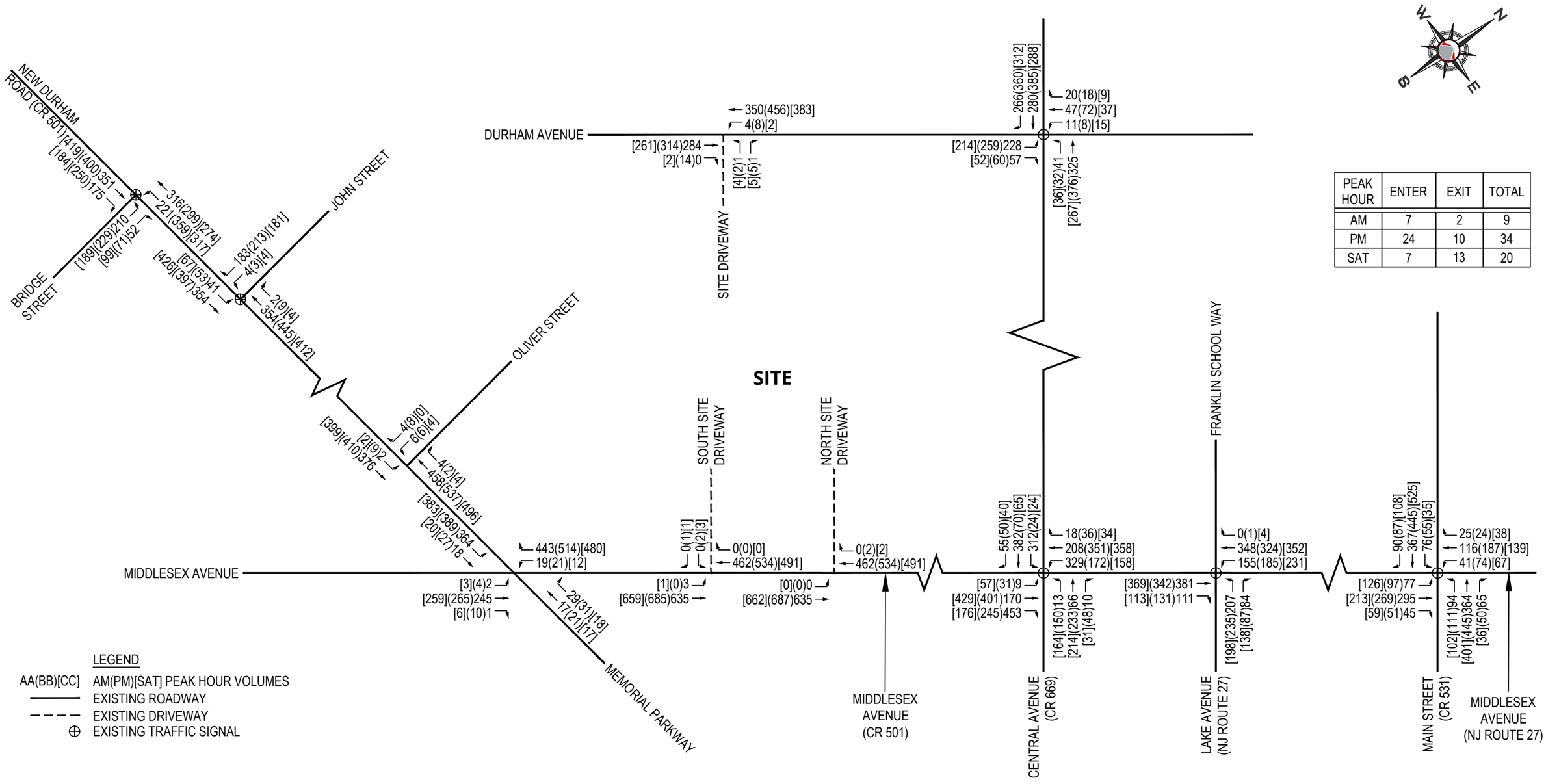
FIGURE 2

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

EXISTING TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	7	2	9
PM	24	10	34
SAT	7	13	20

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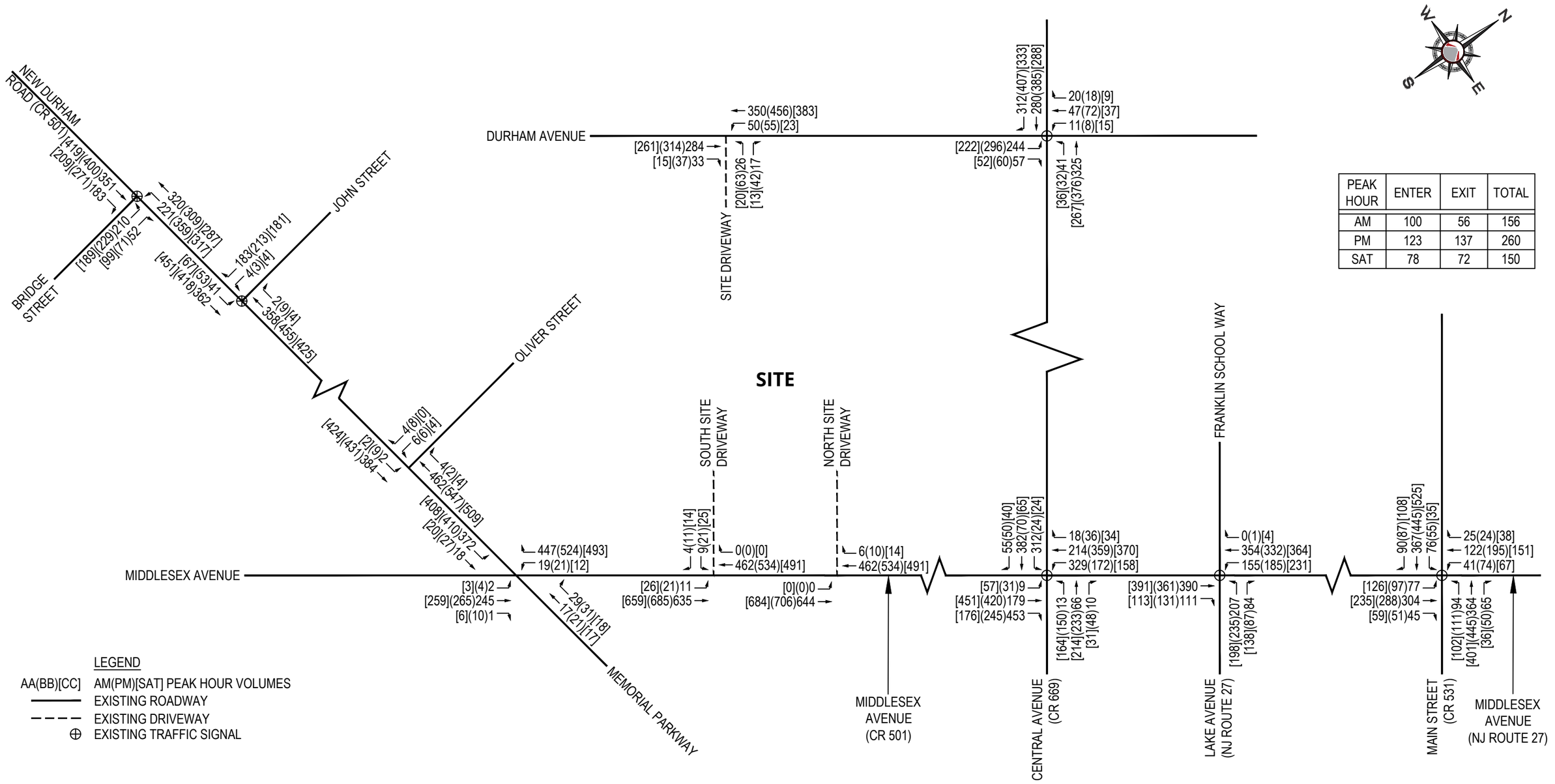
FIGURE 3

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

EXISTING TRAFFIC VOLUMES ADJUSTED FOR COVID19



PEAK HOUR	ENTER	EXIT	TOTAL
AM	100	56	156
PM	123	137	260
SAT	78	72	150

K:\2020\ANJ20055\ANALYSIS--PERMITTING\FIGURES\2022--05\ANJ20055 TIA FIGURES REVISED---->LAYOUT: EXISTING TRAFFIC VOLUME

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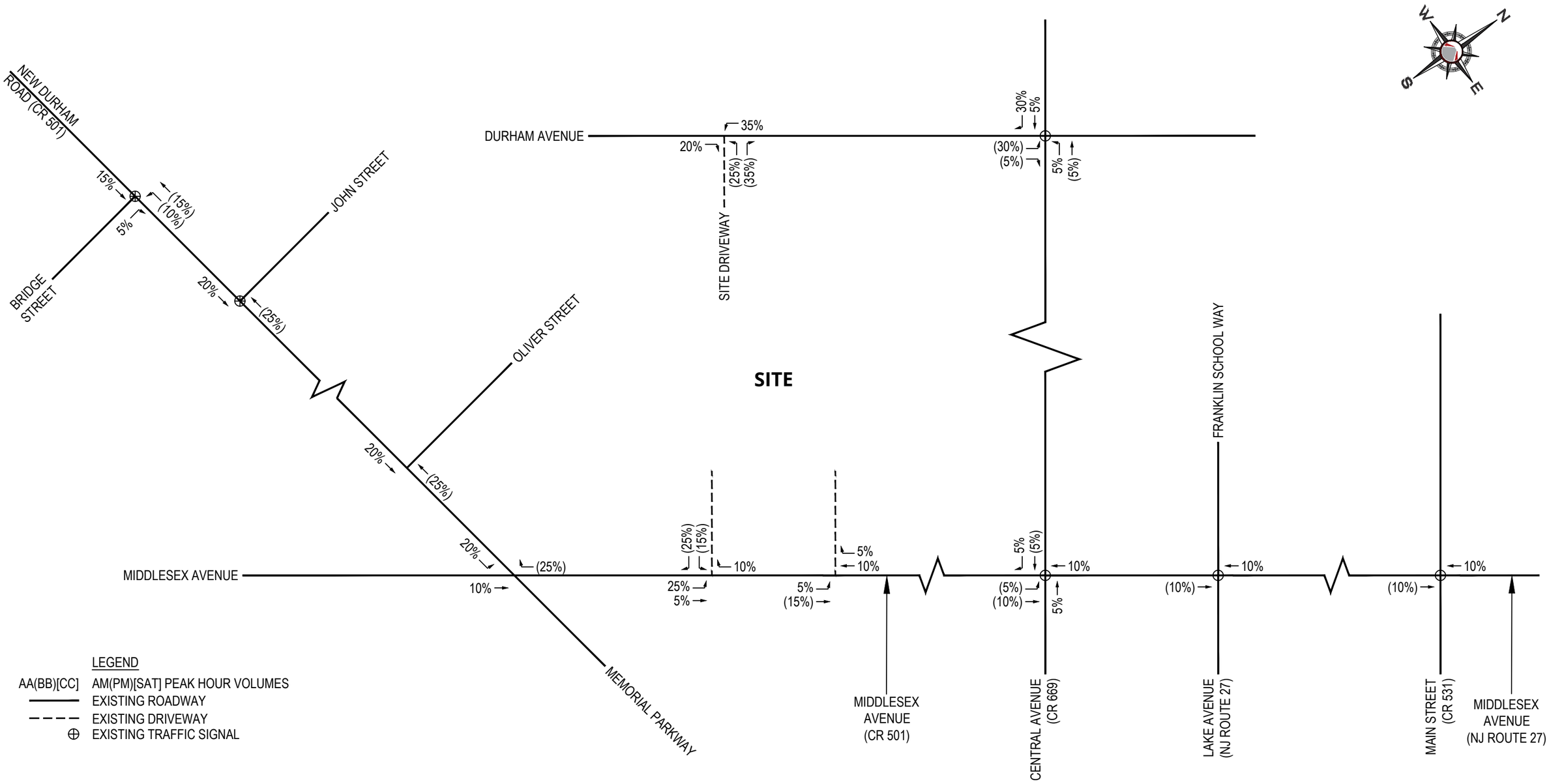
PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

FIGURE 4

DISTRIBUTION OF NEW PROJECT-GENERATED TRIPS



K:\2020\ANA20055\ANALYSIS--PERMITTING\FIGURES\2022-05\ANA20055 TIA FIGURES REVISED---->LAYOUT: DISTRIBUTION OF NEW PROJECT-GENERATED TRIPS

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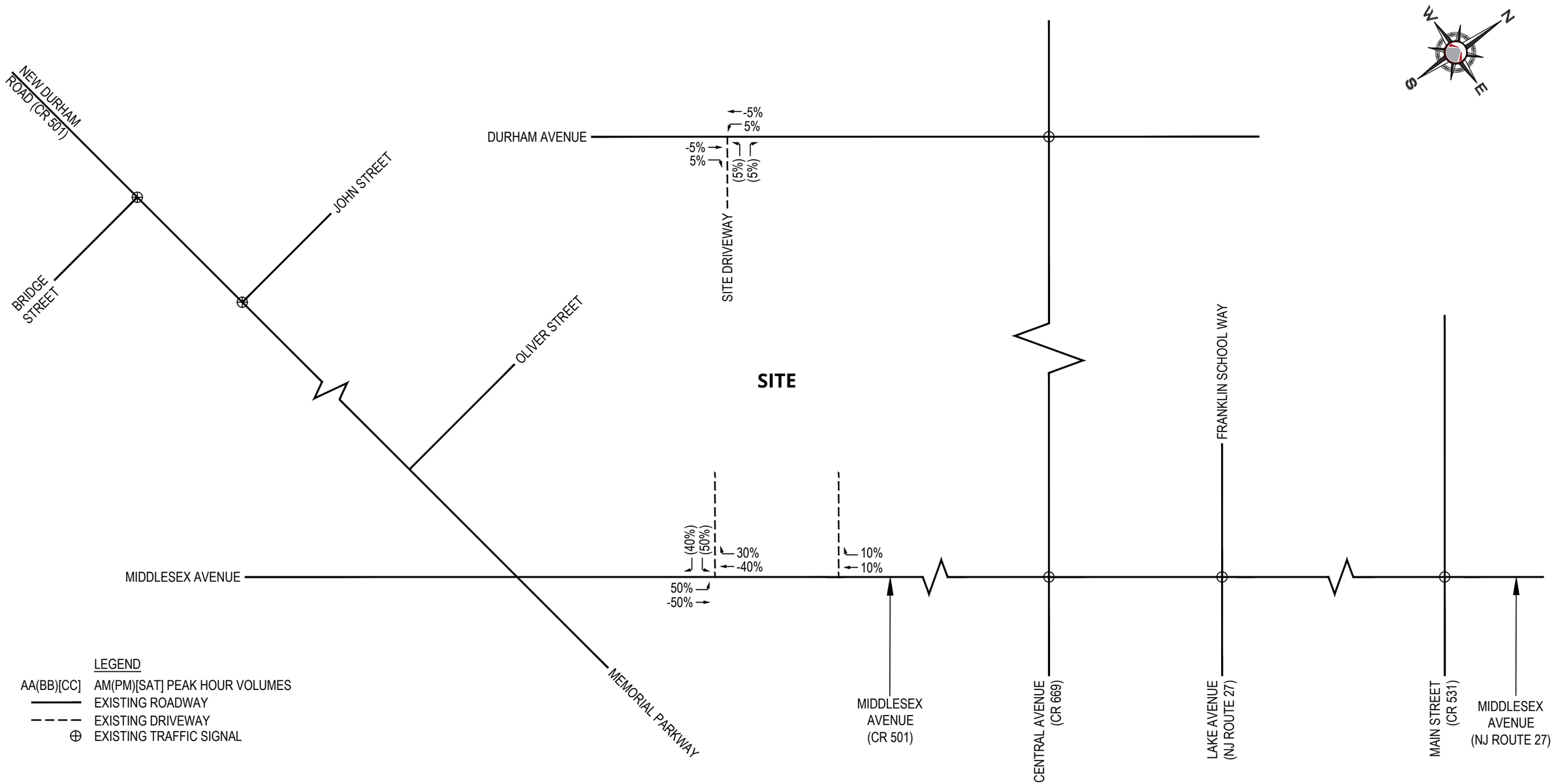
FIGURE 5

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

DISTRIBUTION OF PASS-BY PROJECT-GENERATED TRIPS



K:\2020\ANL20055\ANALYSIS-PERMITTING\FIGURES\2022-05\ANL20055 TIA FIGURES REVISED---->LAYOUT: DISTRIBUTION OF PASS-BY PROJECT-GENERATED TRIPS

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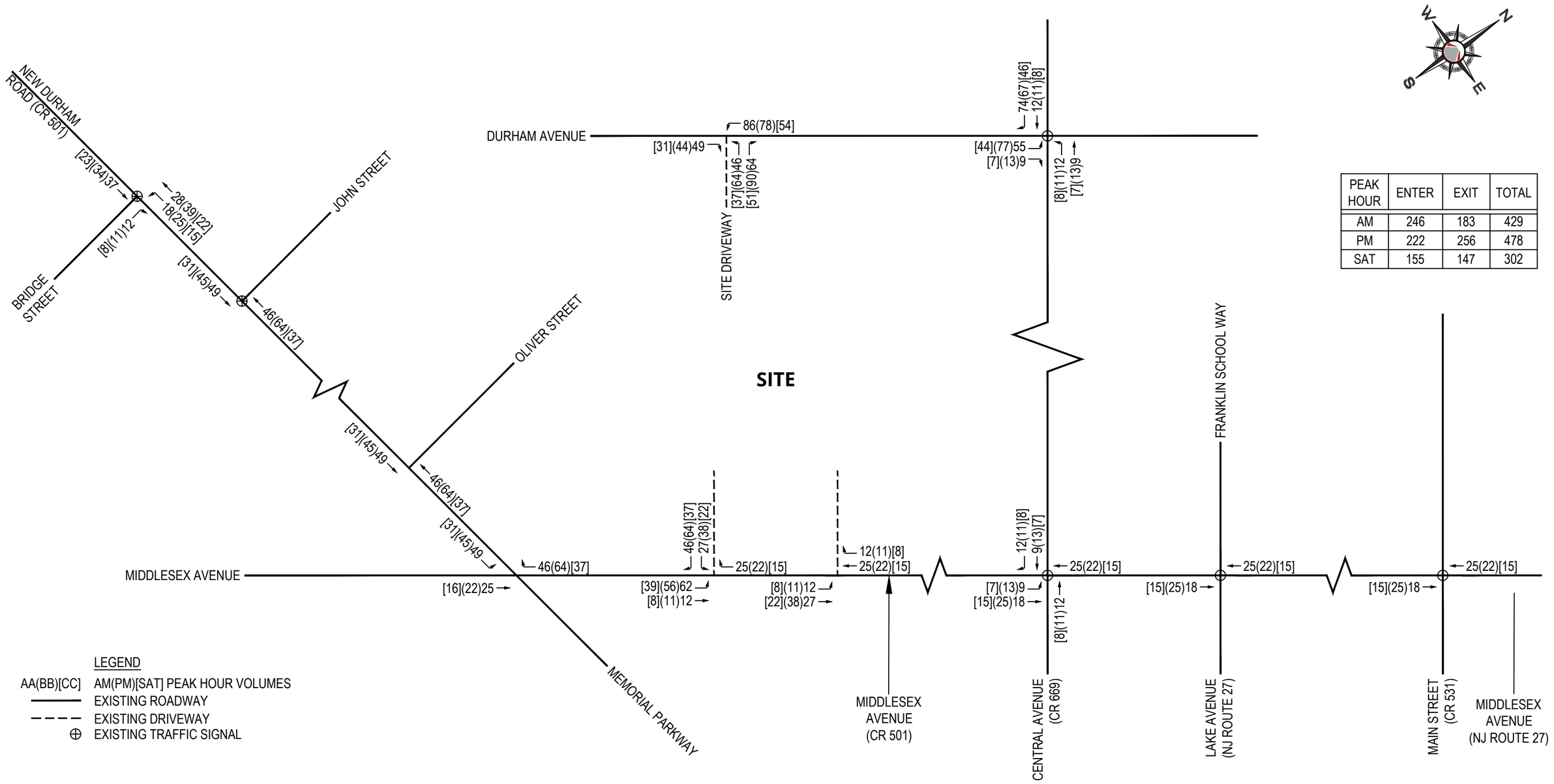
FIGURE 6

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

PROJECT-GENERATED NEW TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	246	183	429
PM	222	256	478
SAT	155	147	302

LEGEND

AA(BB)[CC]	AM(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
– – –	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL

K:\2020\JAN20055\ANALYSIS-PERMITTING\FIGURES\2022-05\JAN20055 TIA FIGURES REVISED---->LAYOUT: PROJECT-GENERATED NEW TRAFFIC VOLUMES

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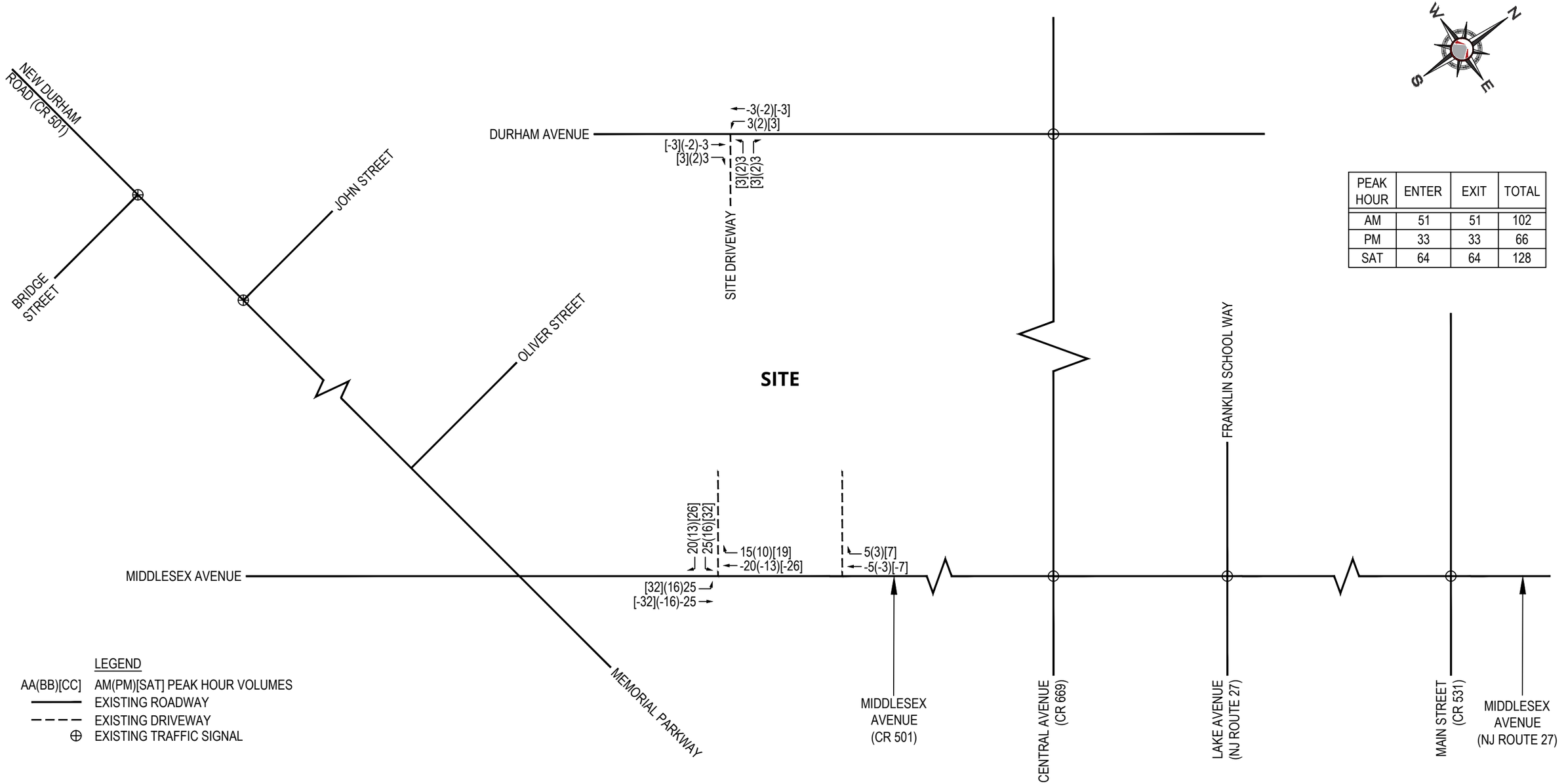
FIGURE 7

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

PROJECT-GENERATED PASS-BY TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	51	51	102
PM	33	33	66
SAT	64	64	128

K:\2020\ANJ20055\ANALYSIS-PERMITTING\FIGURES\2022-05\ANJ20055 TIA FIGURES REVISED---->LAYOUT: PROJECT-GENERATED PASS-BY TRAFFIC VOLUMES

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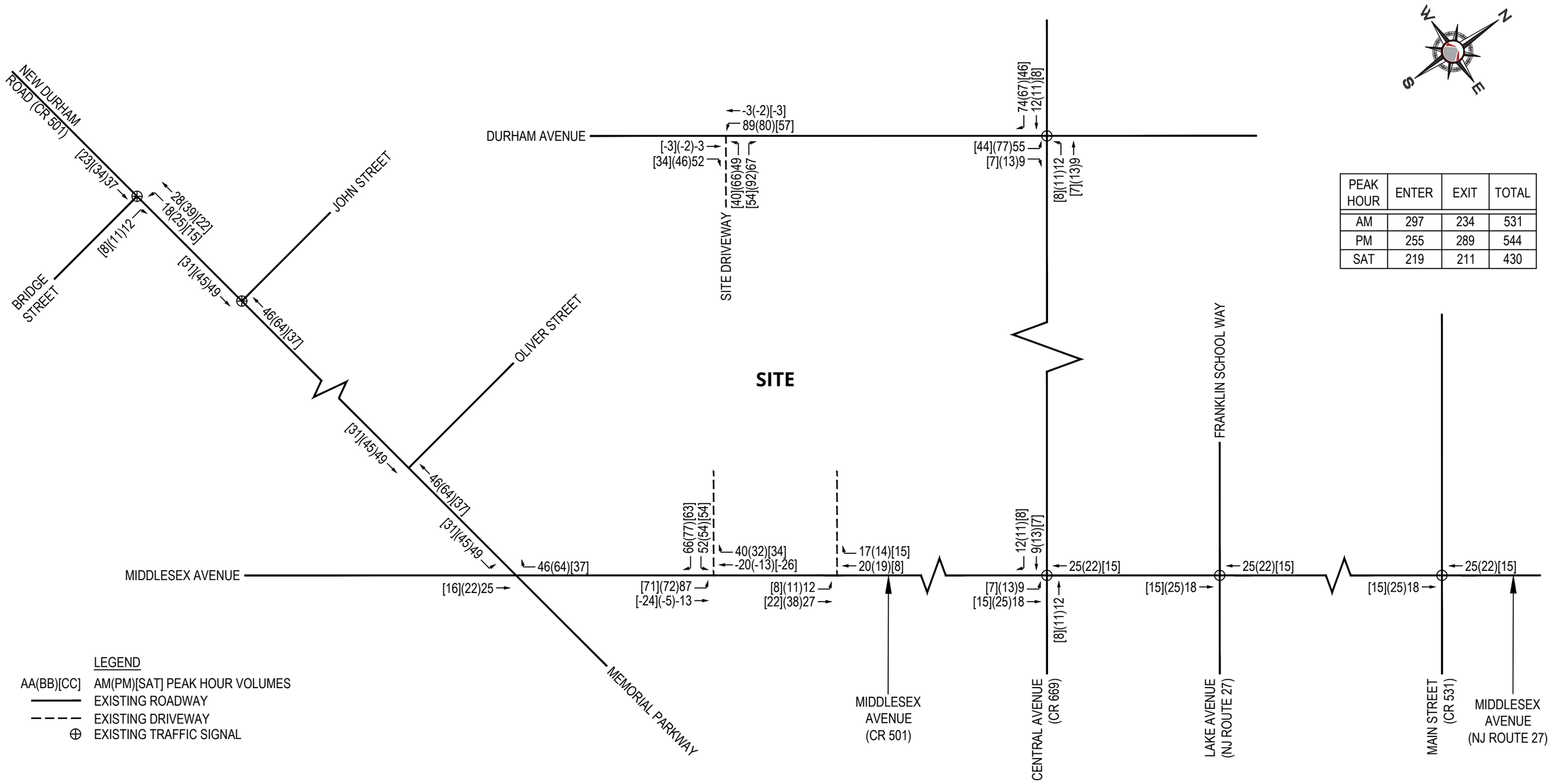
FIGURE 8

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

TOTAL PROJECT-GENERATED TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	297	234	531
PM	255	289	544
SAT	219	211	430

LEGEND

AA(BB)[CC]	AM(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
- - - -	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL

K:\2020\ANJ20055\ANALYSIS--PERMITTING\FIGURES\2022--05\ANJ20055 TIA FIGURES REVISED--->LAYOUT: TOTAL PROJECT-GENERATED TRAFFIC VOLUMES

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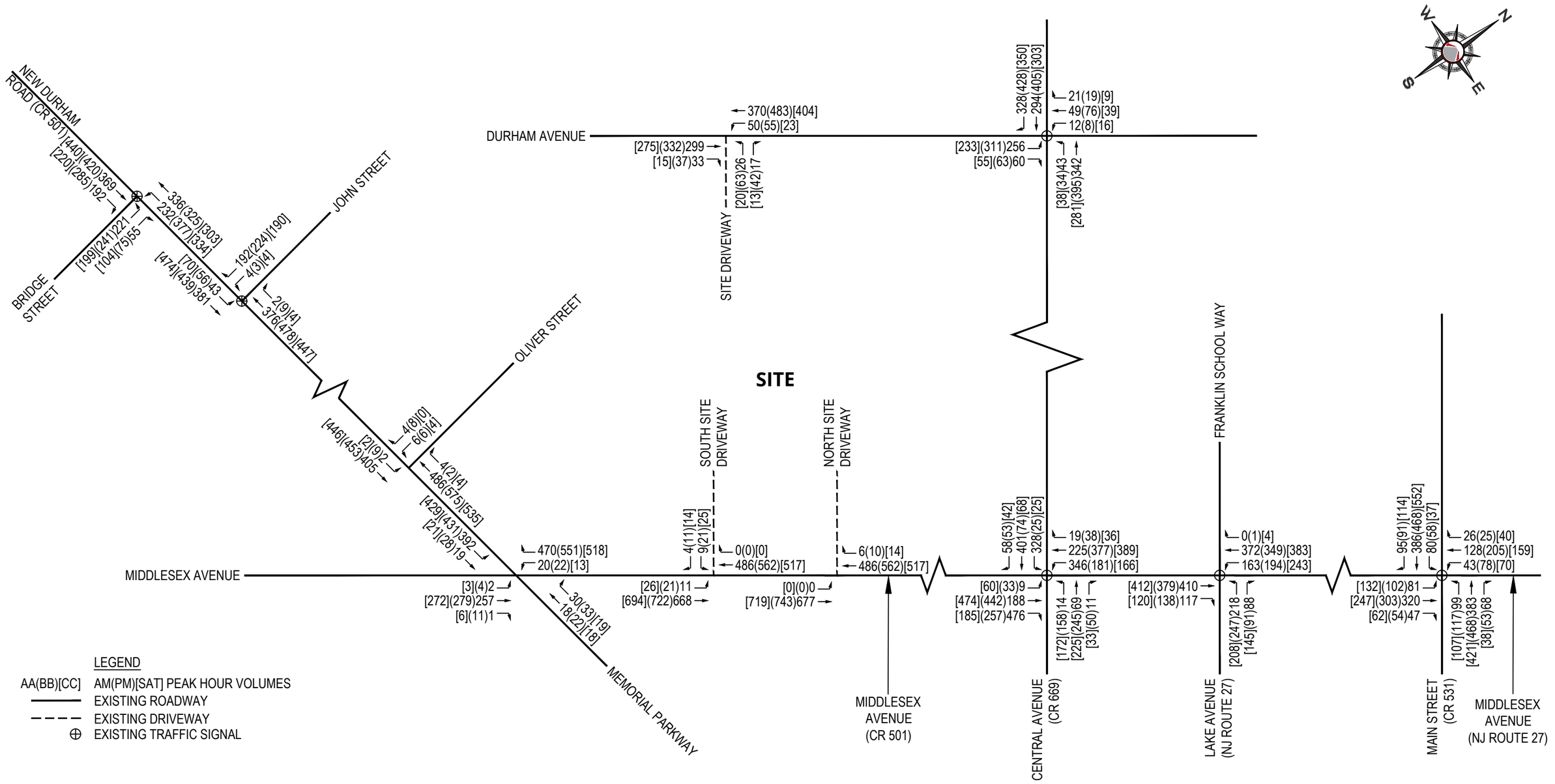
FIGURE 9

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

FUTURE BASE TRAFFIC VOLUMES



K:\2020\ANL20055\ANALYSIS--PERMITTING\FIGURES\2022--05\ANL20055 TIA FIGURES REVISED---->LAYOUT: FUTURE BASE TRAFFIC VOLUMES

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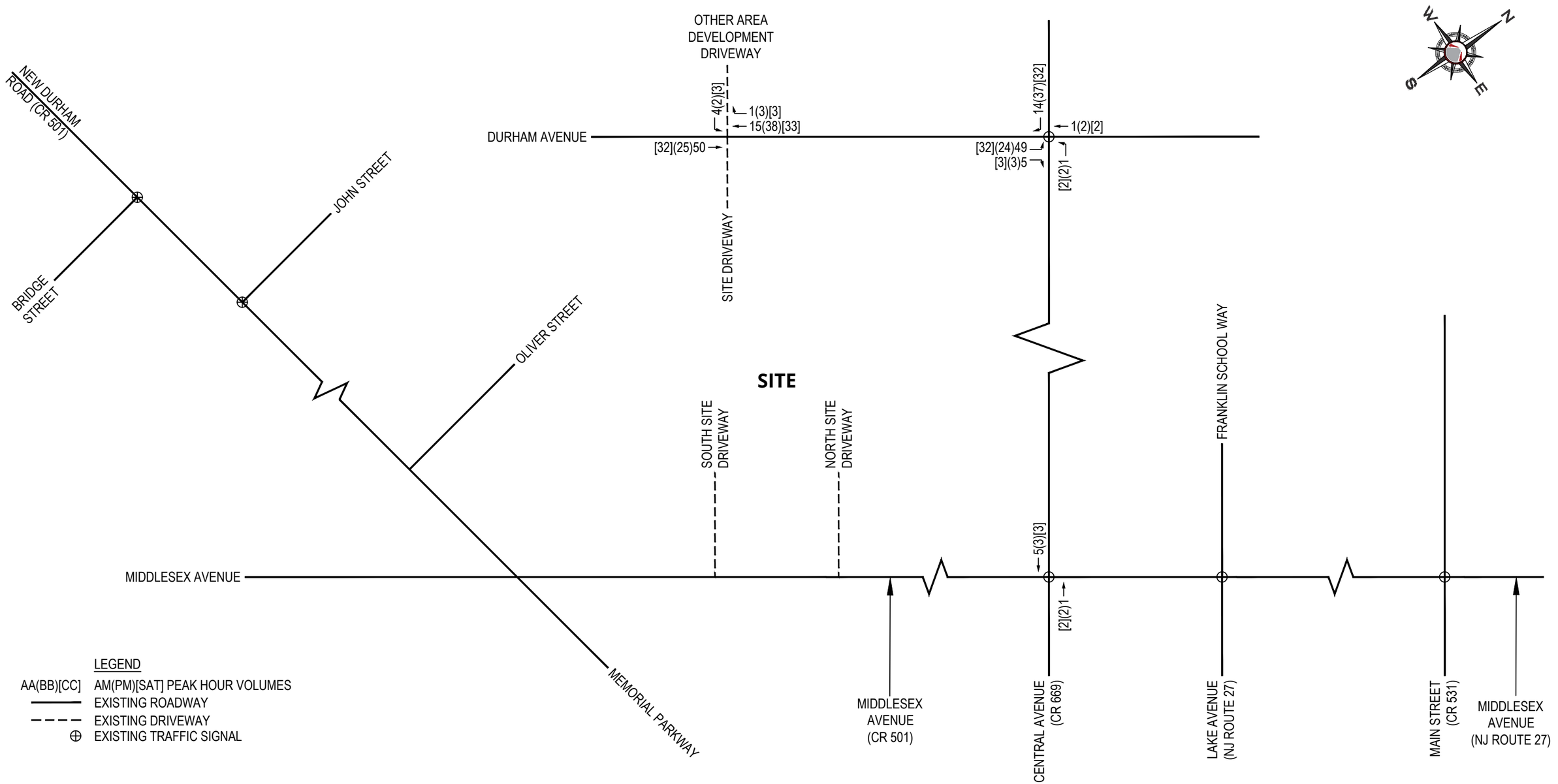
FIGURE 10

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

OTHER PLANNED PROJECTS TRAFFIC VOLUMES



K:\2020\ANJ20055\ANALYSIS-PERMITTING\FIGURES\2022-05\ANJ20055 TIA FIGURES REVISED----->LAYOUT: OTHER PLANNED PROJECTS TRAFFIC VOLUMES

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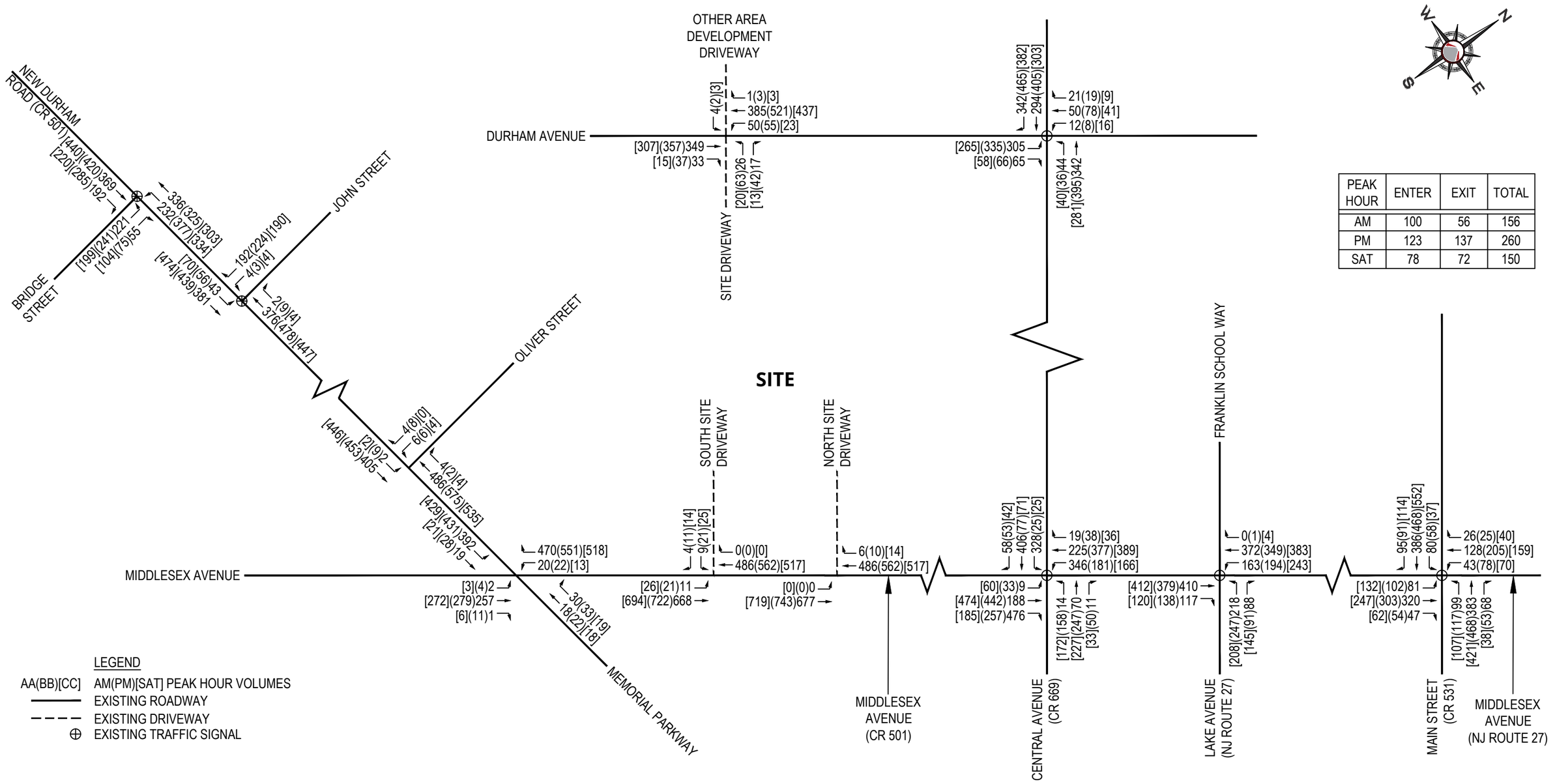
FIGURE 11

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

FUTURE NO-BUILD TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	100	56	156
PM	123	137	260
SAT	78	72	150

K:\2020\ANA20055\ANALYSIS--PERMITTING\FIGURES\2022--05\ANA20055 TIA FIGURES REVISED---->LAYOUT: NO-BUILD TRAFFIC VOLUMES

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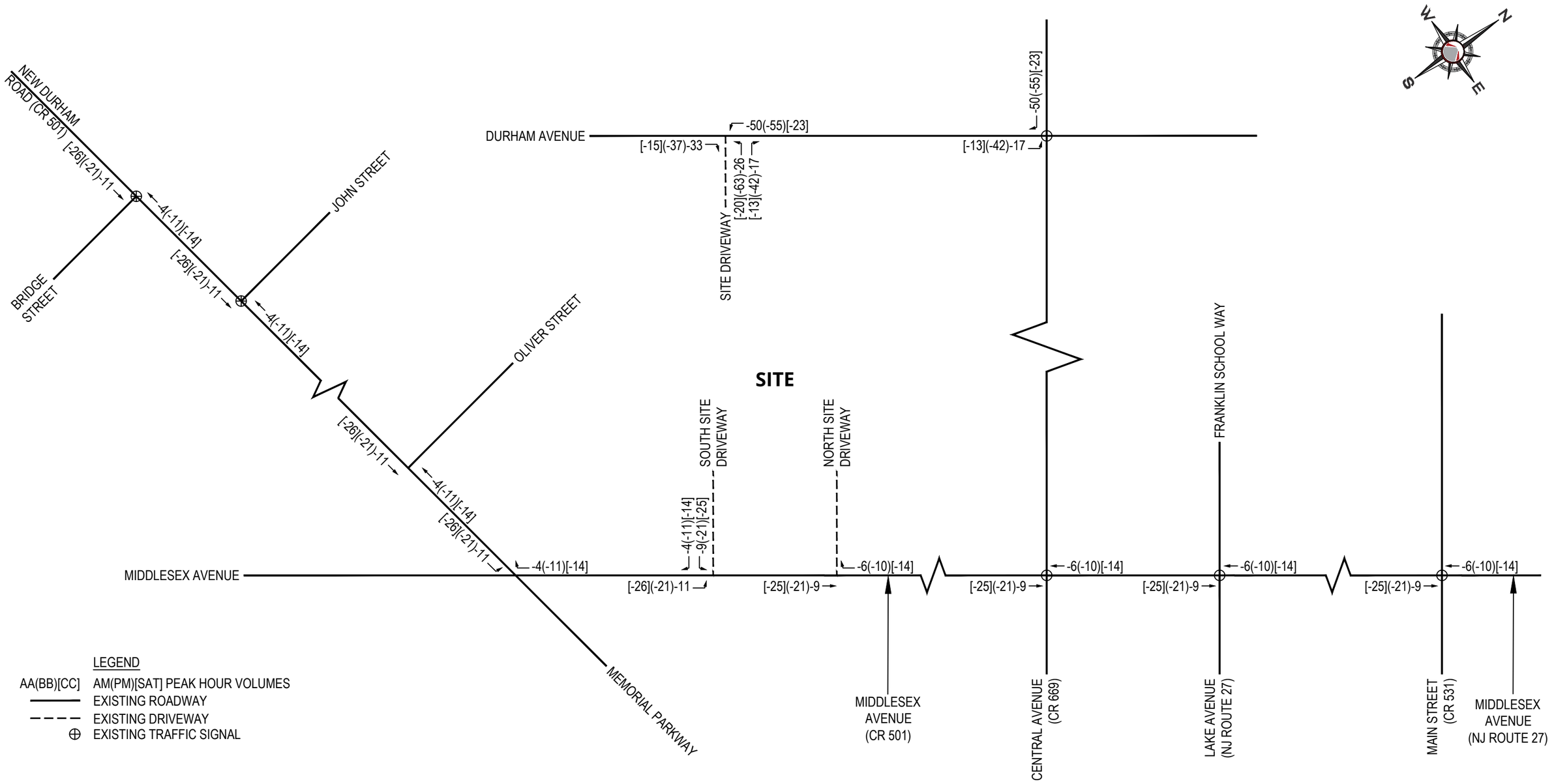
FIGURE 12

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

REDISTRIBUTED TRAFFIC VOLUMES



K:\2020\JAN20055\ANALYSIS--PERMITTING\FIGURES\2022--05\JAN20055 TIA FIGURES REVISED---->LAYOUT: REDISTRIBUTION TRAFFIC VOLUMES

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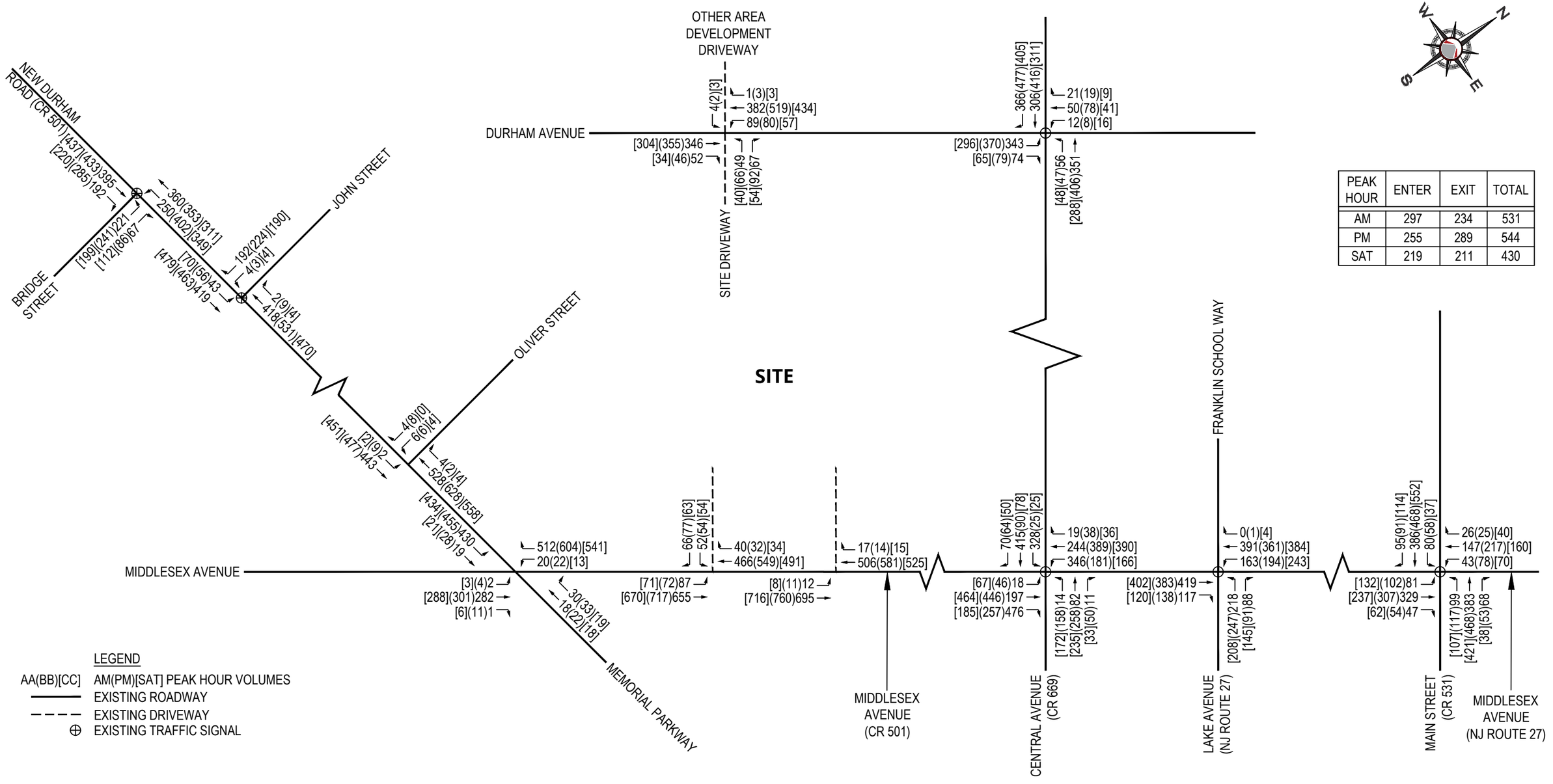
FIGURE 13

PROPOSED LIDL DISCOUNT SUPERMARKET
BOROUGH OF HAWTHORNE
PASSAIC COUNTY, NEW JERSEY

FUTURE BUILD TRAFFIC VOLUMES



PEAK HOUR	ENTER	EXIT	TOTAL
AM	297	234	531
PM	255	289	544
SAT	219	211	430

LEGEND

AA(BB)[CC]	AM(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
- - -	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL

K:\2020\ANA20055\ANALYSIS--PERMITTING\FIGURES\2022--05\ANA20055 TIA FIGURES REVISED---->LAYOUT: BUILD TRAFFIC VOLUMES

B | Turning Movement Count Summary

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ATDE Project No. ANJ20055

TURNING MOVEMENT COUNTS

Weekday Morning

Thursday, October 8, 2020

		New Durham Road (CR 501) & Bridge Street					New Durham Road (CR 501) & John Street					15-Min
		NB		EB		WB	EB	SB		WB		Sum
Interval	Start	L	R	T	R	L	L	L	R	T	R	
1	6:00 AM	17	5	41	27	15	2	0	6	40	0	153
2	6:15 AM	17	6	42	26	21	4	0	11	51	5	183
3	6:30 AM	34	10	48	37	15	5	0	12	73	3	237
4	6:45 AM	33	11	70	42	21	9	0	18	70	0	274
5	7:00 AM	36	12	61	28	19	12	2	12	74	1	257
6	7:15 AM	36	15	79	32	37	19	1	22	70	2	313
7	7:30 AM	46	10	67	36	52	7	1	42	77	1	339
8	7:45 AM	44	15	78	48	64	9	2	44	78	0	382
9	8:00 AM	60	13	75	38	47	10	0	43	82	0	368
10	8:15 AM	40	9	88	44	37	11	1	37	83	1	351
11	8:30 AM	50	7	63	38	42	4	0	43	92	0	339
12	8:45 AM	57	3	93	56	44	6	0	37	77	0	373

	Peak Hour Summary									
	NB		EB		WB	EB	SB		WB	
	L	R	T	R	L	L	L	R	T	R
Peak Hour Volume	190	47	308	166	200	37	4	166	320	2
% Heavy Vehicles	2%	15%	8%	2%	5%	8%	0%	4%	5%	0%
Peak Hour Factor	0.81		0.90		0.78	0.84	0.92		0.96	

K:\2020\ANJ20055\FieldWork\Summarized\ANJ20055 TMC Summary.xlsx

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		Middlesex Avenue (CR 501) & New Durham Road (CR 501)/Memorial Parkway									Middlesex Ave & North Bank Drive		15-Min
		NB			EB		SB		WB		NB	SB	Sum
Interval	Start	L	T	R	L	T	L	R	T	R	L	R	
1	6:00 AM	0	15	0	39	1	0	46	0	1	0	0	102
2	6:15 AM	1	20	0	42	0	1	63	0	0	0	0	127
3	6:30 AM	1	34	0	58	1	1	81	2	2	0	0	180
4	6:45 AM	0	46	0	68	4	0	84	2	0	0	0	204
5	7:00 AM	0	42	1	66	0	1	73	2	3	0	0	188
6	7:15 AM	0	60	1	85	0	1	82	2	4	0	0	235
7	7:30 AM	1	75	0	78	2	6	103	3	7	0	0	275
8	7:45 AM	0	46	1	73	6	5	109	7	10	0	0	257
9	8:00 AM	1	49	0	86	4	0	91	3	4	0	0	238
10	8:15 AM	0	51	0	88	4	6	88	2	5	3	0	247
11	8:30 AM	3	31	0	78	1	1	83	2	6	0	0	205
12	8:45 AM	1	46	1	73	5	3	90	2	5	0	0	226

	Peak Hour Summary										
	NB			EB		SB		WB		NB	SB
	L	T	R	L	T	L	R	T	R	L	R
Peak Hour Volume	2	221	1	325	16	17	391	15	26	3	0
% Heavy Vehicles	0%	2%	0%	9%	25%	0%	5%	7%	0%	0%	0%
Peak Hour Factor		0.73			0.93		0.89		0.60	No Data	No Data

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		Middlesex Avenue (CR 501) & East Bank Driveway				Middlesex Avenue (CR 501) & Factory Street						15-Min
		NB	EB		SB	NB		EB		SB		Sum
Interval	Start	L	L	R	R	L	T	L	R	T	R	
1	6:00 AM	0	0	0	0	0	55	0	0	46	0	101
2	6:15 AM	0	0	0	1	0	62	0	0	64	1	128
3	6:30 AM	0	0	1	0	0	94	1	0	82	0	178
4	6:45 AM	0	0	0	0	0	114	0	1	84	0	199
5	7:00 AM	0	0	0	0	0	111	0	0	74	0	185
6	7:15 AM	0	0	0	0	0	149	1	0	83	0	233
7	7:30 AM	0	0	0	0	4	160	1	0	109	0	274
8	7:45 AM	0	0	0	0	2	129	1	2	114	2	250
9	8:00 AM	0	0	0	0	4	139	5	1	91	8	248
10	8:15 AM	0	0	0	0	3	144	8	4	94	7	260
11	8:30 AM	0	0	0	0	0	115	0	2	84	3	204
12	8:45 AM	0	0	0	0	3	124	0	1	93	1	222

	Peak Hour Summary									
	NB	EB		SB	NB		EB		SB	
	L	L	R	R	L	T	L	R	T	R
Peak Hour Volume	0	0	0	0	13	572	15	7	408	17
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	No Data	No Data		No Data	0.89		0.46		0.92	

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		Middlesex Avenue (NJ Route 27) & Main Street (CR 531)												15-Min
		NB			EB			SB			WB			Sum
Interval	Start	L	T	R	L	T	R	L	T	R	L	T	R	
1	6:00 AM	2	10	0	0	40	4	1	8	1	3	45	0	114
2	6:15 AM	1	14	9	3	55	14	3	15	2	6	75	7	204
3	6:30 AM	7	21	7	8	60	9	3	15	1	6	98	11	246
4	6:45 AM	7	27	3	7	89	7	9	13	2	4	84	9	261
5	7:00 AM	11	40	5	10	89	12	4	19	5	5	76	10	286
6	7:15 AM	9	39	4	22	88	12	4	23	2	7	66	9	285
7	7:30 AM	16	64	4	29	74	14	8	29	7	23	82	18	368
8	7:45 AM	22	42	10	22	70	20	15	32	2	30	85	14	364
9	8:00 AM	22	87	17	11	93	12	4	16	6	22	87	17	394
10	8:15 AM	10	75	10	7	95	35	10	28	8	10	75	10	373
11	8:30 AM	19	76	12	4	100	21	11	28	9	19	76	12	387
12	8:45 AM	16	95	3	14	100	16	2	15	4	16	95	3	379

	Peak Hour Summary											
	NB			EB			SB			WB		
	6	T	R	L	T	R	L	T	R	L	T	R
Peak Hour Volume	70	268	41	69	332	81	37	105	23	85	329	59
% Heavy Vehicles	4%	1%	5%	7%	4%	5%	0%	4%	9%	2%	2%	5%
Peak Hour Factor		0.75			0.88			0.84			0.92	

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		Middlesex Avenue (CR 501) & Central Avenue (CR 669)										15-Min
		WB			NB		EB			SB		Sum
Interval	Start	L	T	R	L	R	L	T	R	L	R	
1	6:00 AM	2	0	0	10	14	27	12	0	19	2	86
2	6:15 AM	0	5	2	2	34	16	12	7	28	3	109
3	6:30 AM	0	2	0	0	36	41	18	3	64	1	165
4	6:45 AM	0	2	0	8	70	37	40	7	73	0	237
5	7:00 AM	0	8	0	2	50	72	38	10	58	6	244
6	7:15 AM	0	0	0	12	109	78	68	12	99	2	380
7	7:30 AM	0	14	2	2	117	75	100	7	132	1	450
8	7:45 AM	0	22	0	2	89	72	106	17	70	8	386
9	8:00 AM	6	14	1	4	106	51	73	9	53	4	321
10	8:15 AM	6	10	6	0	97	84	67	18	43	3	334
11	8:30 AM	4	16	4	6	54	64	72	4	59	8	291
12	8:45 AM	2	11	6	4	80	70	61	16	56	6	312

	Peak Hour Summary									
	WB			NB		EB			SB	
	6	T	R	L	R	L	T	R	L	R
Peak Hour Volume	12	60	9	8	409	282	346	51	298	16
% Heavy Vehicles	50%	3%	44%	0%	2%	0%	0%	0%	3%	0%
Peak Hour Factor		0.92			0.88		0.87			0.59

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		Durham Avenue & SportsPlex				Middlesex Avenue (CR 501) & Lake Avenue (NJ Route 57)						15-Min
		EB	NB		WB	WB		NB	SB			Sum
Interval	Start	R	L	R	L	L	R	R	L	T	R	
1	6:00 AM	1	0	1	0	10	9	20	19	47	0	107
2	6:15 AM	0	0	0	0	8	8	12	18	68	0	114
3	6:30 AM	0	0	0	0	13	8	18	32	79	0	150
4	6:45 AM	0	0	0	0	31	14	13	20	87	0	165
5	7:00 AM	0	0	0	0	25	17	24	22	64	0	152
6	7:15 AM	0	0	2	1	57	10	28	23	76	0	197
7	7:30 AM	0	0	0	1	47	23	21	33	87	0	212
8	7:45 AM	0	0	1	0	49	20	26	32	81	0	209
9	8:00 AM	0	0	0	1	54	20	27	30	82	0	214
10	8:15 AM	0	1	0	2	37	13	26	45	65	0	189
11	8:30 AM	0	0	0	0	37	23	17	32	60	0	169
12	8:45 AM	1	0	1	0	37	7	21	25	84	0	176

	Peak Hour Summary									
	EB	NB		WB	WB		NB	SB		
	R	L	R	L	L	R	R	L	T	R
Peak Hour Volume	0	1	1	4	187	76	100	140	315	0
% Heavy Vehicles	0%	0%	0%	25%	13%	4%	28%	3%	3%	0%
Peak Hour Factor	No Data	0.50		0.50	0.89		0.93	0.95		

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		Durham Avenue & Central Avenue (CR 669)									15-Min	Hour
		NB		EB		SB		WB			Sum	Sum
Interval	Start	L	T	L	R	T	R	L	T	R		
1	6:00 AM	1	19	8	4	13	16	1	2	0	64	4493
2	6:15 AM	5	17	10	2	19	8	1	2	0	64	5283
3	6:30 AM	2	38	24	7	24	25	0	6	2	128	6286
4	6:45 AM	2	61	48	3	42	47	1	8	1	213	7261
5	7:00 AM	7	51	46	10	23	61	0	5	2	205	7853
6	7:15 AM	10	76	67	4	59	67	0	3	3	289	8379
7	7:30 AM	9	93	61	16	71	80	1	7	3	341	8456
8	7:45 AM	12	74	65	12	58	59	1	13	3	297	8019
9	8:00 AM	11	65	46	12	59	57	1	5	4	260	7799
10	8:15 AM	7	62	32	14	65	42	7	18	8	255	
11	8:30 AM	5	63	33	10	43	59	1	8	5	227	
12	8:45 AM	8	72	39	15	40	53	2	6	2	237	

	Peak Hour Summary								
	NB		EB		SB		WB		
	6	T	L	R	T	R	L	T	R
Peak Hour Volume	39	294	204	54	253	238	10	43	18
% Heavy Vehicles	0%	2%	0%	2%	2%	0%	0%	0%	0%
Peak Hour Factor	0.82		0.84		0.81		0.54		

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TURNING MOVEMENT COUNTS

Weekday Evening

Thursday, October 8, 2020

		New Durham Road (CR 501) & Bridge Street					New Durham Road (CR 501) & John Street					15-Min
		NB		EB		WB	EB	SB		WB		Sum
Interval	Start	L	R	T	R	L	L	L	R	T	R	
1	4:00 PM	51	21	88	48	70	13	1	66	102	1	461
2	4:15 PM	57	20	99	69	70	11	1	51	81	0	459
3	4:30 PM	46	18	81	70	66	11	0	40	74	1	407
4	4:45 PM	44	18	88	74	75	12	2	45	104	1	463
5	5:00 PM	57	15	89	63	81	9	0	43	95	2	454
6	5:15 PM	58	16	91	65	86	13	1	55	112	1	498
7	5:30 PM	48	15	75	43	83	14	0	50	91	4	423
8	5:45 PM	43	21	86	74	97	13	4	48	95	1	482

	Peak Hour Summary									
	NB		EB		WB	EB	SB		WB	
	L	R	T	R	L	L	L	R	T	R
Peak Hour Volume	207	64	343	245	325	48	3	193	402	8
% Heavy Vehicles	1%	0%	4%	0%	0%	0%	0%	1%	3%	0%
Peak Hour Factor	0.92		0.91		0.94	0.86	0.88		0.91	

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		Middlesex Avenue (CR 501) & New Durham Road (CR 501)/Memorial Parkway									Middlesex Ave & North Bank Drive		15-Min
		NB			EB		SB		WB		NB	SB	Sum
Interval	Start	L	T	R	L	T	L	R	T	R	L	R	
1	4:00 PM	1	56	2	91	3	5	114	1	10	0	0	283
2	4:15 PM	1	65	1	106	4	3	97	5	5	0	0	287
3	4:30 PM	0	52	1	80	5	0	114	4	4	0	0	260
4	4:45 PM	0	62	2	89	6	6	122	8	8	0	0	303
5	5:00 PM	1	67	1	94	6	4	112	3	7	0	0	295
6	5:15 PM	3	46	1	88	7	6	124	4	8	0	0	287
7	5:30 PM	0	65	5	69	5	3	110	4	5	0	0	266
8	5:45 PM	3	54	1	80	4	2	122	5	8	1	0	280

	Peak Hour Summary										
	NB			EB		SB		WB		NB	SB
	L	T	R	L	T	L	R	T	R	L	R
Peak Hour Volume	4	240	9	340	24	19	468	19	28	0	0
% Heavy Vehicles	0%	2%	0%	3%	4%	0%	4%	0%	0%	0%	0%
Peak Hour Factor		0.90			0.91		0.94		0.73	No Data	No Data

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		Middlesex Avenue (CR 501) & East Bank Driveway				Middlesex Avenue (CR 501) & Factory Street						15-Min
		NB	EB		SB	NB		EB		SB		Sum
Interval	Start	L	L	R	R	L	T	L	R	T	NB	
1	4:00 PM	0	1	0	0	2	157	2	1	119	0	282
2	4:15 PM	0	1	0	1	0	176	1	0	100	0	279
3	4:30 PM	0	0	0	0	3	136	2	1	114	2	258
4	4:45 PM	0	0	0	0	1	159	0	2	128	3	293
5	5:00 PM	0	0	1	0	2	168	4	0	116	1	292
6	5:15 PM	0	0	1	0	3	142	2	4	130	0	282
7	5:30 PM	0	1	0	0	0	139	2	2	113	2	259
8	5:45 PM	0	0	0	0	0	142	2	3	124	2	273

	Peak Hour Summary									
	NB	EB		W	NB		EB		SB	
	L	L	R	R	L	T	L	R	T	R
Peak Hour Volume	0	1	2	0	6	608	8	8	487	6
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	No Data	0.75		No Data	0.90		0.67		0.94	

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ATDE Project No. ANJ20055

		Middlesex Avenue (NJ Route 27) & Main Street (CR 531)												15-Min
		NB			EB			SB			WB			Sum
Interval	Start	L	T	R	L	T	R	L	T	R	L	T	R	
1	4:00 PM	24	44	7	15	109	22	14	40	9	24	102	13	423
2	4:15 PM	17	54	17	12	113	16	20	34	7	26	101	8	425
3	4:30 PM	24	59	8	9	115	31	25	36	6	29	104	13	459
4	4:45 PM	16	68	11	13	94	13	15	42	5	21	102	11	411
5	5:00 PM	20	62	10	16	108	17	21	48	8	27	83	12	432
6	5:15 PM	28	63	13	9	116	23	15	35	2	26	104	12	446
7	5:30 PM	24	49	12	12	85	26	16	42	7	26	114	10	423
8	5:45 PM	20	45	12	6	133	22	23	34	3	12	113	9	432

	Peak Hour Summary											
	NB			EB			SB			WB		
	6	T	R	L	T	R	L	T	R	L	T	R
Peak Hour Volume	88	242	46	50	403	79	67	167	22	100	403	45
% Heavy Vehicles	1%	0%	0%	8%	0%	0%	1%	1%	0%	1%	1%	2%
Peak Hour Factor		0.90			0.90			0.83			0.91	

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		Middlesex Avenue (CR 501) & Central Avenue (CR 669)										15-Min
		WB			NB		EB			SB		Sum
Interval	Start	L	T	R	L	R	L	T	R	L	R	
1	4:00 PM	44	49	7	5	59	7	15	7	42	7	242
2	4:15 PM	30	52	10	7	53	7	17	13	41	14	244
3	4:30 PM	34	46	10	9	47	6	14	9	33	5	213
4	4:45 PM	34	56	11	7	44	7	17	7	53	8	244
5	5:00 PM	33	55	12	9	61	4	16	10	48	8	256
6	5:15 PM	35	49	12	5	53	3	14	15	29	9	224
7	5:30 PM	34	51	8	7	64	8	16	13	26	8	235
8	5:45 PM	35	69	7	11	44	6	16	4	36	9	237

	Peak Hour Summary									
	WB			NB		EB			SB	
	6	T	R	L	R	L	T	R	L	R
Peak Hour Volume	136	211	43	28	222	22	63	45	156	33
% Heavy Vehicles	10%	1%	9%	0%	4%	0%	0%	0%	6%	0%
Peak Hour Factor		0.97			0.88		0.88			0.77

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		Durham Avenue & SportsPlex				Middlesex Avenue (CR 501) & Lake Avenue (NJ Route 57)						15-Min
		EB	NB		WB	WB		NB	SB			Sum
Interval	Start	R	L	R	L	L	R	R	L	T	R	
1	4:00 PM	2	0	4	7	60	27	24	43	81	2	250
2	4:15 PM	3	1	1	3	53	19	29	47	61	0	217
3	4:30 PM	2	1	0	3	44	27	26	43	82	0	228
4	4:45 PM	2	1	1	2	52	23	20	41	81	0	223
5	5:00 PM	4	1	1	0	64	22	33	42	72	0	239
6	5:15 PM	1	0	2	1	37	21	36	33	63	1	195
7	5:30 PM	7	0	1	5	60	13	30	51	75	0	242
8	5:45 PM	9	4	3	7	59	16	30	64	76	0	268

	Peak Hour Summary									
	EB	NB		WB	WB		NB	SB		
	R	L	R	L	L	R	R	L	T	R
Peak Hour Volume	14	2	5	8	213	79	119	167	291	1
% Heavy Vehicles	0%	0%	0%	0%	7%	1%	13%	1%	2%	0%
Peak Hour Factor	0.50	0.88		0.40	0.85		0.83	0.91		

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		Durham Avenue & Central Avenue (CR 669)									15-Min	Hour
		NB		EB		SB		WB			Sum	Sum
Interval	Start	L	T	L	R	T	R	NB	SB	R		
1	4:00 PM	8	82	39	15	71	73	2	14	2	306	8895
2	4:15 PM	13	82	37	7	59	67	0	13	3	281	8991
3	4:30 PM	7	73	70	8	74	77	4	18	2	333	9087
4	4:45 PM	9	94	63	12	74	85	2	16	6	361	9106
5	5:00 PM	6	102	56	16	96	73	2	22	2	375	9106
6	5:15 PM	7	73	63	15	96	80	2	16	4	356	
7	5:30 PM	11	71	50	14	82	80	1	16	4	329	
8	5:45 PM	9	74	55	15	79	75	2	14	3	326	

	Peak Hour Summary								
	NB		EB		SB		WB		
	L	T	L	R	T	R	L	T	R
Peak Hour Volume	33	340	232	57	348	318	7	70	16
% Heavy Vehicles	24%	0%	0%	0%	3%	0%	0%	0%	0%
Peak Hour Factor	0.86		0.93		0.95		0.89		

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TURNING MOVEMENT COUNTS

Saturday Midday

Saturday, October 10, 2020

		New Durham Road (CR 501) & Bridge Street					New Durham Road (CR 501) & John Street					15-Min
		NB		EB		WB	EB	SB		WB		Sum
Interval	Start	L	R	T	R	L	L	L	R	T	R	
1	11:00 AM	49	20	90	40	64	8	0	44	94	0	409
2	11:15 AM	37	21	65	56	53	11	0	34	91	0	368
3	11:30 AM	39	26	71	49	68	18	0	46	73	0	390
4	11:45 AM	47	14	69	55	65	12	0	45	86	0	393
5	12:00 PM	39	21	85	46	73	15	2	60	79	1	421
6	12:15 PM	37	20	94	32	81	16	2	44	102	0	428
7	12:30 PM	47	12	84	42	62	5	1	38	79	1	371
8	12:45 PM	45	28	94	66	70	22	0	39	87	0	451
9	1:00 PM	42	30	84	49	74	18	1	43	102	3	446
10	1:15 PM	41	20	69	39	78	17	0	42	87	1	394
11	1:30 PM	54	18	66	31	68	11	1	43	75	3	370
12	1:45 PM	47	16	88	37	81	11	0	39	108	0	427

	Peak Hour Summary									
	NB		EB		WB	EB	SB		WB	
	L	R	T	R	L	L	L	R	T	R
Peak Hour Volume	171	90	356	189	287	61	4	164	370	4
% Heavy Vehicles	1%	0%	1%	1%	0%	0%	0%	0%	1%	0%
Peak Hour Factor	0.89		0.85		0.89	0.69	0.91		0.89	

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		Middlesex Avenue (CR 501) & New Durham Road (CR 501)/Memorial Parkway									Middlesex Ave & North Bank Drive		15-Min
		NB			EB		SB		WB		NB	SB	Sum
Interval	Start	L	T	R	L	T	L	R	T	R	L	R	
1	11:00 AM	5	60	0	91	6	0	116	4	2	0	0	284
2	11:15 AM	0	38	0	74	3	3	105	3	5	0	0	231
3	11:30 AM	0	66	1	60	3	3	103	1	2	0	0	239
4	11:45 AM	0	62	0	54	13	4	97	4	5	1	0	240
5	12:00 PM	1	57	1	79	4	5	101	1	5	0	0	254
6	12:15 PM	2	55	2	88	1	3	125	4	3	0	0	283
7	12:30 PM	0	48	0	81	13	3	91	2	2	1	0	241
8	12:45 PM	1	65	3	92	1	1	106	3	5	0	0	277
9	1:00 PM	0	65	0	81	3	4	109	6	6	0	0	274
10	1:15 PM	1	44	1	78	8	4	111	0	6	0	0	253
11	1:30 PM	2	62	0	56	1	1	96	1	1	0	0	220
12	1:45 PM	0	49	0	89	2	5	124	4	2	0	0	275

	Peak Hour Summary									
	NB			EB		SB		WB		NB	SB
	L	T	R	L	T	L	R	T	R	L	R
Peak Hour Volume	3	233	5	342	18	11	431	15	16	1	0
% Heavy Vehicles	0%	0%	0%	1%	0%	0%	1%	0%	6%	0%	0%
Peak Hour Factor		0.86		0.96		0.86		0.65		0.25	No Data

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		Middlesex Avenue (CR 501) & East Bank Driveway				Middlesex Avenue (CR 501) & Factory Street						15-Min
		NB	EB		SB	NB		EB		SB		Sum
Interval	Start	L	L	R	R	L	T	L	R	T	R	
1	11:00 AM	0	1	0	0	0	153	0	0	116	0	270
2	11:15 AM	0	0	1	1	0	117	1	2	108	1	231
3	11:30 AM	1	1	1	2	0	128	0	0	106	0	239
4	11:45 AM	1	1	4	1	0	121	2	1	101	2	234
5	12:00 PM	0	1	0	1	0	141	0	1	106	1	251
6	12:15 PM	0	1	1	0	0	146	2	0	128	1	279
7	12:30 PM	0	0	1	0	0	131	1	1	94	3	231
8	12:45 PM	0	0	1	0	0	162	2	1	107	3	276
9	1:00 PM	0	0	0	0	0	152	1	0	113	2	268
10	1:15 PM	0	0	0	0	0	128	0	1	115	0	244
11	1:30 PM	0	0	0	1	0	119	0	5	97	0	222
12	1:45 PM	0	0	1	0	0	140	0	0	129	0	270

	Peak Hour Summary									
	NB	EB		SB	NB		EB		SB	
	L	L	R	R	L	T	L	R	T	R
Peak Hour Volume	0	1	3	0	0	591	6	2	442	9
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	No Data	0.50		No Data	0.91		0.67		0.87	

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		Middlesex Avenue (NJ Route 27) & Main Street (CR 531)												15-Min
		NB			EB			SB			WB			Sum
Interval	Start	L	T	R	L	T	R	L	T	R	L	T	R	
1	11:00 AM	21	34	21	14	95	24	14	95	24	25	95	18	480
2	11:15 AM	19	32	15	11	111	18	11	111	18	23	87	7	463
3	11:30 AM	23	46	24	10	89	25	10	89	25	19	78	18	456
4	11:45 AM	21	41	16	11	91	26	11	91	26	30	90	12	466
5	12:00 PM	30	41	16	18	90	38	12	25	2	24	74	10	380
6	12:15 PM	23	39	7	11	114	22	13	32	7	20	91	6	385
7	12:30 PM	29	45	20	7	128	22	14	38	8	23	88	10	432
8	12:45 PM	32	45	13	7	115	24	18	28	11	31	111	8	443
9	1:00 PM	30	61	13	7	118	30	16	26	8	18	73	9	409
10	1:15 PM	22	41	11	17	117	24	17	36	7	22	80	7	401
11	1:30 PM	14	34	13	9	112	19	11	31	7	21	90	11	372
12	1:45 PM	24	42	16	4	88	22	19	31	8	19	85	14	372

	Peak Hour Summary											
	NB			EB			SB			WB		
	6	T	R	L	T	R	L	T	R	L	T	R
Peak Hour Volume	114	190	53	32	475	98	61	124	34	92	363	33
% Heavy Vehicles	0%	0%	0%	0%	0%	2%	0%	0%	0%	1%	1%	3%
Peak Hour Factor		0.86			0.96			0.91			0.81	

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		Middlesex Avenue (CR 501) & Central Avenue (CR 669)										15-Min
		WB			NB		EB			SB		Sum
Interval	Start	L	T	R	L	R	L	T	R	L	R	
1	11:00 AM	18	33	11	11	40	5	13	8	41	8	188
2	11:15 AM	67	65	17	17	60	3	7	8	39	13	296
3	11:30 AM	20	28	4	5	16	1	7	5	26	4	116
4	11:45 AM	34	39	10	8	44	4	6	9	31	4	189
5	12:00 PM	33	52	6	6	52	4	12	2	29	6	202
6	12:15 PM	36	51	3	13	42	7	13	7	47	6	225
7	12:30 PM	38	56	7	11	35	3	16	4	28	8	206
8	12:45 PM	35	47	10	15	42	6	14	12	33	8	222
9	1:00 PM	39	40	8	13	40	6	16	13	35	9	219
10	1:15 PM	31	47	12	12	44	9	15	10	43	11	234
11	1:30 PM	32	44	9	8	43	6	12	10	38	6	208
12	1:45 PM	30	40	11	11	40	7	14	7	29	9	198

	Peak Hour Summary									
	WB			NB		EB			SB	
	6	T	R	L	R	L	T	R	L	R
Peak Hour Volume	148	194	28	52	159	22	59	36	143	31
% Heavy Vehicles	0%	2%	4%	0%	3%	0%	0%	0%	2%	0%
Peak Hour Factor		0.92			0.93		0.84			0.82

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		EB	NB		WB	WB		NB	SB			Sum
Interval	Start	R	L	R	L	L	R	R	L	T	R	
1	11:00 AM	0	4	1	2	47	27	19	45	75	0	220
2	11:15 AM	1	1	1	0	54	35	23	50	88	0	253
3	11:30 AM	2	2	1	0	26	41	18	49	77	0	216
4	11:45 AM	1	3	4	3	50	38	22	65	66	0	252
5	12:00 PM	0	3	2	2	57	33	18	47	78	0	240
6	12:15 PM	0	3	2	0	49	31	25	53	89	3	255
7	12:30 PM	0	0	1	1	48	36	31	51	70	1	239
8	12:45 PM	1	0	0	1	33	32	17	57	83	0	224
9	1:00 PM	1	1	2	0	49	26	29	48	75	0	231
10	1:15 PM	0	0	0	0	49	21	14	45	65	0	194
11	1:30 PM	0	1	0	0	50	38	28	56	75	0	248
12	1:45 PM	2	0	1	0	41	26	18	44	87	0	219

Peak Hour Summary										
	EB	NB		WB	WB		NB	SB		
	R	L	R	L	L	R	R	L	T	R
Peak Hour Volume	2	4	5	2	179	125	102	209	317	4
% Heavy Vehicles	0%	0%	0%	0%	4%	1%	3%	1%	1%	0%
Peak Hour Factor	0.50	0.45		0.50	0.90		0.82	0.91		

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		Durham Avenue & Central Avenue (CR 669)									15-Min	Hour
		NB		EB		SB		WB			Sum	Sum
Interval	Start	L	T	L	R	T	R	L	T	R		
1	11:00 AM	9	53	50	13	39	40	5	16	3	228	8184
2	11:15 AM	3	57	41	11	66	65	5	9	2	259	8167
3	11:30 AM	4	57	46	16	57	70	4	12	8	274	8169
4	11:45 AM	15	62	56	13	69	57	5	12	11	300	8255
5	12:00 PM	10	59	62	12	81	71	0	14	5	314	8364
6	12:15 PM	10	63	34	14	60	60	2	5	0	248	8429
7	12:30 PM	10	57	37	18	68	81	7	17	1	296	8350
8	12:45 PM	10	60	56	20	70	59	3	10	2	290	8277
9	1:00 PM	9	62	50	11	63	70	2	8	5	280	8153
10	1:15 PM	6	77	50	8	82	70	1	7	3	304	
11	1:30 PM	7	77	53	9	64	70	7	13	3	303	
12	1:45 PM	8	74	49	11	68	68	5	11	4	298	

	Peak Hour Summary								
	NB		EB		SB		WB		
	6	T	L	R	T	R	L	T	R
Peak Hour Volume	39	242	177	63	261	270	14	40	8
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.96		0.79		0.89		0.62		

C | ITE Trip Generation

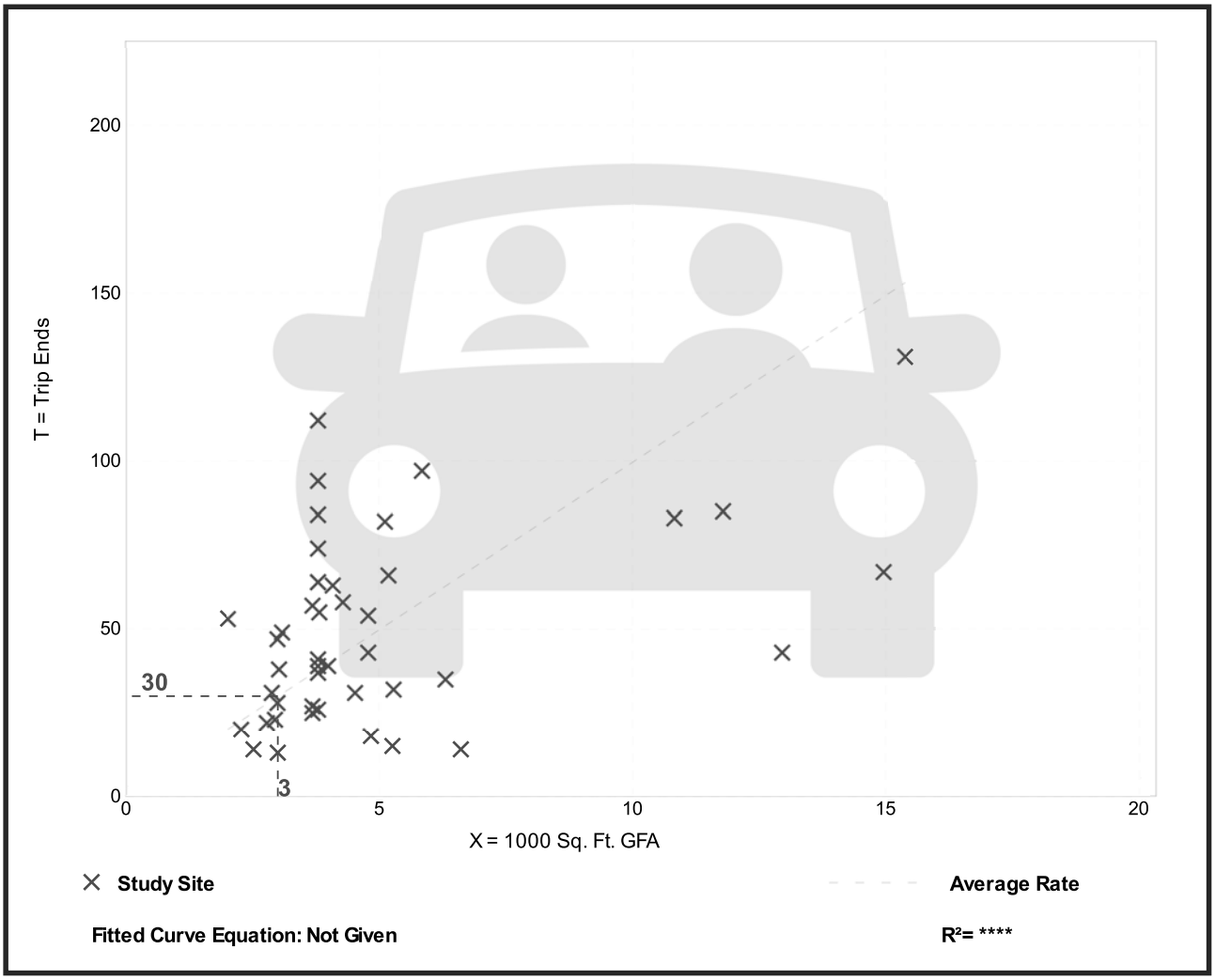
Drive-in Bank
(912)

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: 5
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.95	2.12 - 29.47	6.00

Data Plot and Equation



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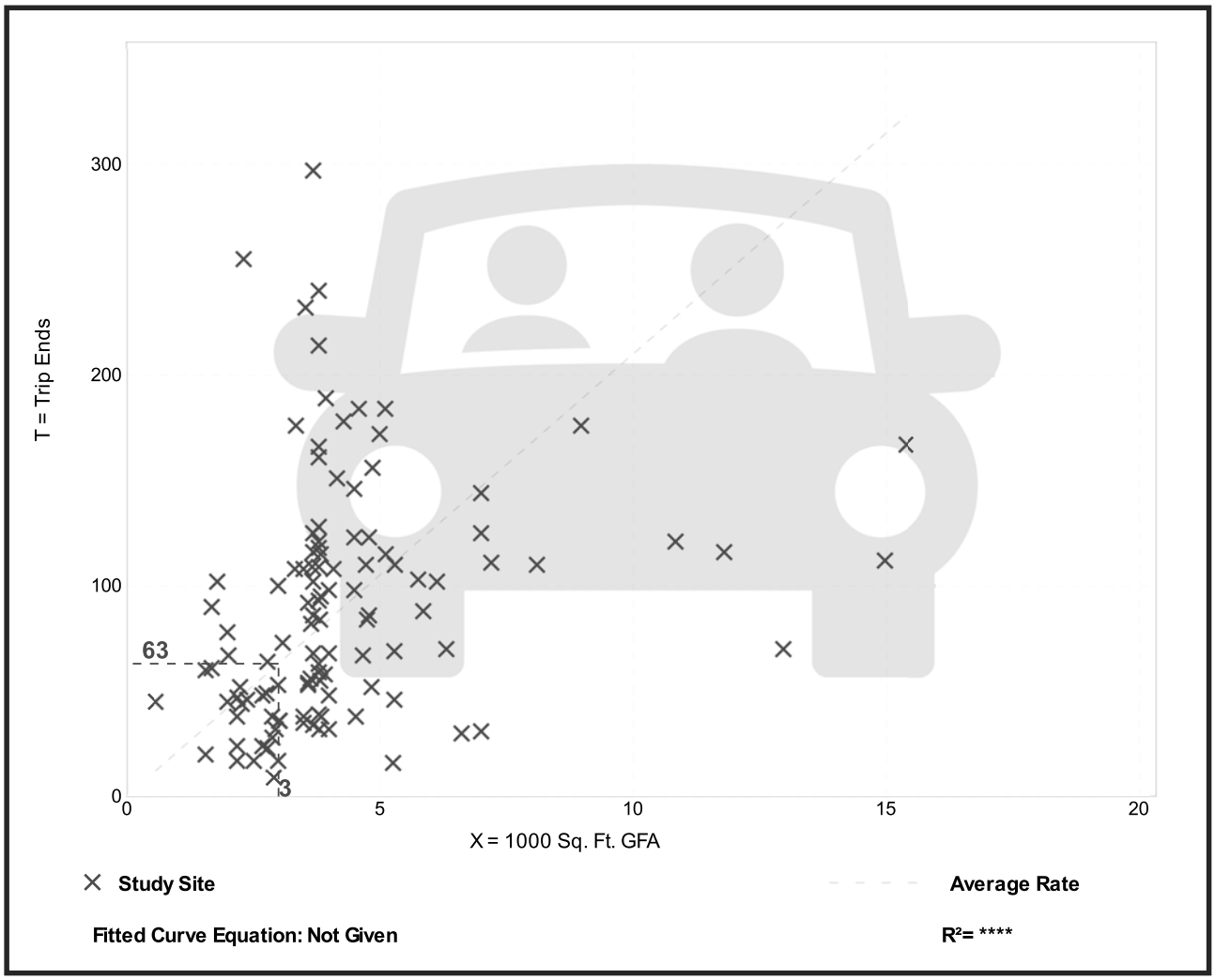
Drive-in Bank
(912)

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: 114
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
21.01	3.04 - 109.91	15.13

Data Plot and Equation



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Drive-in Bank
(912)

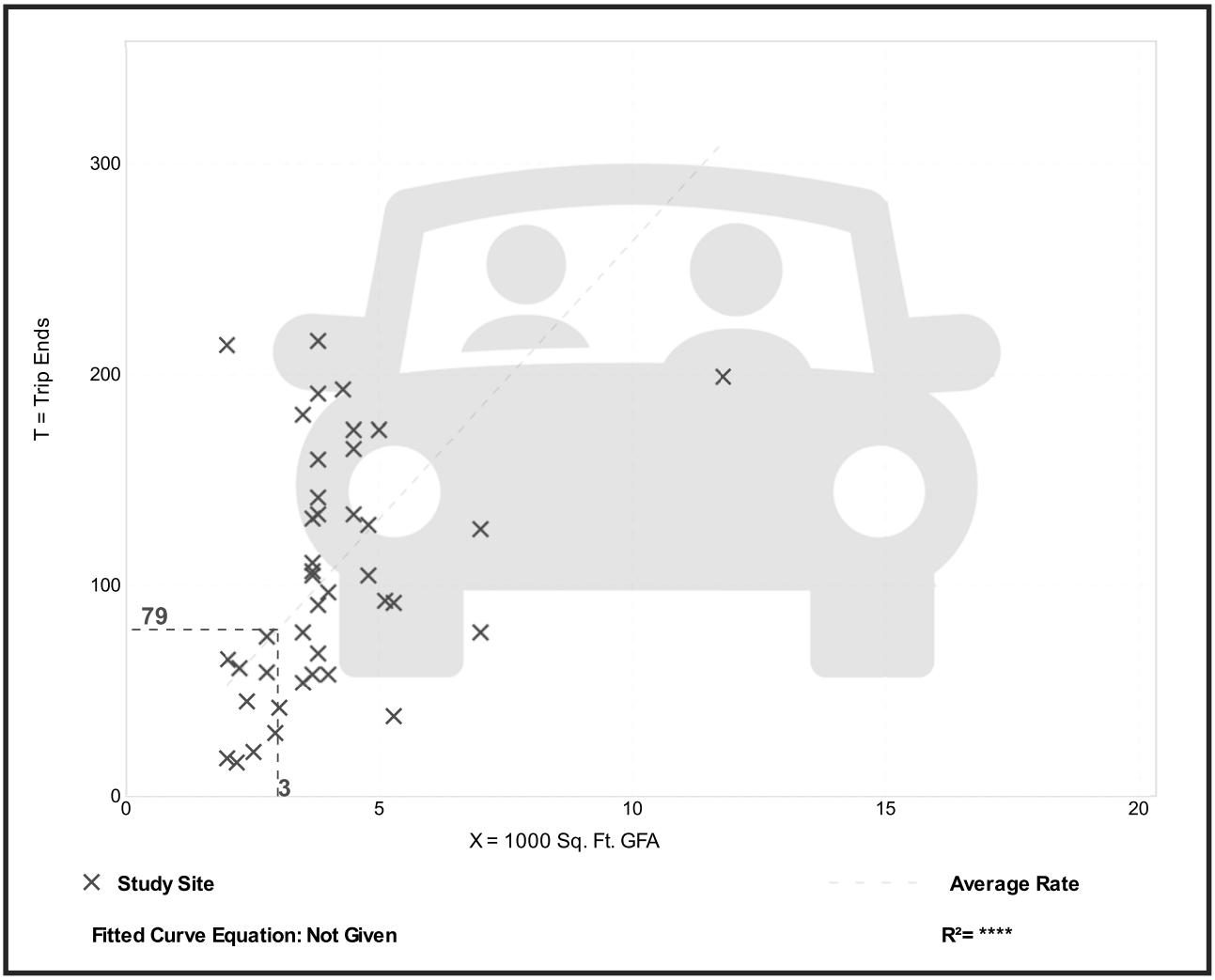
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 41
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
26.35	7.18 - 107.00	15.32

Data Plot and Equation



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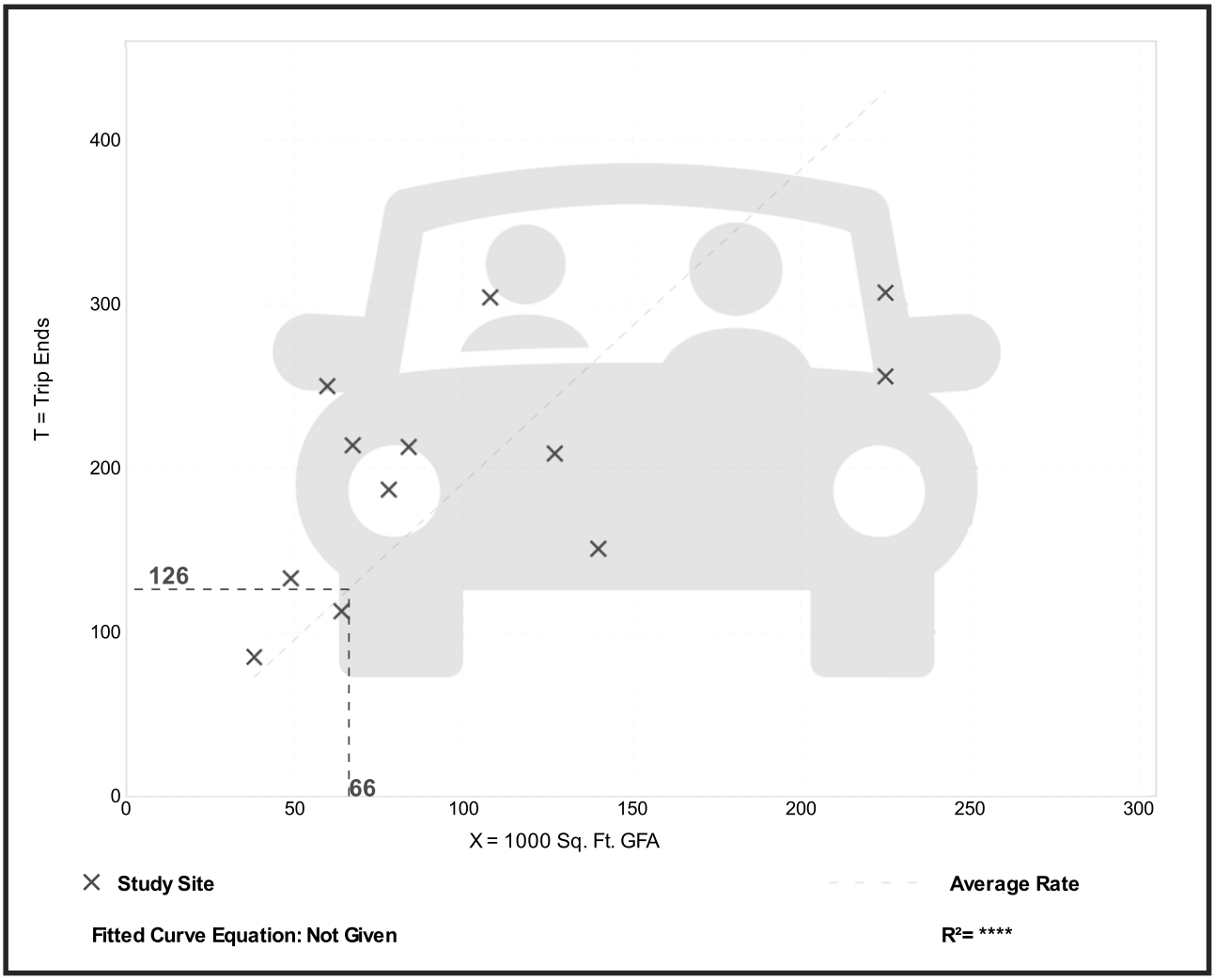
Recreational Community Center
(495)

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: 12
Avg. 1000 Sq. Ft. GFA: 105
Directional Distribution: 66% entering, 34% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.91	1.08 - 4.18	0.88

Data Plot and Equation



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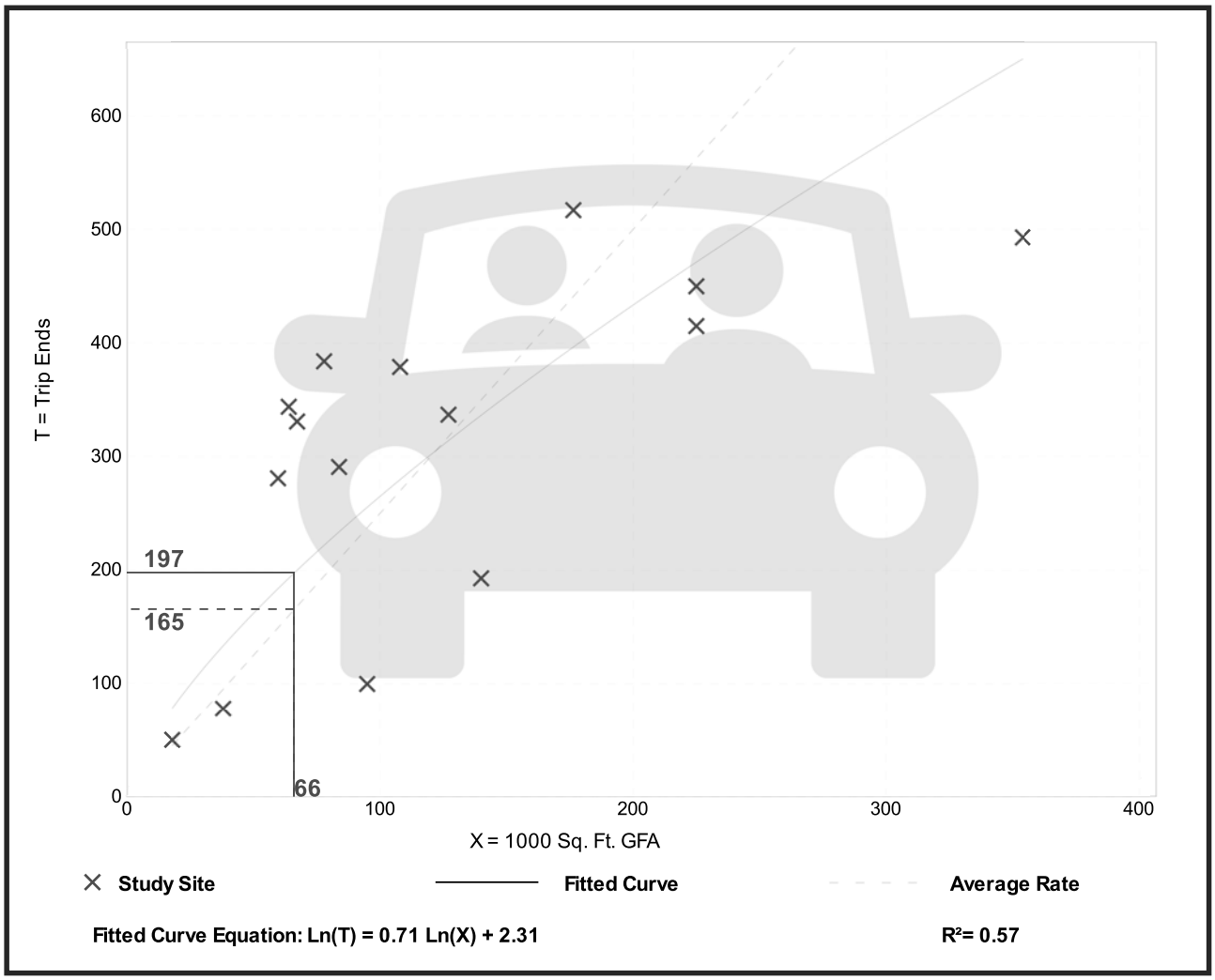
Recreational Community Center
(495)

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: 15
Avg. 1000 Sq. Ft. GFA: 124
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.50	1.05 - 5.37	1.28

Data Plot and Equation



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Recreational Community Center
(495)

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

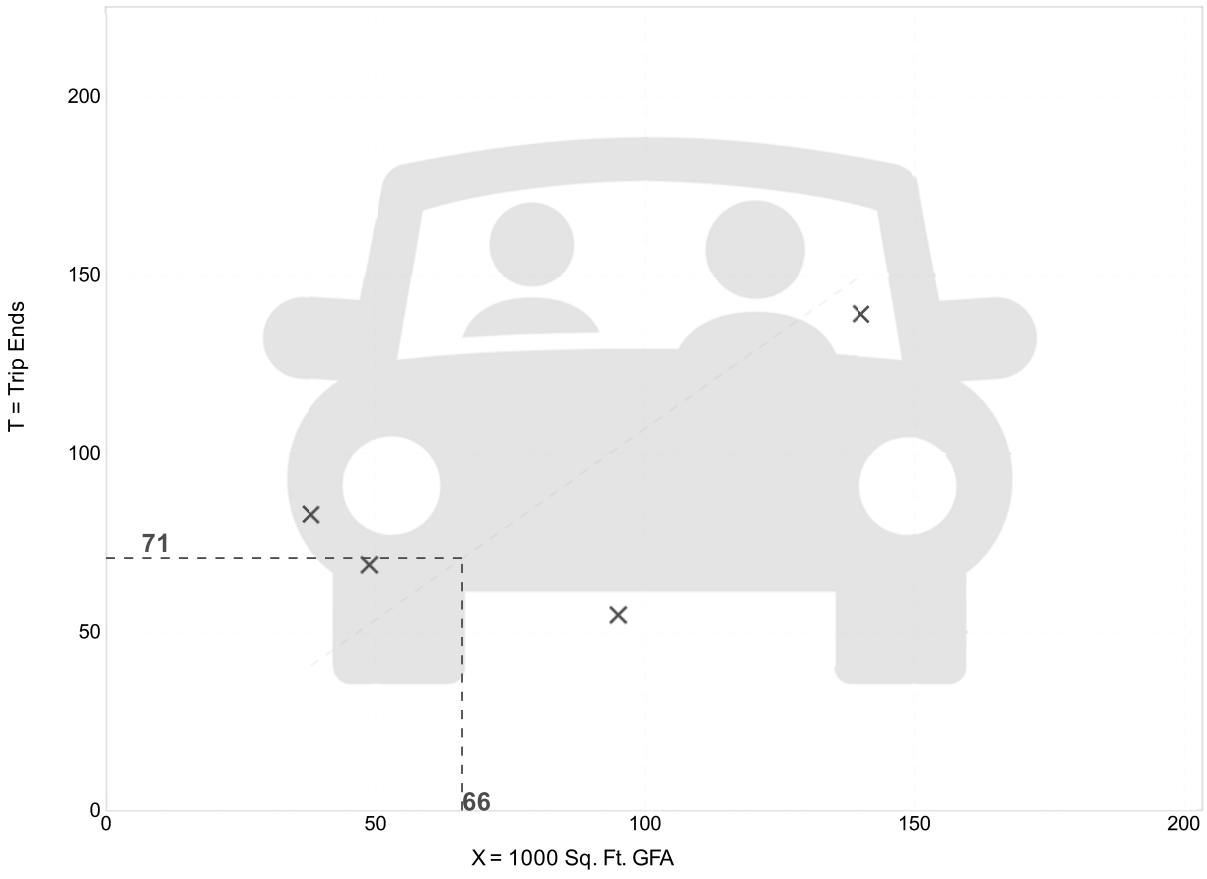
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GFA: 81
Directional Distribution: 54% entering, 46% exiting

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



Fitted Curve Equation: Not Given

R^2= ****

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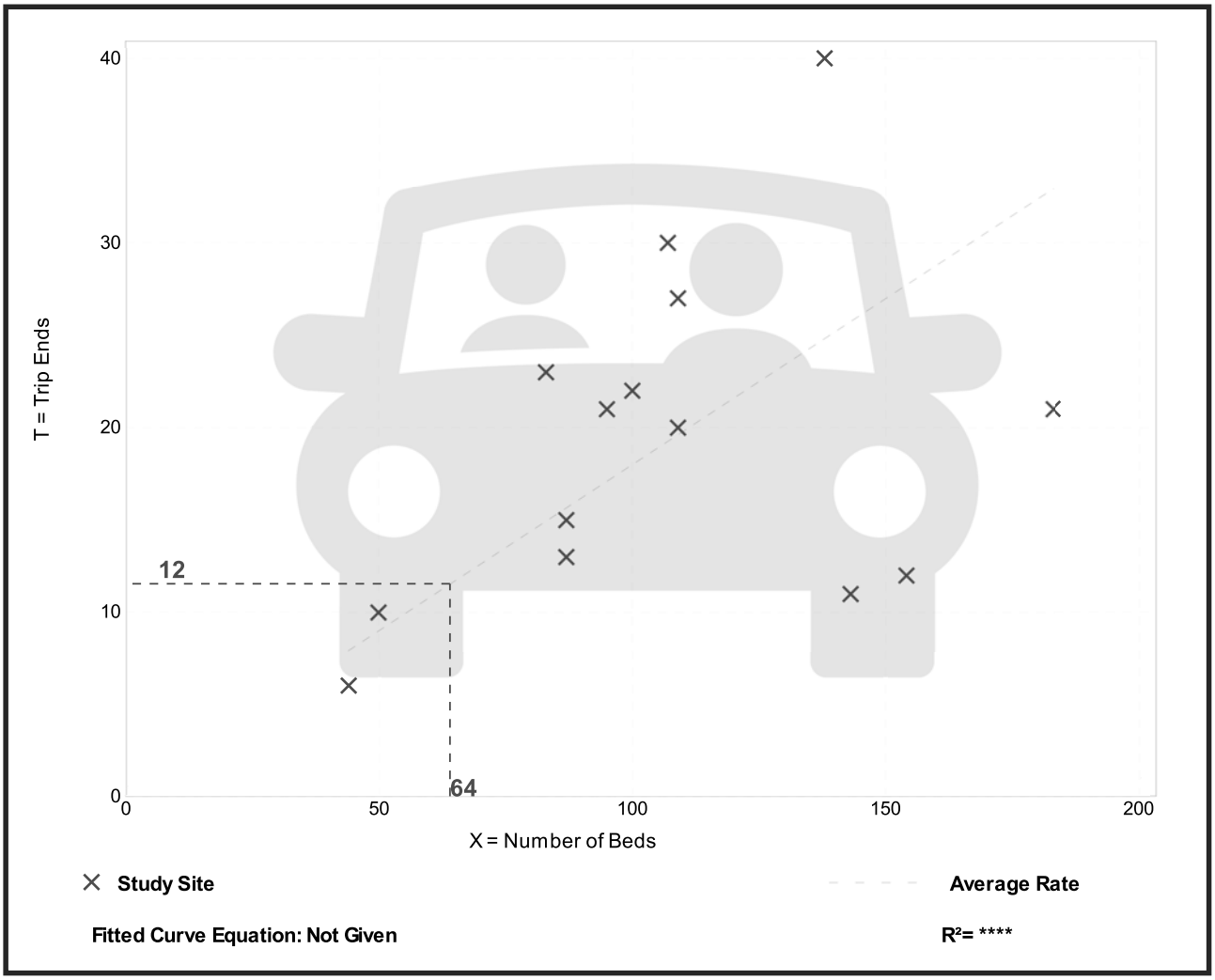
Assisted Living
(254)

Vehicle Trip Ends vs: **Beds**
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: 14
Avg. Num. of Beds: 106
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.29	0.08

Data Plot and Equation



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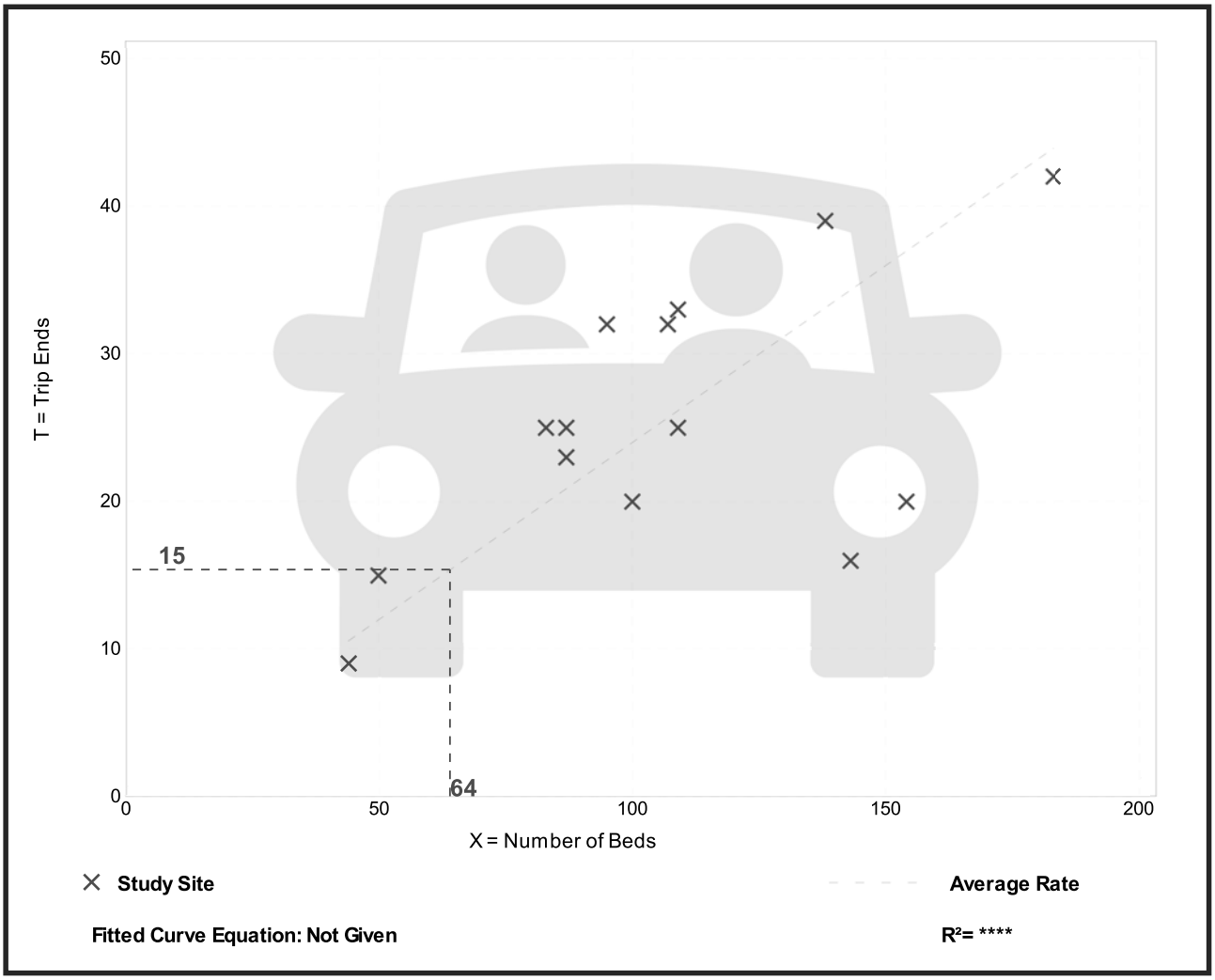
Assisted Living
(254)

Vehicle Trip Ends vs: **Beds**
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: 14
Avg. Num. of Beds: 106
Directional Distribution: 39% entering, 61% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.24	0.11 - 0.34	0.07

Data Plot and Equation



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Assisted Living
(254)

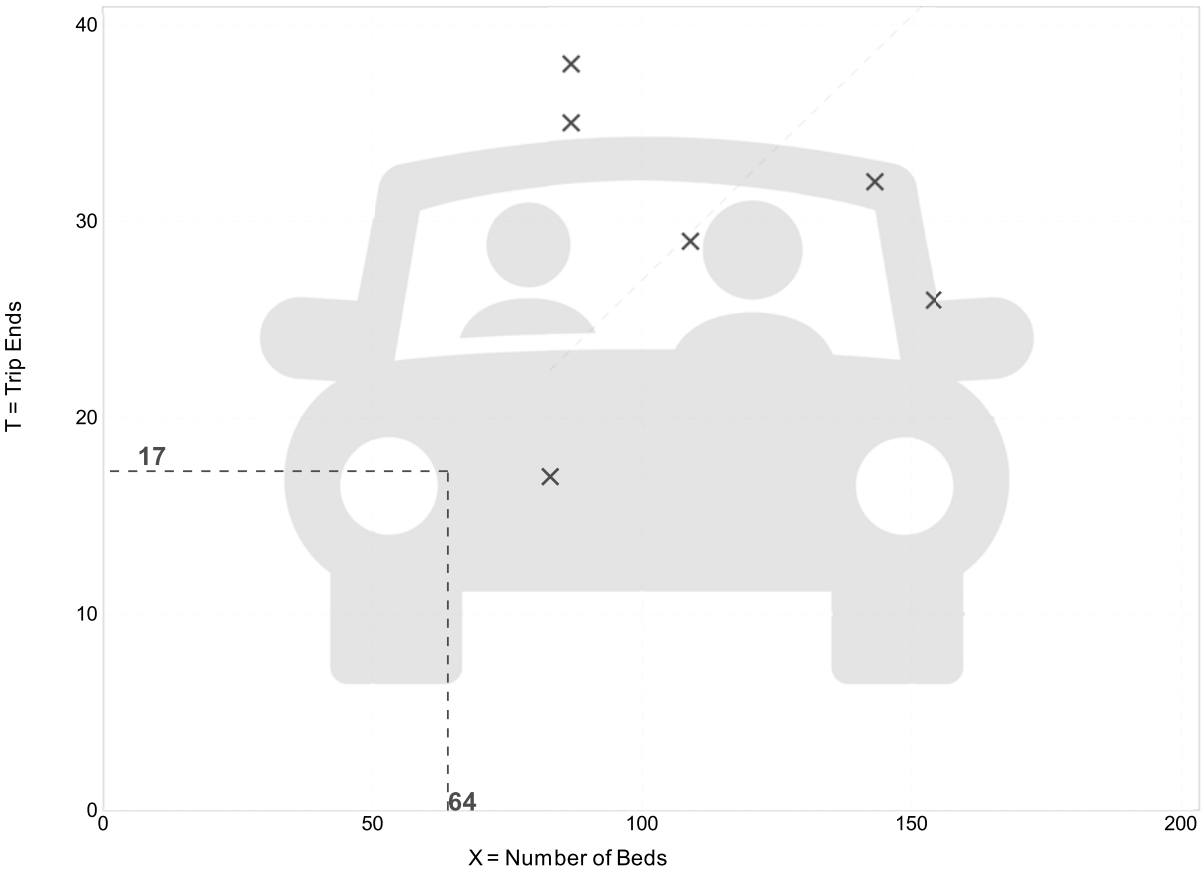
Vehicle Trip Ends vs: **Beds**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Beds: 111
Directional Distribution: 46% entering, 54% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.27	0.17 - 0.44	0.11

Data Plot and Equation



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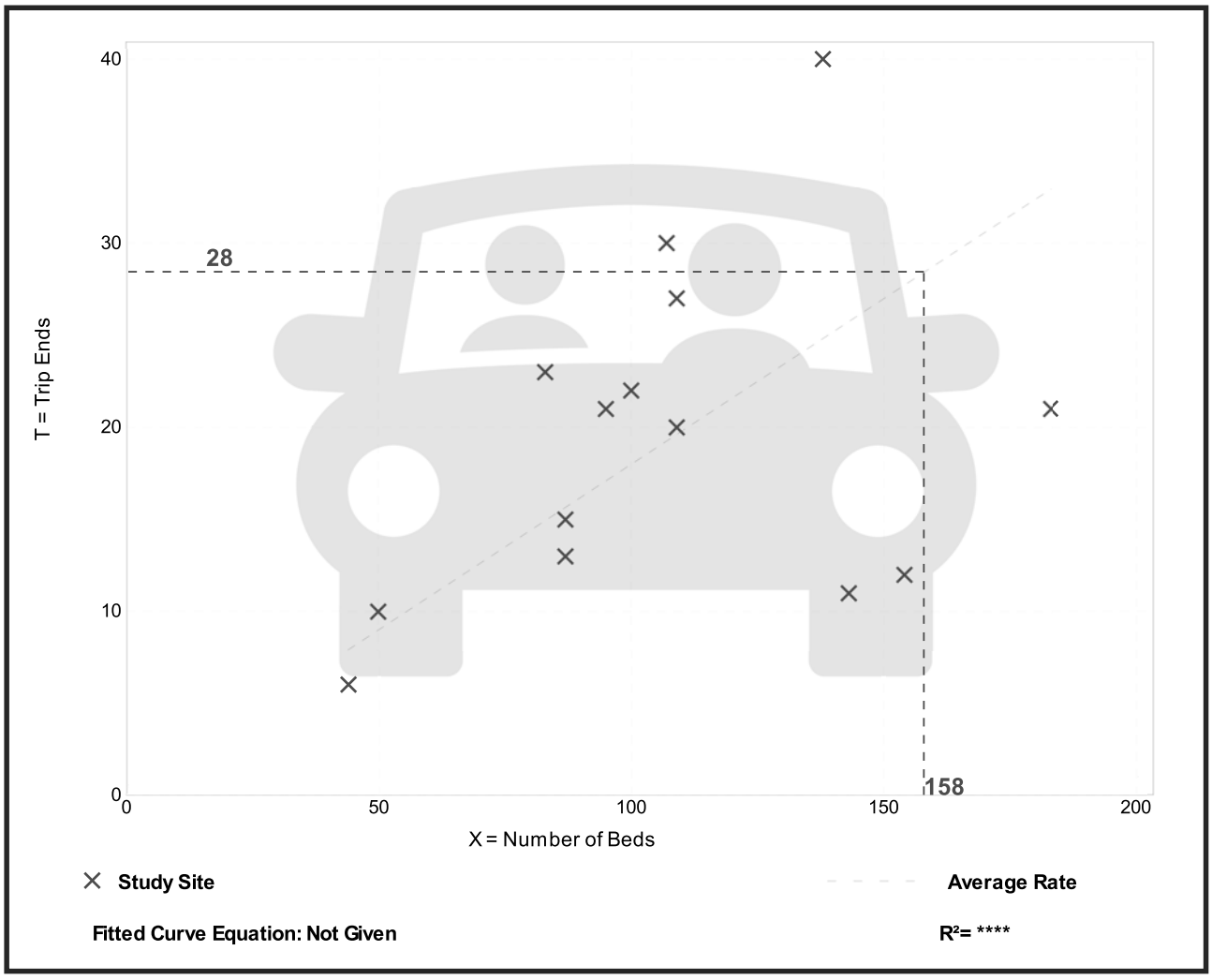
Assisted Living
(254)

Vehicle Trip Ends vs: **Beds**
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: 14
Avg. Num. of Beds: 106
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.29	0.08

Data Plot and Equation



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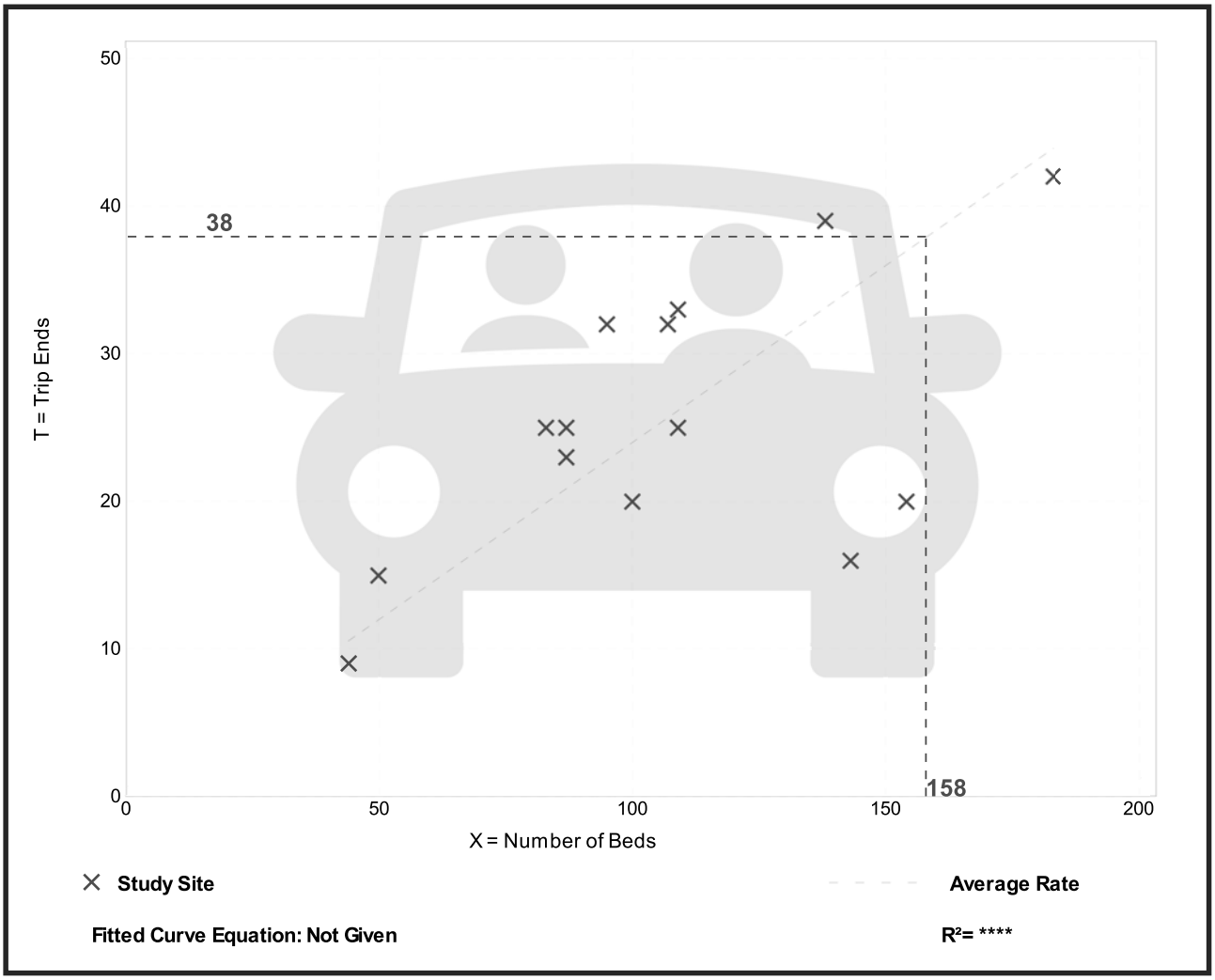
Assisted Living
(254)

Vehicle Trip Ends vs: **Beds**
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: 14
Avg. Num. of Beds: 106
Directional Distribution: 39% entering, 61% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.24	0.11 - 0.34	0.07

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Assisted Living
(254)

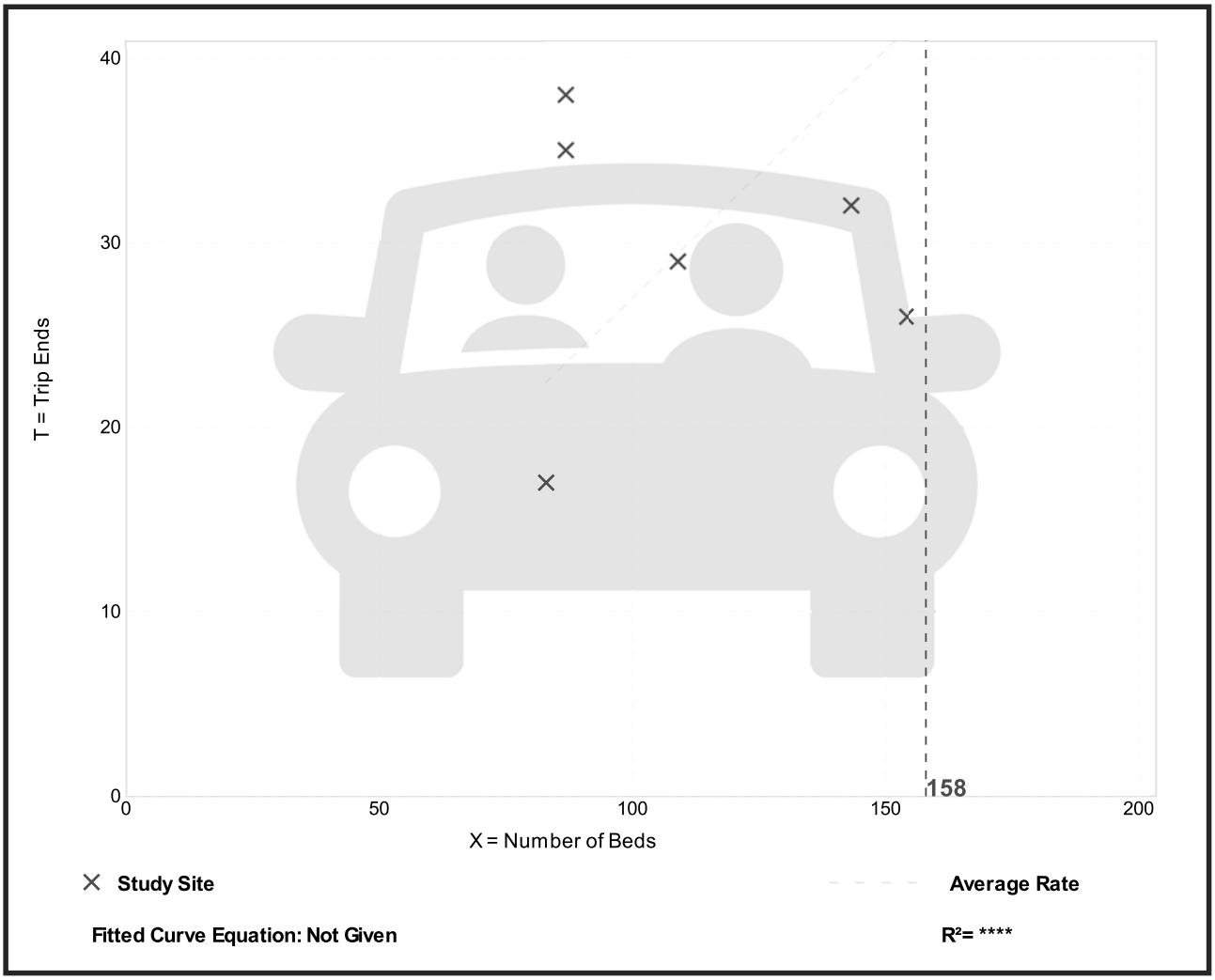
Vehicle Trip Ends vs: **Beds**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Beds: 111
Directional Distribution: 46% entering, 54% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.27	0.17 - 0.44	0.11

Data Plot and Equation



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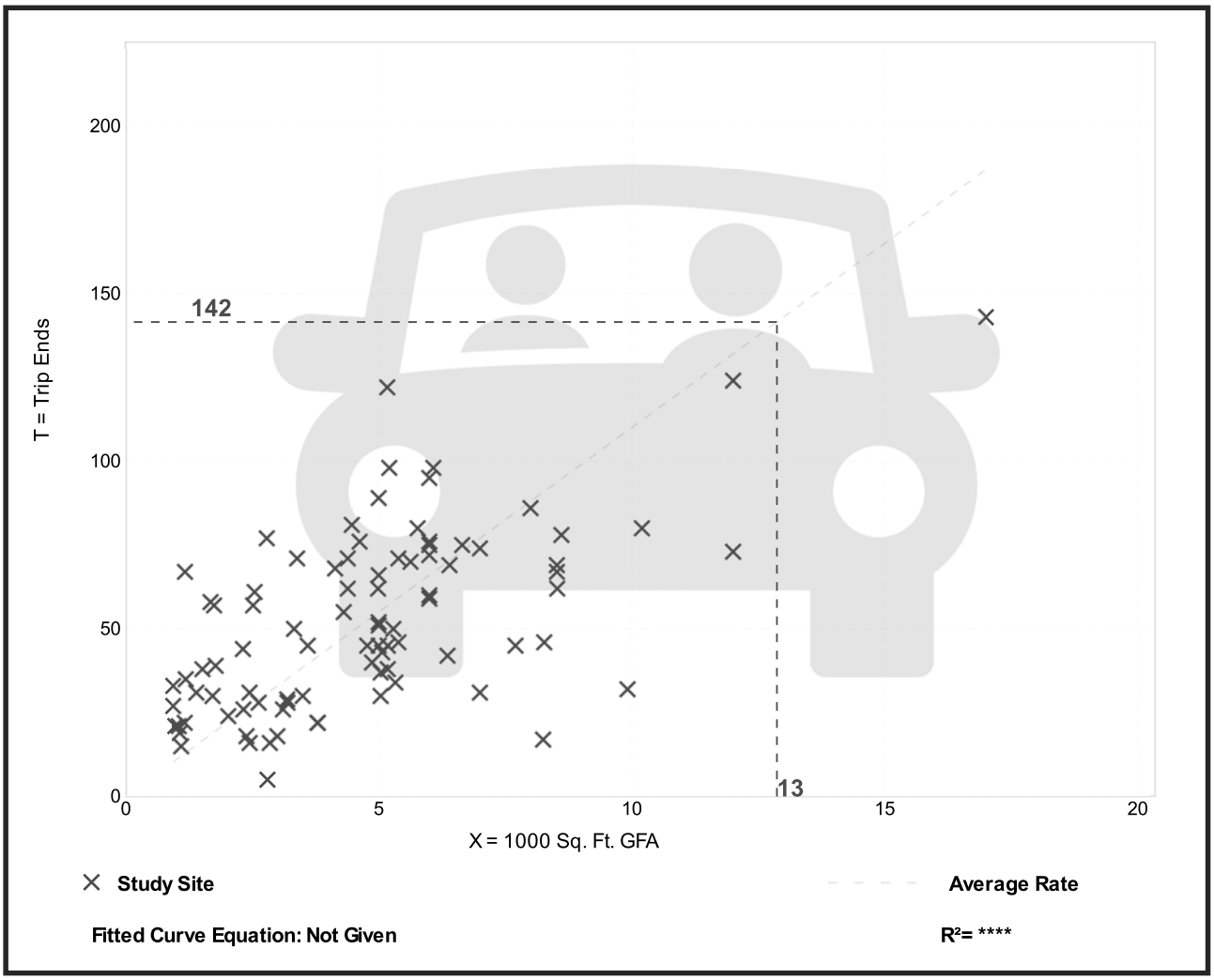
Day Care Center
(565)

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: 89
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.00	1.79 - 57.02	6.08

Data Plot and Equation



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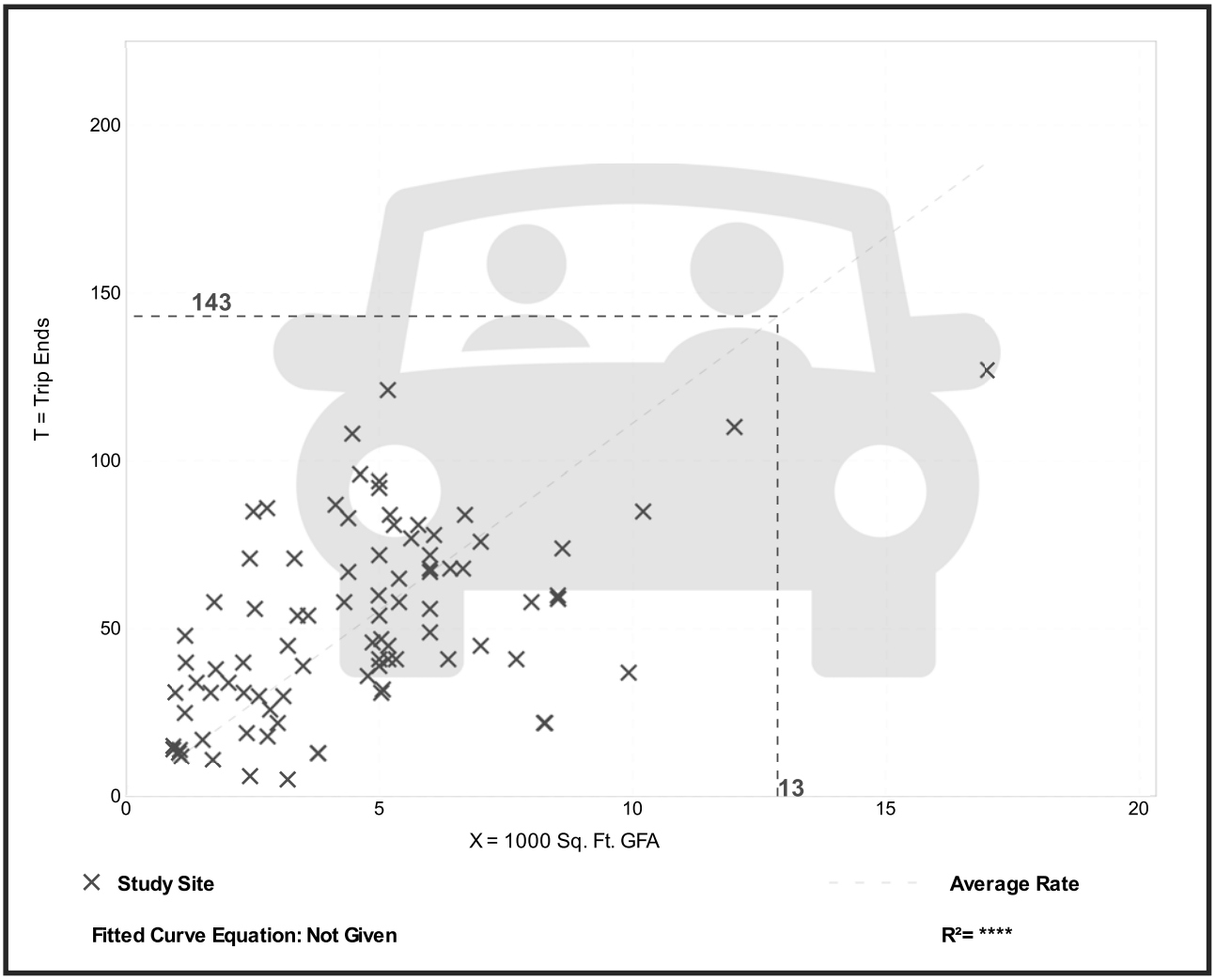
Day Care Center
(565)

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: 90
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.12	1.56 - 40.85	6.28

Data Plot and Equation



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Day Care Center
(565)

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

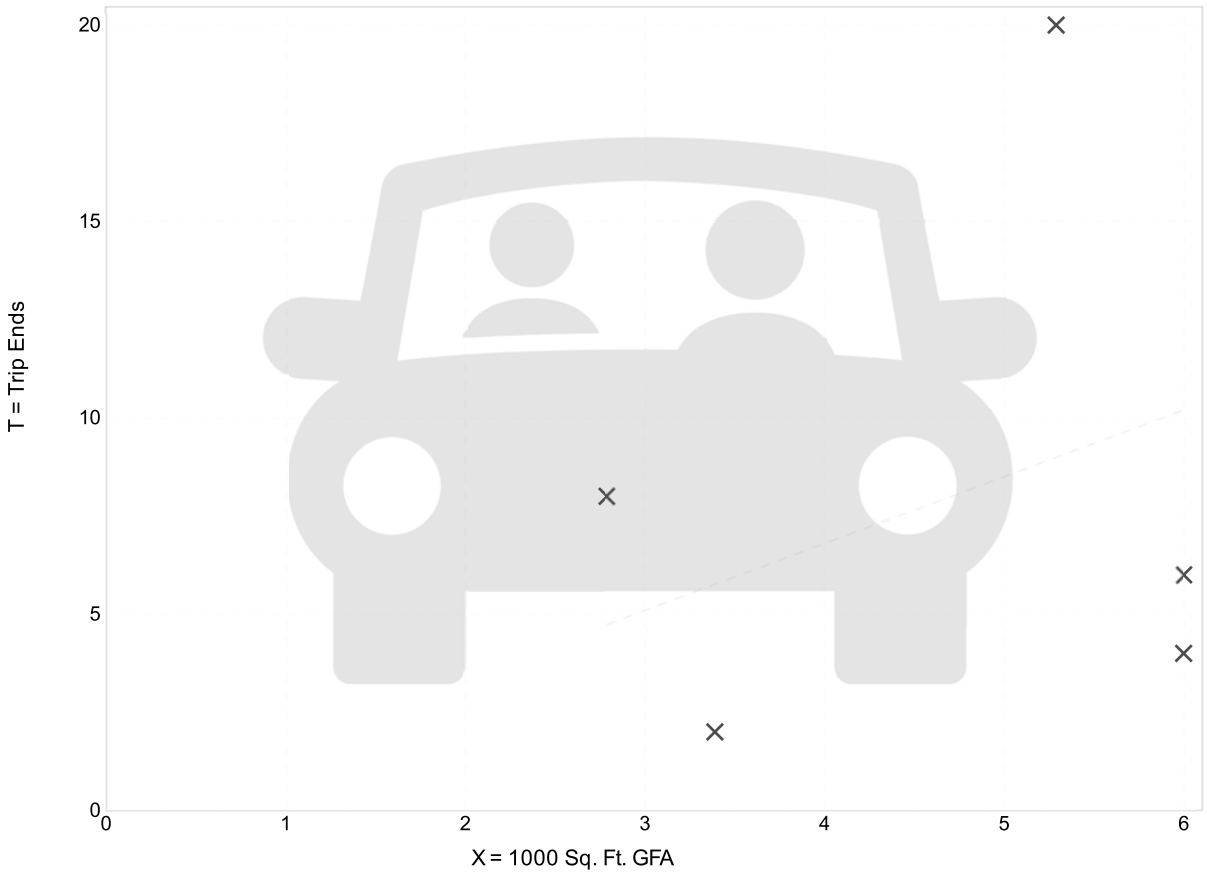
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.70	0.59 - 3.78	1.46

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ****

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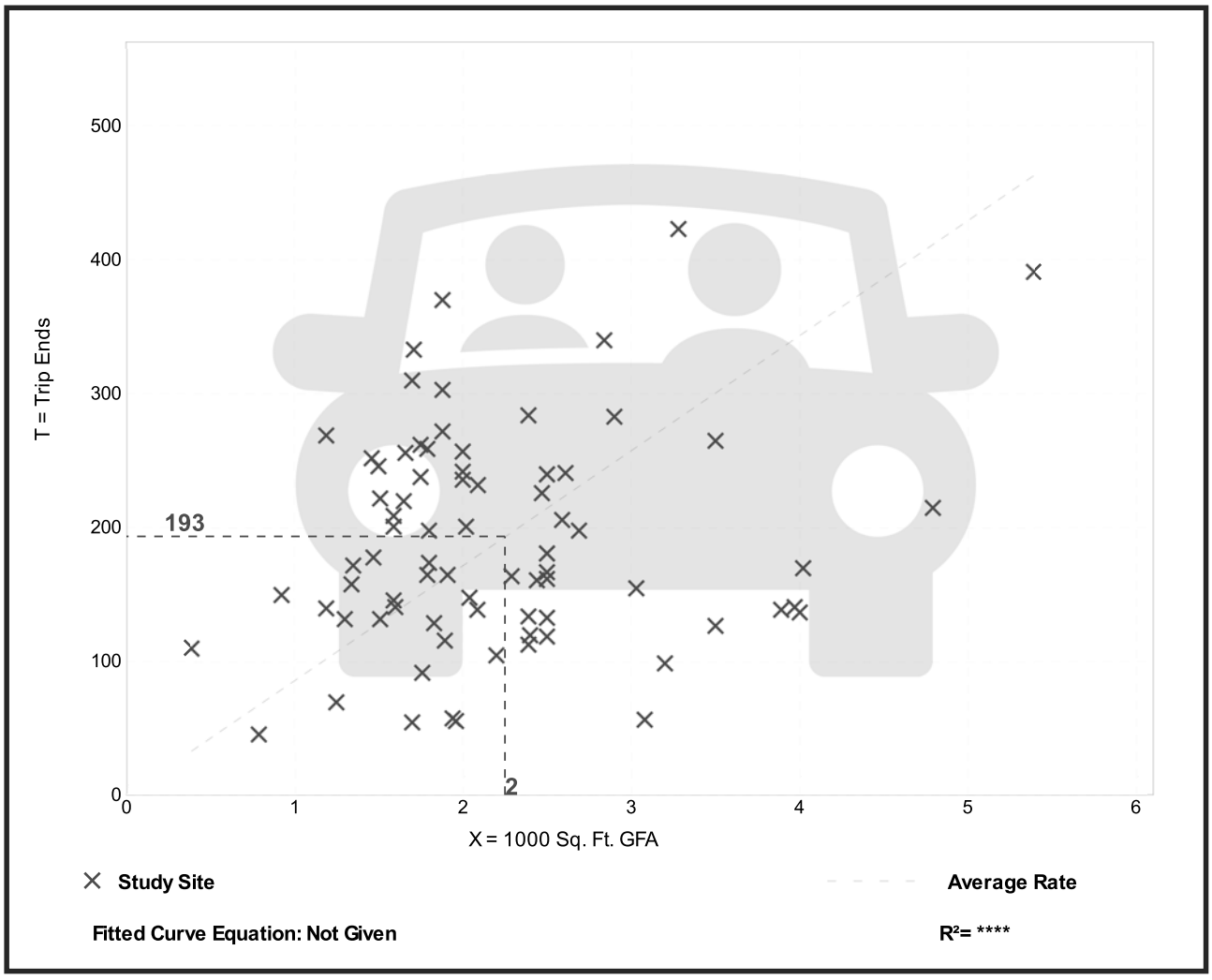
Coffee/Donut Shop with Drive-Through Window
(937)

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:	78
Avg. 1000 Sq. Ft. GFA:	2
Directional Distribution:	51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
85.88	18.51 - 282.05	44.92

Data Plot and Equation



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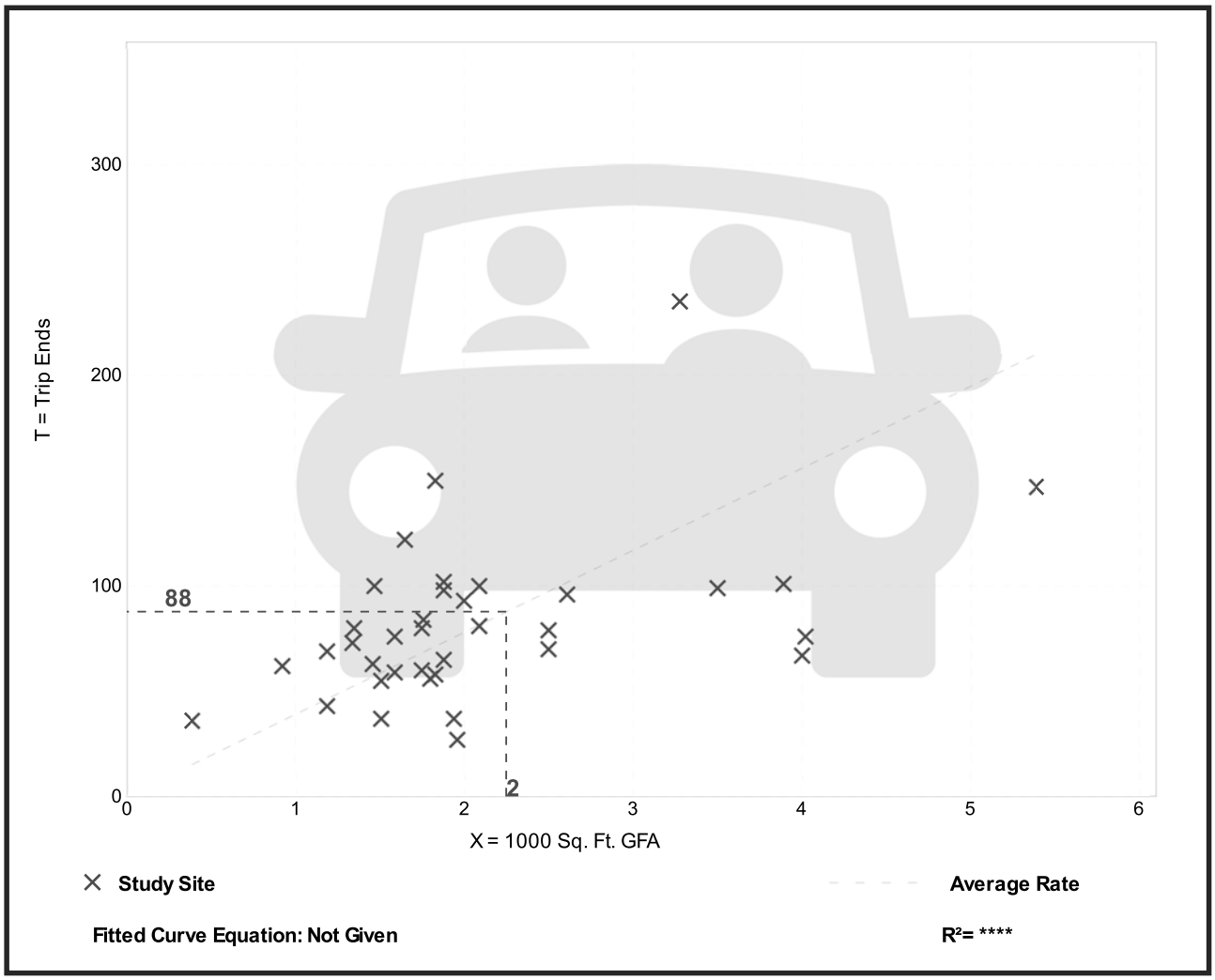
Coffee/Donut Shop with Drive-Through Window
(937)

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: 36
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
38.99	13.78 - 92.31	17.79

Data Plot and Equation



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Coffee/Donut Shop with Drive-Through Window
(937)

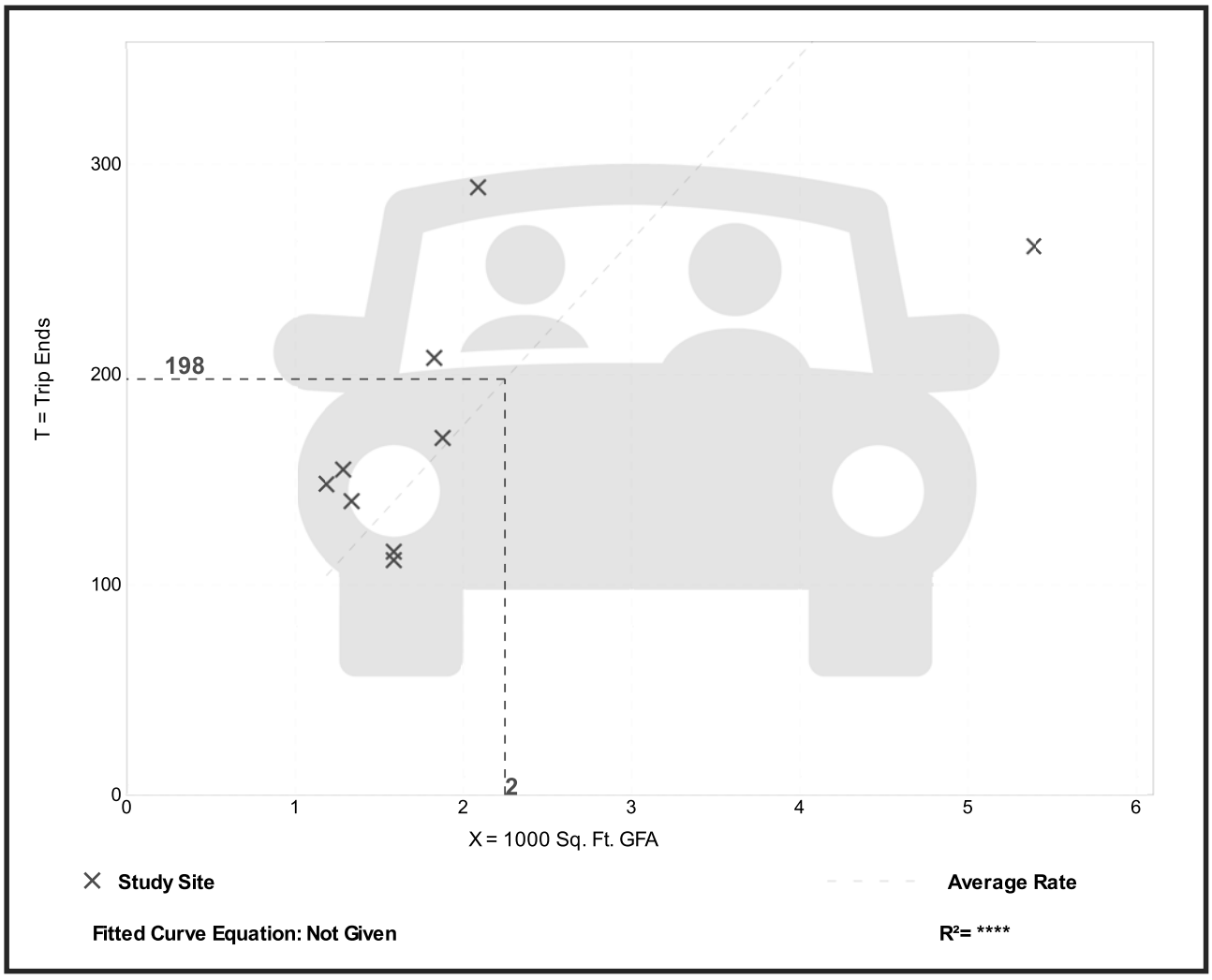
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 9
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
87.91	48.42 - 138.28	34.34

Data Plot and Equation



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D | Level of Service Descriptions

Table 1
Level of Service and Average Delay
For Unsignalized Intersections

Level of Service	Average Delay (seconds/vehicle)
A	Up to 10 seconds
B	More than 10 seconds; up to 15 seconds
C	More than 15 seconds; up to 25 seconds
D	More than 25 seconds; up to 35 seconds
E	More than 35 seconds; up to 50 seconds
F	More than 50 seconds

Table 2
Level of Service and Average Delay
For Signalized Intersections

Level of Service	Average Delay (seconds/vehicle)	Description
A	Up to 10 seconds	Very short delay, good progression; most vehicles do not stop at intersection.
B	More than 10 seconds Up to 20 seconds	Generally good signal progression and/or short cycle length; more vehicles stop at intersection than Level of Service A.
C	More than 20 seconds Up to 35 seconds	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection.
D	More than 35 seconds Up to 55 seconds	Congestion becomes noticeable; individual cycle failures; longer delays from unfavorable progression, long cycle length; or high volume/capacity ratios; most vehicles stop at intersection.
E	More than 55 seconds Up to 80 seconds	Usually considered limit of acceptable delay indicative of poor progression long cycle length, or high volume/capacity ratio; frequent individual cycle failures.
F	More than 80 seconds	Could be considered excessive delay in some areas, frequently an indication or over-saturation (i.e., arrival flows exceed capacity), or very long cycle lengths with minimal side street green time. Capacity is not necessarily exceeded under this Level of Service.

Reference: ***Highway Capacity Manual***, (HCM2010), 2010, Transportation Research Board, Washington, D.C.

E | Signal Timings and Directives

CENTRAL AVENUE AND DURHAM AVENUE
BOROUGH OF METUCHEN
September 17, 1987
TSP #192

SIGNAL TIMING

PHASE	SIGNAL FACE 1-6	SIGNAL FACE 7-12	%	TIME(SECS)
1 CENTRAL AVENUE R.O.W.	G	R	44	30.8
CHANGE	Y	R	5	3.5
CLEAR	R	R	2	1.4
2 DURHAM AVENUE R.O.W.	R	G	42	29.4
CHANGE	R	Y	5	3.5
CLEAR	R	R	2	1.4
EMERGENCY FLASH	Y	R		50-60 per minute
			100%	70 secs.

1. There is a 70 second background cycle.

D.O.T.
6-94

MET-010

NEW DURHAM ROAD SIGNAL TIMING

(WITH PEDESTRIAN ACTIVATION)

Date: 11-Oct-90
Rev.: 06-Sep-94
Rev.: 30-Dec.-99

PHASE	New Durham Road Eastbound 1,2	Eastbound 3,4	Westbound 5,6	Westbound 7-9	Bridge St. 10,11	John St. 12,13	Pedestrian Signals New Durham 14,15	New Durham 16,17	Bridge 18,19	John 20,21	Off-Peak TIME	Peak-Time 6:30-9:30 am 3:30-7:30 p.m.
A	G	G	G	G	R	R	DW	DW	W	W	24(Min.)	24(Min.)
Ped.Clear	G	G	G	G	R	R	DW	DW	FDW	FDW	10	10
Veh. Extens.	G	G	G	G	R	R	DW	DW	DW	DW	-	36
Change	Y	G	G	Y	R	R	DW	DW	DW	DW	4	4
Veh.Clear	R	G	G	R	R	R	DW	DW	DW	DW	2	2
B	R	G	G	R	R	R	DW	DW	DW	DW	2	2
Change	R	[4] G	[6] Y	R	R	R	DW	DW	DW	DW	4	4
Veh.Clear	R	[5] G	[6] R	R	R	R	DW	DW	DW	DW	3	3
C	R	G/G←	R	R	G	R/G→	W	DW	DW	DW	4	4
Ped.Clear	R	G/G←	R	R	G	R/G→	FDW	DW	DW	DW	8	8
Veh. Extens.	R	G/G←	R	R	G	R/G→	DW	DW	DW	DW	-	3
Change	R	[7] Y/Y←	R	R	Y	[12] R/G→	DW	DW	DW	DW	3	3
Veh.Clear	R	[8] R	R	R	R	[13] R/G→	DW	DW	DW	DW	3	3
D	R	R	G/G←	R	R	G/G→	DW	W	DW	DW	4	4
Ped.Clear	R	R	G/G←	R	R	G/G→	DW	FDW	DW	DW	8	8
Change	R	R	[9] G/G←	R	R	Y/Y→	DW	DW	DW	DW	3	3
Veh.Clear	R	R	[10] G/G←	R	R	R	DW	DW	DW	DW	3	3
E	R	G/G←	G/G←	R	R	R	DW	DW	DW	DW	5	5
Change	R	G/Y←	G/Y←	R	R	R	DW	DW	DW	DW	3	3
Emerg.Flash	Y	Y	Y	Y	R	R	Dark	Dark	Dark	Dark	50-60	Flahes/Minute

NEW DURHAM ROAD SIGNAL TIMING

(WITHOUT PEDESTRIAN ACTIVATION)

PHASE	New Durham Road Eastbound 1,2	Eastbound 3,4	Westbound 5,6	Westbound 7-9	Bridge St. 10,11	John St. 12,13	Pedestrian Signals New Durham 14,15	New Durham 16,17	Bridge 18,19	John 20,21	Off-Peak TIME	Peak-Time 6:30-9:30 am 3:30-7:30 P.M.
A	G	G	G	G	R	R	DW	DW	W	W	24(Min.)	24(Min.)
Ped.Clear	G	G	G	G	R	R	DW	DW	FDW	FDW	10	10
Veh. Extens.	G	G	G	G	R	R	DW	DW	DW	DW	0	36
Change	Y	G	G	Y	R	R	DW	DW	DW	DW	4	4
Veh.Clear	R	G	G	R	R	R	DW	DW	DW	DW	2	2
B	R	G	G	R	R	R	DW	DW	DW	DW	2	2
Change	R	[4] G	[6] Y	R	R	R	DW	DW	DW	DW	4	4
Veh.Clear	R	[5] G	[6] R	R	R	R	DW	DW	DW	DW	3	3
C	R	G/G←	R	R	G	R/G→	DW	DW	DW	DW	7-12	7-15
Change	R	[7] Y/Y←	R	R	Y	[12] R/G→	DW	DW	DW	DW	3	3
Veh.Clear	R	[8] R	R	R	R	[13] R/G→	DW	DW	DW	DW	3	3
D	R	R	G/G←	R	R	G/G→	DW	DW	DW	DW	7-12	7-12
Change	R	R	[9] G/G←	R	R	Y/Y→	DW	DW	DW	DW	3	3
Veh.Clear	R	R	[16] G/G←	R	R	R	DW	DW	DW	DW	3	3
E	R	G/G←	G/G←	R	R	R	DW	DW	DW	DW	5	5
Change	R	G/Y←	G/Y←	R	R	R	DW	DW	DW	DW	3	3
Emerg.Flash	Y	Y	Y	Y	R	R	Dark	Dark	Dark	Dark	50-60	Flahes/Minute

Notes:

1. VEHICULAR MEMORIES ARE TO BE OFF AND VEHICLE EXTENSION SET AT 2 SECONDS.
2. CONTROLLER TO REST IN PHASE-A WALK INTERVAL
3. PHASES NOT ACTIVATED SHALL BE SKIPPED
4. Y IF PHASE C IS SKIPPED.
5. R IF PHASE C IS SKIPPED.
6. G IF PHASE C IS SKIPPED
7. G/G← IF PHASE D IS SKIPPED, G/Y← IF PHASES D AND E ARE SKIPPED.
8. G/G← IF PHASE D IS SKIPPED, G IF PHASES D AND E ARE SKIPPED.
9. G/Y← IF PHASE E IS SKIPPED.
10. G IF PHASE E IS SKIPPED.
11. MANUAL CONTROL SHALL BE DISCONNECTED.
12. R/Y→ IF PHASE D IS SKIPPED, R/Y→ IF PHASES D AND E ARE SKIPPED.
13. R IF PHASE D IS SKIPPED, R IF PHASES D AND E ARE SKIPPED.
14. VARIABLE CYCLE - CYCLE LENGTH VARIES FROM 83 SECONDS TO 132 SECONDS.
15. THE TRAFFIC SIGNAL SHALL OPERATE AS A FLASHING MECHANISM BETWEEN THE HOURS OF 11:00 P.M. TO 5:00 A.M.

Directive No. 192-18

Route NJ 27 (Lake Ave.) & Central Ave. & Middlesex Ave.
Metuchen Borough, Middlesex County

90 – SECOND BACKGROUND CYCLE

Phase		Signal Indications											Time (Secs.)
		1	2, 3	4, 5	7, 8	6	13, 14	15, 16	17	18 – 21	9, 10, 24, 25	11, 12, 22, 23	
	WITHOUT PEDESTRIAN ACTUATION												
1 + 5	Route NJ 27 (Middlesex Ave.) SB Left / Route NJ 27 (Lake Ave.) NB Right / Middlesex Ave. NB Lead @ Central Ave.	G	G/<G-	R	R/-G>	R	R	G/<G-	G	R	DW	DW	7 – 17
	Clearance	G	G/<Y-	R	R/-Y>	R	R	G/<Y-	G	R	DW	DW	3
2 + 6	Route NJ 27 (Middlesex Ave.) ROW	G	G	G	R	R	G	G	G	R	DW	W	45 – 20
	Pedestrian Clearance	G	G	G	R	R	G	G	G	R	DW	FDW	16
	Change	Y	Y	Y	R	R	Y	Y	Y	R	DW	DW	3*
	Clearance	R	R	R	R	R	R	R	R	R	DW	DW	3
4	Route NJ 27 (Lake Ave) / Central Ave ROW	R	R	R	G/-G>	G	R	R	R	G	DW	DW	7 – 22
	Change	R	R	R	Y/-G>(9)	Y	R	R	R	Y	DW	DW	3
	Clearance	R	R	R	R/-G>(10)	R	R	R	R	R	DW	DW	3
	WITH PEDESTRIAN ACTUATION												
1 + 5	Route NJ 27 (Middlesex Ave) SB Left / Route NJ 27 (Lake Ave) NB Right / Middlesex Ave NB Lead @ Central Ave.	G	G/<G-	R	R/-G>	R	R	G/<G-	G	R	DW	DW	7 – 17
	Clearance	G	G/<Y-	R	R/-Y>	R	R	G/<Y-	G	R	DW	DW	3
2 + 6	Route NJ 27 (Middlesex Ave) ROW	G	G	G	R	R	G	G	G	R	DW	W	32 – 20
	Pedestrian Clearance	G	G	G	R	R	G	G	G	R	DW	FDW	16
	Change	Y	Y	Y	R	R	Y	Y	Y	R	DW	DW	3*
	Clearance	R	R	R	R	R	R	R	R	R	DW	DW	3
4	Route NJ 27 (Lake Ave) / Central Ave ROW	R	R	R	G/-G>	G	R	R	R	G	W	DW	7
	Pedestrian Clearance	R	R	R	G/-G>	G	R	R	R	G	FDW	DW	13
	Phase Extension	R	R	R	G/-G>	G	R	R	R	G	DW	DW	0 – 2
	Change	R	R	R	Y/-G>(9)	Y	R	R	R	Y	DW	DW	3
	Clearance	R	R	R	R/-G>(10)	R	R	R	R	R	DW	DW	3
	Emergency Flash	Y	Y	Y	R	R	Y	Y	Y	R	DARK	DARK	-

Directive No. 192-18

Route NJ 27 (Lake Ave.) & Central Ave. & Middlesex Ave.
Metuchen Borough, Middlesex County

NOTES:

1. *An offset of 38 seconds is to be measured from the beginning of yellow to Route NJ 27 traffic at Amboy Avenue to the beginning of yellow to Route NJ 27 SB traffic (signal heads #1 – 3) at this intersection.
2. The vehicle memories are to be disconnected and the vehicle extensions set at 2 seconds.
3. The manual cord is to be disconnected.
4. The green left-turn arrow sections of faces #2 and 3 are to be wired to operate as Phase 1.
5. The green left-turn arrow sections of faces #15 and 16 are to be wired to operate as Phase 5.
6. The green-ball sections of faces #1, 2 and 3 are to be wired to operate as Phase 1 and Phase 2 overlap.
7. The green-ball sections of faces #15, 16 and 17 are to be wired to operate as Phase 5 and Phase 6 overlap.
8. The green and yellow right-turn arrow sections of faces #7 and 8 are to be wired to operate concurrently with the Phase 1 left-turn movement. The remaining sections of faces #7 and 8 are to be wired to operate as Phase 4.
9. To display “Y” if Phase 1+5 is skipped.
10. To display “R” if Phase 1+5 is skipped.

90 – SECOND BACKGROUND CYCLE

	Phase	Signal Indications									Fire Stop	Time
		5, 6	7, 8	1, 2	3, 4	9, 10	11, 12	13-16	17, 18	19, 20		
	VEHICLE ACTUATION											
1)	Route 27 ROW	G	G	R	R	W	W	DW	FY	R	OFF	40 – 22
	Pedestrian Clearance	G	G	R	R	FDW	FDW	DW	FY	R	OFF	15
	Change	Y	Y	R	R	DW	DW	DW	FY	R	OFF	4
	Clearance	R	R	R	R	DW	DW	DW	FY	R	OFF	2
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	5 – 7
	Change	R	R	R/<Y-	R/<Y-	DW	DW	DW	FY	R	OFF	3
3)	Main Street ROW	R	R	G	G	DW	DW	DW	FY	R	OFF	7 – 21
	Change	R	R	Y	Y	DW	DW	DW	FY	R	OFF	3
	Clearance	R	R	R	R	DW	DW	DW	FY	R	OFF	2
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	5 – 7
	Change	R/<Y-	R/<Y-	R	R	DW	DW	DW	FY	R	OFF	4
	PEDESTRIAN ACTUATION											
1)	Route 27 ROW	G	G	R	R	W	W	DW	FY	R	OFF	24 – 20
	Pedestrian Clearance	G	G	R	R	FDW	FDW	DW	FY	R	OFF	15
	Change	Y	Y	R	R	DW	DW	DW	FY	R	OFF	4
	Clearance	R	R	R	R	DW	DW	DW	FY	R	OFF	2
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	5 – 7
	Change	R	R	R/<Y-	R/<Y-	DW	DW	DW	FY	R	OFF	3
3)	Main Street ROW	R	R	G	G	DW	DW	W	FY	R	OFF	7
	Pedestrian Clearance	R	R	G	G	DW	DW	FDW	FY	R	OFF	16
	Change	R	R	Y	Y	DW	DW	DW	FY	R	OFF	3
	Clearance	R	R	R	R	DW	DW	DW	FY	R	OFF	2
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	5 – 7
	Change	R/<Y-	R/<Y-	R	R	DW	DW	DW	FY	R	OFF	4
	Emergency Flash	Y	Y	R	R	DARK	DARK	DARK	FY	R	OFF	-

1. An offset of 40 seconds is measured from the beginning of yellow to Route 27 traffic at Amboy Avenue to the beginning of yellow to Route 27 traffic at this intersection.
2. The manual cord is to be disconnected.
3. Vehicle extension is to be set at 2 seconds – Phases 2, 3 and 4.
4. Vehicle memory is to be disconnected.
5. The Route 27 left-turn slots have the capability of operating simultaneously and independently. Upon termination of a left turn due to no vehicle demand, the opposing through movement shall commence.
6. The Main Street left-turn slots have the capability of operating simultaneously and independently. Upon termination of a left turn due to no vehicle demand, the opposing through movement shall commence.
7. Detector switching shall be provided so the Main Street lead-left ROW detection (Phase 2) may extend the Main Street ROW (Phase 3) movement.
8. Permitted Sequences: 1 – 2 – 3 – 4 – 1; 1 – 2 – 3 – 1; 1 – 3 – 4 – 1; 1 – 3 - 1

EMERGENCY SEQUENCES

	Phase	Signal Indications									Fire Stop	Time
		5,6	7,8	1.2	3,4	9,10	11,12	13-16	17,18	19,20		
	ROUTE 27 LEAD LEFTS											
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	
	Upon Actuation											Total of 5
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	
	Change	R/<Y-	R/<Y-	R	R	DW	DW	DW	Y	R	OFF	4
5)	Fire ROW	G	R	R	R	DW	DW	DW	R	FY	ON	20
	Change	Y	R	R	R	DW	DW	DW	R	Y	ON	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	5 Min.
	Resume Normal Operation											
	ROUTE 27 ROW											
1)	Route 27 ROW	G	G	R	R	W	W	DW	FY	R	OFF	-
	Upon Actuation											
	Pedestrian Clearance	G	G	R	R	FDW	FDW	DW	FY	R	OFF	15
	Change	Y	Y	R	R	DW	DW	DW	Y	R	OFF	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
5)	Fire ROW	G	R	R	R	DW	DW	DW	R	FY	ON	20
	Change	Y	R	R	R	DW	DW	DW	R	Y	ON	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	5 Min.
	Resume Normal Operation											
	MAIN STREET LEAD LEFT											
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	
	Upon Actuation											Total of 5
2)	Main Street Lead Left	R	R	R/<G-	R/<G-	DW	DW	DW	FY	R	OFF	
	Change	R	R	R/<Y-	R/<Y-	DW	DW	DW	Y	R	OFF	4
5)	Fire ROW	G	R	R	R	DW	DW	DW	R	FY	ON	20
	Change	Y	R	R	R	DW	DW	DW	R	Y	ON	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	5 Min.
	Resume Normal Operation											

EMERGENCY SEQUENCES (Cont'd.)

	Phase	Signal Indications									Fire Stop	Time
		5,6	7,8	1.2	3,4	9,10	11,12	13-16	17,18	19,20		
	MAIN STREET ROW											
3)	Main Street ROW	R	R	G	G	DW	DW	DW	FY	R	OFF	
	Upon Actuation											Total of 7
	Main Street ROW	R	R	G	G	DW	DW	DW	FY	R	OFF	
	Change	R	R	Y	Y	DW	DW	DW	Y	R	OFF	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
5)	Fire ROW	G	R	R	R	DW	DW	DW	R	FY	ON	20
	Change	Y	R	R	R	DW	DW	DW	R	Y	ON	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	5 Min.
	Resume Normal Operation											
	MAIN STREET ROW WITH PEDESTRIAN ACTUATION											
3)	Main Street ROW	R	R	G	G	DW	DW	W	FY	R	OFF	-
	Upon Actuation											
	Pedestrian Clearance	R	R	G	G	DW	DW	FDW	FY	R	OFF	16
	Change	R	R	Y	Y	DW	DW	DW	Y	R	OFF	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
5)	Fire ROW	G	R	R	R	DW	DW	DW	R	FY	ON	20
	Change	Y	R	R	R	DW	DW	DW	R	Y	ON	4
	Clearance	R	R	R	R	DW	DW	DW	R	R	ON	2
4)	Route 27 Lead Left	R/<G-	R/<G-	R	R	DW	DW	DW	FY	R	OFF	5 Min.
	Resume Normal Operation											

PRE-EMPTION NOTES:

1. Phase 5 shall only be actuated by push buttons in the firehouse.
2. Actuation of Phase 5 shall not violate minimum green, yellow, all red and pedestrian clearance times.

F | Synchro 11 Printouts

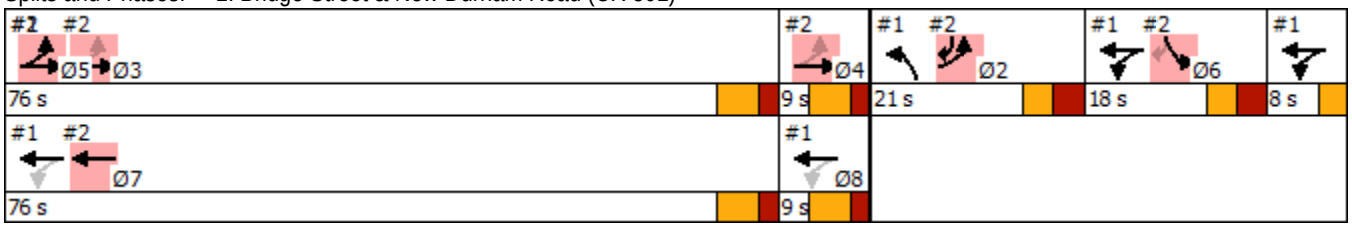
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	369	192	232	336	221	55					
Future Volume (vph)	369	192	232	336	221	55					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.954				0.973						
Flt Protected			0.950		0.962						
Satd. Flow (prot)	1890	0	1678	1828	1832	0					
Flt Permitted			0.275		0.962						
Satd. Flow (perm)	1890	0	486	1828	1832	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	30				8						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.90	0.90	0.78	0.96	0.81	0.81					
Heavy Vehicles (%)	8%	2%	5%	5%	2%	15%					
Adj. Flow (vph)	410	213	297	350	273	68					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	623	0	297	350	341	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		103.6	106.6	15.0						
Actuated g/C Ratio	0.54		0.79	0.82	0.11						
v/c Ratio	0.61		0.51	0.23	1.57						
Control Delay	23.0		12.6	1.7	314.0						
Queue Delay	0.0		0.8	0.6	0.0						
Total Delay	23.0		13.3	2.3	314.0						
LOS	C		B	A	F						
Approach Delay	23.0			7.3	314.0						

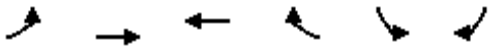
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			A	F						
Queue Length 50th (ft)	337		50	19	~408						
Queue Length 95th (ft)	466		60	58	#528						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1027		574	1483	217						
Starvation Cap Reductn	0		91	774	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.61		0.61	0.49	1.57						

Intersection Summary

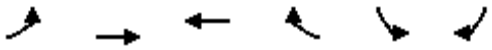
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 130.6
Natural Cycle: 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.57
Intersection Signal Delay: 78.3 Intersection LOS: E
Intersection Capacity Utilization 100.1% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





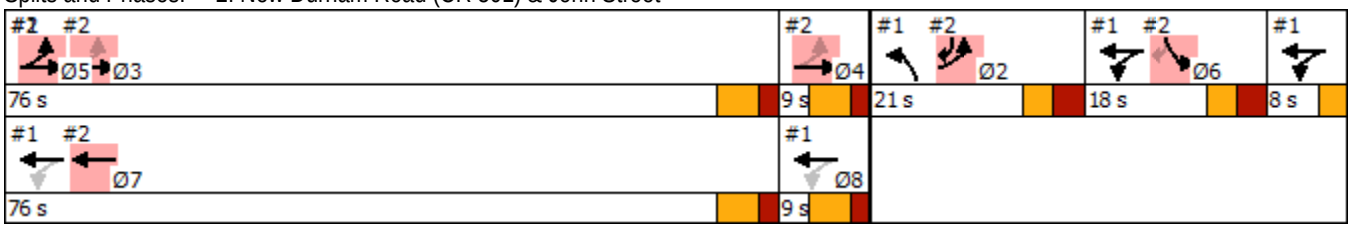
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	43	381	376	2	4	192				
Future Volume (vph)	43	381	376	2	4	192				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1599	1742	1909	0	1754	1509				
Flt Permitted	0.456				0.950					
Satd. Flow (perm)	768	1742	1909	0	1754	1509				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	896		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.84	0.84	0.96	0.96	0.92	0.92				
Heavy Vehicles (%)	8%	8%	5%	2%	0%	4%				
Adj. Flow (vph)	51	454	392	2	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	51	454	394	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		10.6	31.6				
Actuated g/C Ratio	0.74	0.67	0.54		0.08	0.24				
v/c Ratio	0.08	0.39	0.39		0.03	0.40				
Control Delay	1.6	4.9	19.3		55.2	7.5				
Queue Delay	0.0	0.5	0.0		0.0	0.0				
Total Delay	1.6	5.5	19.3		55.2	7.5				
LOS	A	A	B		E	A				
Approach Delay		5.1	19.3		8.4					

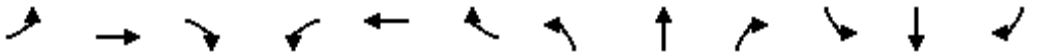


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	B		A					
Queue Length 50th (ft)	3	67	190		3	0				
Queue Length 95th (ft)	m5	m74	270		15	63				
Internal Link Dist (ft)		177	816		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	672	1160	1023		161	523				
Starvation Cap Reductn	0	342	0		0	0				
Spillback Cap Reductn	0	0	0		0	0				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.08	0.56	0.39		0.02	0.40				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 130.6			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.57			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street





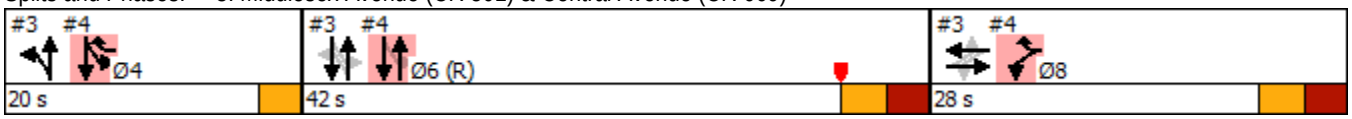
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	406	58	14	70	11	9	188	476	346	225	19
Future Volume (vph)	328	406	58	14	70	11	9	188	476	346	225	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.979			0.893			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1916	0	1163	1654	0	1736	1582	0	1702	1771	0
Flt Permitted	0.697			0.182			0.521			0.363		
Satd. Flow (perm)	1318	1916	0	223	1654	0	952	1582	0	651	1771	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					9			100			8	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			709			263	
Travel Time (s)		36.1			9.3			19.3			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.88	0.88	0.88	0.65	0.89	0.65
Heavy Vehicles (%)	0%	0%	0%	50%	3%	44%	0%	6%	2%	3%	3%	0%
Adj. Flow (vph)	357	441	63	16	80	13	10	214	541	532	253	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	504	0	16	93	0	10	755	0	532	282	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	22.0	22.0		22.0	22.0		56.0	59.0		36.0	36.0	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.66		0.40	0.40	
v/c Ratio	1.11	1.08		0.30	0.23		0.01	0.70		2.05	0.40	
Control Delay	117.0	98.4		44.1	26.3		5.6	12.9		506.0	25.0	
Queue Delay	6.3	0.0		0.0	0.8		0.0	52.8		0.0	2.5	
Total Delay	123.3	98.4		44.1	27.1		5.6	65.7		506.0	27.5	
LOS	F	F		D	C		A	E		F	C	
Approach Delay		108.7			29.6			64.9			340.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			E			F	
Queue Length 50th (ft)	~234	~322		7	38		2	210		~486	130	
Queue Length 95th (ft)	#404	#514		28	76		7	327		#452	208	
Internal Link Dist (ft)		1242			261			629			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	322	468		54	411		740	1071		260	713	
Starvation Cap Reductn	0	0		0	0		0	0		0	309	
Spillback Cap Reductn	121	0		0	155		0	524		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.78	1.08		0.30	0.36		0.01	1.38		2.05	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.05			
Intersection Signal Delay: 166.1		Intersection LOS: F	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



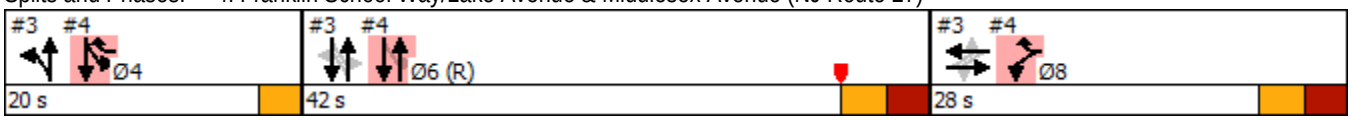
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	218	0	88	0	410	117	163	372	0
Future Volume (vph)	0	0	0	218	0	88	0	410	117	163	372	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.971				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1552	0	1509	0	1603	0	1879	2039	0
Flt Permitted				0.950						0.190		
Satd. Flow (perm)	0	0	0	1552	0	1509	0	1603	0	376	2039	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						99		18				
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.88	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	13%	2%	4%	2%	6%	28%	3%	3%	0%
Adj. Flow (vph)	0	0	0	245	0	99	0	466	126	172	392	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	245	0	99	0	592	0	172	392	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				22.0		45.0		36.0		56.0	59.0	
Actuated g/C Ratio				0.24		0.50		0.40		0.62	0.66	
v/c Ratio				0.65		0.12		0.91		0.33	0.29	
Control Delay				39.6		3.0		44.8		6.7	4.5	
Queue Delay				0.4		0.0		49.9		0.0	0.6	
Total Delay				40.0		3.0		94.7		6.7	5.1	
LOS				D		A		F		A	A	
Approach Delay					29.4			94.7			5.6	

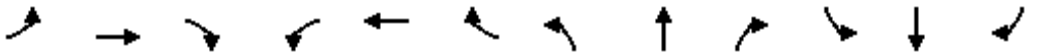
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			F			A	
Queue Length 50th (ft)				125		0		346		19	46	
Queue Length 95th (ft)				204		24		m359		m36	m59	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				379		804		652		517	1336	
Starvation Cap Reductn				0		0		257		0	0	
Spillback Cap Reductn				15		0		0		0	573	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.67		0.12		1.50		0.33	0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.05			
Intersection Signal Delay: 46.2		Intersection LOS: D	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	386	95	99	383	68	81	320	47	43	128	26
Future Volume (vph)	80	386	95	99	383	68	81	320	47	43	128	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.977			0.981			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1567	1643	0	1787	1830	0	1784	2010	0	1805	1885	0
Flt Permitted	0.159			0.174			0.642			0.305		
Satd. Flow (perm)	262	1643	0	327	1830	0	1206	2010	0	580	1885	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.75	0.75	0.75	0.84	0.84	0.84
Heavy Vehicles (%)	7%	4%	5%	2%	2%	5%	4%	1%	5%	0%	4%	9%
Adj. Flow (vph)	91	439	108	108	416	74	108	427	63	51	152	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	547	0	108	490	0	108	490	0	51	183	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	32.6	25.1		30.6	23.0		46.8	39.4		46.6	39.4	
Actuated g/C Ratio	0.36	0.28		0.34	0.26		0.52	0.44		0.52	0.44	
v/c Ratio	0.48	1.20		0.50	1.05		0.16	0.56		0.13	0.22	
Control Delay	27.3	140.8		27.5	90.4		17.0	29.9		10.1	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.3	140.8		27.5	90.4		17.0	29.9		10.1	17.7	
LOS	C	F		C	F		B	C		B	B	
Approach Delay		124.6			79.0			27.6			16.0	

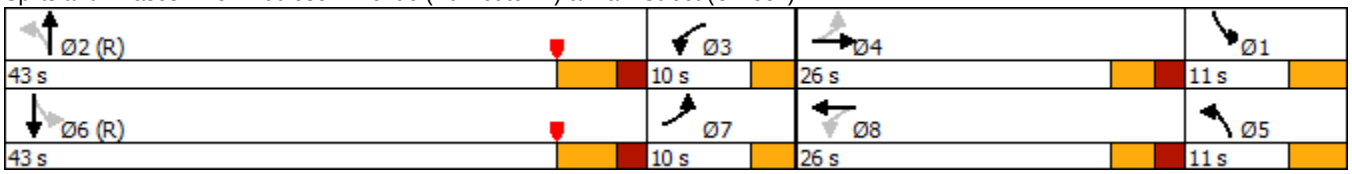
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			E			C			B	
Queue Length 50th (ft)	34	~425		41	~330		37	201		12	66	
Queue Length 95th (ft)	66	#602		77	#519		m48	236		26	104	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	196	457		224	468		674	879		397	824	
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	0.46	1.20		0.48	1.05		0.16	0.56		0.13	0.22	

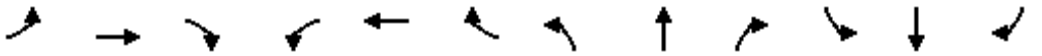
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 71.1 Intersection LOS: E
Intersection Capacity Utilization 71.3% ICU Level of Service C
Analysis Period (min) 15

~ 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.
! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



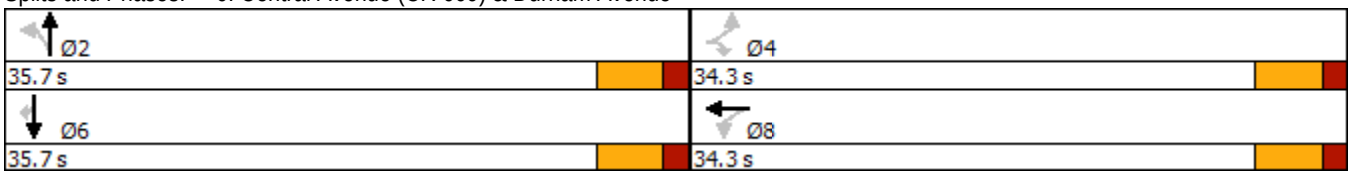


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	0	65	12	50	21	44	342	0	0	294	342
Future Volume (vph)	305	0	65	12	50	21	44	342	0	0	294	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.956							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1583	1814	1825	0	1796	1853	0	0	1853	1607
Flt Permitted	0.687			0.950			0.492					
Satd. Flow (perm)	1305	0	1583	1814	1825	0	930	1853	0	0	1853	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.84	0.84	0.92	0.65	0.65	0.65	0.82	0.82	0.82	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	363	0	71	18	77	32	54	417	0	0	363	422
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	0	71	18	109	0	54	417	0	0	363	422
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	21.4		21.4	21.4	21.4		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.34		0.34	0.34	0.34		0.50	0.50			0.50	0.50
v/c Ratio	0.81		0.13	0.03	0.17		0.12	0.45			0.39	0.53
Control Delay	33.5		13.8	12.5	14.2		11.4	13.6			12.9	15.3
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	33.5		13.8	12.5	14.2		11.4	13.6			12.9	15.3
LOS	C		B	B	B		B	B			B	B
Approach Delay		30.3			13.9			13.4			14.2	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	121		18	4	28		10	97			81	103
Queue Length 95th (ft)	191		41	11	40		31	176			148	187
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	620		753	862	868		463	923			923	801
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	0.59		0.09	0.02	0.13		0.12	0.45			0.39	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	349	33	50	385	1	26	0	17	4	0	0
Future Vol, veh/h	0	349	33	50	385	1	26	0	17	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	84	92	65	92	92	65	92	65	92	92	92
Heavy Vehicles, %	2	0	0	0	0	2	0	2	0	2	2	2
Mvmt Flow	0	415	36	77	418	1	40	0	26	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	451	0	0	1006	1006	433	1019	1024	419
Stage 1	-	-	-	-	-	-	433	433	-	573	573	-
Stage 2	-	-	-	-	-	-	573	573	-	446	451	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1140	-	-	1120	-	-	222	241	627	215	235	634
Stage 1	-	-	-	-	-	-	605	582	-	505	504	-
Stage 2	-	-	-	-	-	-	508	504	-	591	571	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	1120	-	-	207	219	627	192	214	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	207	219	-	192	214	-
Stage 1	-	-	-	-	-	-	605	582	-	505	459	-
Stage 2	-	-	-	-	-	-	462	459	-	566	571	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	21.6	24.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	282	1140	-	-	1120	-	-	192
HCM Lane V/C Ratio	0.235	-	-	-	0.069	-	-	0.023
HCM Control Delay (s)	21.6	0	-	-	8.5	0	-	24.2
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	4	11	668	486	0
Future Vol, veh/h	9	4	11	668	486	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	92	92	92	92	89	92
Heavy Vehicles, %	2	2	0	6	5	0
Mvmt Flow	10	4	12	726	546	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1296	546	546	0	-	0
Stage 1	546	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Critical Hdwy	6.02	6.02	4.1	-	-	-
Critical Hdwy Stg 1	5.02	-	-	-	-	-
Critical Hdwy Stg 2	5.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	207	554	1033	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	203	554	1033	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	507	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	252	-	-
HCM Lane V/C Ratio	0.012	-	0.056	-	-
HCM Control Delay (s)	8.5	0	20.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	405	486	4	6	4
Future Vol, veh/h	2	405	486	4	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	440	528	4	7	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	532	0	-	0	974	530
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	444	-
Critical Hdwy	4.12	-	-	-	7.22	6.62
Critical Hdwy Stg 1	-	-	-	-	6.22	-
Critical Hdwy Stg 2	-	-	-	-	6.22	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	225	518
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	586	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	224	518
Mov Cap-2 Maneuver	-	-	-	-	224	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	586	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	290
HCM Lane V/C Ratio	0.002	-	-	-	0.037
HCM Control Delay (s)	8.5	0	-	-	17.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

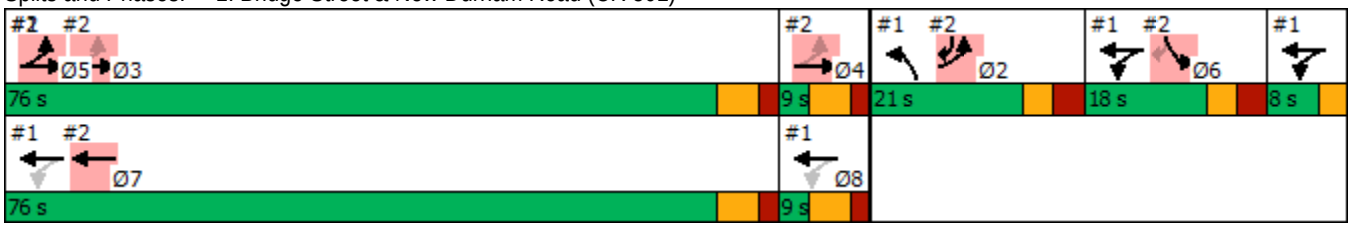
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	420	285	377	325	241	75					
Future Volume (vph)	420	285	377	325	241	75					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.945				0.968						
Flt Protected			0.950		0.963						
Satd. Flow (prot)	1938	0	1762	1863	1894	0					
Flt Permitted			0.166		0.963						
Satd. Flow (perm)	1938	0	308	1863	1894	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	39				10						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.91	0.91	0.94	0.94	0.92	0.92					
Heavy Vehicles (%)	4%	0%	0%	3%	1%	0%					
Adj. Flow (vph)	462	313	401	346	262	82					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	775	0	401	346	344	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		104.5	107.5	15.0						
Actuated g/C Ratio	0.53		0.79	0.82	0.11						
v/c Ratio	0.74		0.81	0.23	1.53						
Control Delay	27.8		50.8	1.4	297.2						
Queue Delay	0.0		18.2	0.5	0.0						
Total Delay	27.8		69.1	1.9	297.2						
LOS	C		E	A	F						
Approach Delay	27.8			38.0	297.2						

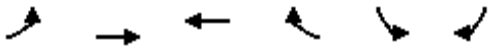
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			D	F						
Queue Length 50th (ft)	475		169	15	~408						
Queue Length 95th (ft)	640		#311	50	#605						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1050		492	1521	225						
Starvation Cap Reductn	0		88	785	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.74		0.99	0.47	1.53						

Intersection Summary

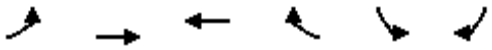
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131.5
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.53
Intersection Signal Delay: 81.5 Intersection LOS: F
Intersection Capacity Utilization 110.5% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





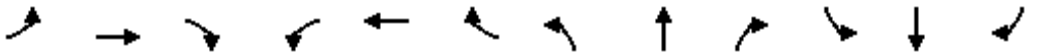
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	56	439	478	9	3	224				
Future Volume (vph)	56	439	478	9	3	224				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.997			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1809	1943	0	1754	1553				
Flt Permitted	0.347				0.950					
Satd. Flow (perm)	631	1809	1943	0	1754	1553				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)			1			255				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	896		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.86	0.91	0.91	0.91	0.88	0.88				
Heavy Vehicles (%)	0%	4%	3%	0%	0%	1%				
Adj. Flow (vph)	65	482	525	10	3	255				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	65	482	535	0	3	255				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		11.5	32.5				
Actuated g/C Ratio	0.73	0.66	0.53		0.09	0.25				
v/c Ratio	0.11	0.40	0.52		0.02	0.44				
Control Delay	1.7	4.9	22.2		55.0	7.2				
Queue Delay	0.0	1.0	0.2		0.0	1.1				
Total Delay	1.7	5.9	22.3		55.0	8.3				
LOS	A	A	C		D	A				
Approach Delay		5.4	22.3		8.8					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	4	72	287		2	0				
Queue Length 95th (ft)	m5	m82	389		13	62				
Internal Link Dist (ft)		177	816		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	602	1196	1034		160	575				
Starvation Cap Reductn	0	448	0		0	0				
Spillback Cap Reductn	0	0	77		0	146				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.11	0.64	0.56		0.02	0.59				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 131.5			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.53			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street



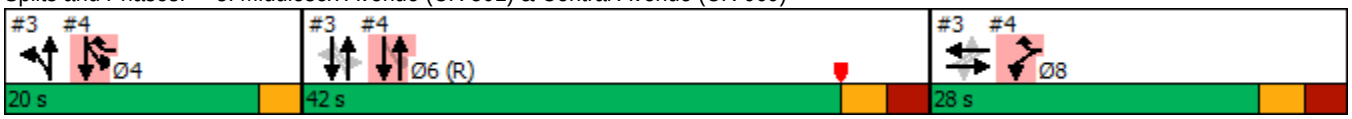
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	77	53	158	247	50	33	442	257	181	377	38
Future Volume (vph)	25	77	53	158	247	50	33	442	257	181	377	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.975			0.945			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1834	0	1586	1750	0	1736	1681	0	1654	1788	0
Flt Permitted	0.327			0.653			0.329			0.352		
Satd. Flow (perm)	618	1834	0	1090	1750	0	601	1681	0	613	1788	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					11			68			7	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			709			263	
Travel Time (s)		36.1			9.3			19.3			6.0	
Peak Hour Factor	0.88	0.88	0.88	0.97	0.97	0.97	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	10%	1%	9%	0%	2%	4%	6%	2%	0%
Adj. Flow (vph)	28	88	60	163	255	52	38	502	292	206	428	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	148	0	163	307	0	38	794	0	206	471	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	19.7	19.7		19.7	19.7		58.3	61.3		37.7	37.7	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.65	0.68		0.42	0.42	
v/c Ratio	0.21	0.37		0.68	0.79		0.06	0.68		0.80	0.63	
Control Delay	31.7	31.9		47.2	46.5		5.7	12.0		56.9	34.3	
Queue Delay	0.0	0.0		0.0	0.1		0.0	15.1		0.0	8.0	
Total Delay	31.7	31.9		47.2	46.6		5.7	27.1		56.9	42.3	
LOS	C	C		D	D		A	C		E	D	
Approach Delay		31.9			46.8			26.1			46.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	13	69		83	154		7	234		121	265	
Queue Length 95th (ft)	36	120		152	#250		16	353		m#215	296	
Internal Link Dist (ft)		1242			261			629			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	151	448		266	436		612	1167		256	752	
Starvation Cap Reductn	0	0		0	0		0	0		0	238	
Spillback Cap Reductn	0	0		0	2		0	368		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.33		0.61	0.71		0.06	0.99		0.80	0.92	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



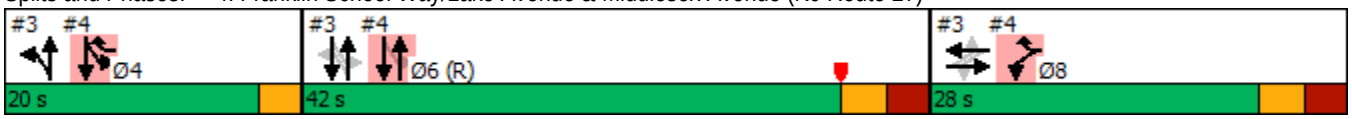
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	247	0	91	0	379	138	194	349	1
Future Volume (vph)	0	0	0	247	0	91	0	379	138	194	349	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.964				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1639	0	1553	0	1679	0	1916	2059	0
Flt Permitted				0.950						0.182		
Satd. Flow (perm)	0	0	0	1639	0	1553	0	1679	0	367	2059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						107		24				
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	7%	0%	1%	2%	2%	13%	1%	2%	0%
Adj. Flow (vph)	0	0	0	291	0	107	0	457	166	213	384	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	291	0	107	0	623	0	213	385	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				19.7		43.3		37.7		58.3	61.3	
Actuated g/C Ratio				0.22		0.48		0.42		0.65	0.68	
v/c Ratio				0.81		0.13		0.87		0.39	0.27	
Control Delay				51.6		2.9		32.6		9.6	4.0	
Queue Delay				0.6		0.0		34.3		0.0	0.1	
Total Delay				52.3		2.9		66.9		9.6	4.1	
LOS				D		A		E		A	A	
Approach Delay					39.0			66.9			6.1	

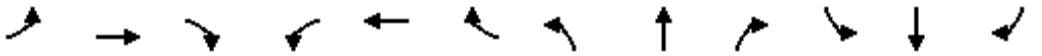
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					D			E			A	
Queue Length 50th (ft)				152		0		329		34	43	
Queue Length 95th (ft)				227		22		#462		m58	m59	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				400		802		717		541	1402	
Starvation Cap Reductn				0		0		130		0	0	
Spillback Cap Reductn				14		0		0		0	192	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.75		0.13		1.06		0.39	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 64.4% ICU Level of Service C
Analysis Period (min) 15
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: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	468	91	117	468	53	102	303	54	78	205	25
Future Volume (vph)	58	468	91	117	468	53	102	303	54	78	205	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.985			0.977			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1708	0	1805	1890	0	1718	2032	0	1787	1972	0
Flt Permitted	0.188			0.188			0.568			0.411		
Satd. Flow (perm)	328	1708	0	357	1890	0	1027	2032	0	773	1972	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	1%	0%	0%	8%	0%	0%	1%	1%	2%
Adj. Flow (vph)	70	564	110	130	520	59	113	337	60	86	225	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	674	0	130	579	0	113	397	0	86	252	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	29.9	21.3		30.0	21.3		46.8	39.3		48.5	41.1	
Actuated g/C Ratio	0.33	0.24		0.33	0.24		0.52	0.44		0.54	0.46	
v/c Ratio	0.34	1.67		0.57	1.30		0.19	0.45		0.18	0.28	
Control Delay	23.7	340.0		30.4	180.8		17.1	27.8		10.3	18.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.7	340.0		30.4	180.8		17.1	27.8		10.3	18.0	
LOS	C	F		C	F		B	C		B	B	
Approach Delay		310.3			153.2			25.4			16.0	

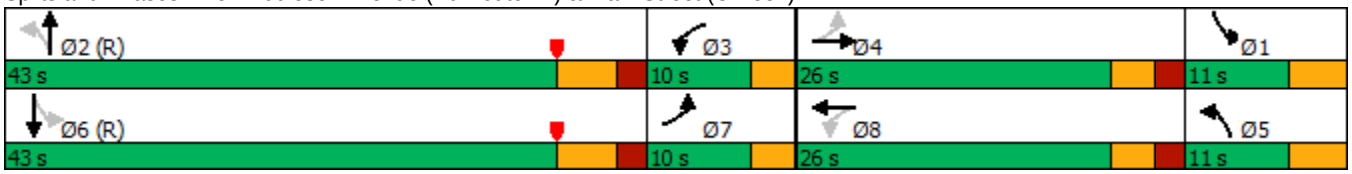
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			F			C			B	
Queue Length 50th (ft)	26	~567		50	~428		39	160		21	94	
Queue Length 95th (ft)	50	#699		91	#628		m53	m206		43	151	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	213	403		232	446		589	887		496	899	
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	0.33	1.67		0.56	1.30		0.19	0.45		0.17	0.28	

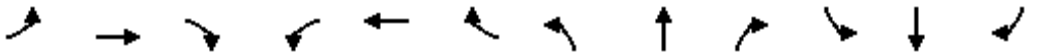
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.67
Intersection Signal Delay: 155.5 Intersection LOS: F
Intersection Capacity Utilization 76.0% ICU Level of Service D
Analysis Period (min) 15

~ 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.
! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



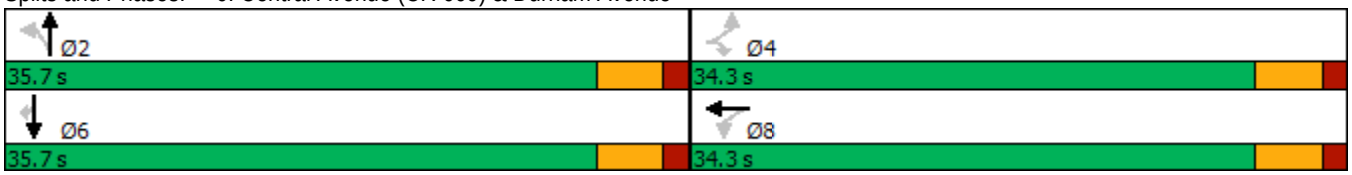


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	0	66	8	78	19	36	395	0	0	405	465
Future Volume (vph)	335	0	66	8	78	19	36	395	0	0	405	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.971							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1615	1814	1854	0	1448	1890	0	0	1890	1607
Flt Permitted	0.687			0.950			0.436					
Satd. Flow (perm)	1305	0	1615	1814	1854	0	665	1890	0	0	1890	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	24%	0%	0%	3%	0%	0%
Adj. Flow (vph)	360	0	71	9	88	21	42	459	0	0	426	489
Shared Lane Traffic (%)												
Lane Group Flow (vph)	360	0	71	9	109	0	42	459	0	0	426	489
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	21.3		21.3	21.3	21.3		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.34		0.34	0.34	0.34		0.50	0.50			0.50	0.50
v/c Ratio	0.81		0.13	0.01	0.17		0.13	0.49			0.45	0.61
Control Delay	33.2		13.8	12.4	14.2		11.9	14.0			13.5	17.0
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	33.2		13.8	12.4	14.2		11.9	14.0			13.5	17.0
LOS	C		B	B	B		B	B			B	B
Approach Delay		30.0			14.0			13.8			15.4	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	119		18	2	28		8	108			98	125
Queue Length 95th (ft)	212		41	10	56		27	209			204	268
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	622		770	864	883		332	944			944	802
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	0.58		0.09	0.01	0.12		0.13	0.49			0.45	0.61

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 18.1		Intersection LOS: B	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	357	37	55	521	3	3	0	42	2	0	0
Future Vol, veh/h	0	357	37	55	521	3	3	0	42	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	65	65	92	92	88	92	88	92	92	92
Heavy Vehicles, %	2	0	0	0	4	2	0	2	0	2	2	2
Mvmt Flow	0	388	57	85	566	3	3	0	48	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	569	0	0	445	0	0	1155	1156	417	1179	1183	568
Stage 1	-	-	-	-	-	-	417	417	-	738	738	-
Stage 2	-	-	-	-	-	-	738	739	-	441	445	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1003	-	-	1126	-	-	175	197	640	167	189	522
Stage 1	-	-	-	-	-	-	617	591	-	410	424	-
Stage 2	-	-	-	-	-	-	413	424	-	595	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1003	-	-	1126	-	-	160	175	640	141	168	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	175	-	141	168	-
Stage 1	-	-	-	-	-	-	617	591	-	410	377	-
Stage 2	-	-	-	-	-	-	368	377	-	551	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	12.5	30.9
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	533	1003	-	-	1126	-	-	141
HCM Lane V/C Ratio	0.096	-	-	-	0.075	-	-	0.015
HCM Control Delay (s)	12.5	0	-	-	8.5	0	-	30.9
HCM Lane LOS	B	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	11	21	722	562	0
Future Vol, veh/h	21	11	21	722	562	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	4	0
Mvmt Flow	23	12	23	785	611	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1442	611	611	0	-	0
Stage 1	611	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	173	515	978	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	166	515	978	-	-	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	473	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.8	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	978	-	216	-	-
HCM Lane V/C Ratio	0.023	-	0.161	-	-
HCM Control Delay (s)	8.8	0	24.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	453	575	2	6	8
Future Vol, veh/h	9	453	575	2	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	492	625	2	7	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	627	0	-	0	1138	626
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	4.12	-	-	-	7.22	6.62
Critical Hdwy Stg 1	-	-	-	-	6.22	-
Critical Hdwy Stg 2	-	-	-	-	6.22	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	955	-	-	-	173	452
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	955	-	-	-	171	452
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	955	-	-	-	265
HCM Lane V/C Ratio	0.01	-	-	-	0.057
HCM Control Delay (s)	8.8	0	-	-	19.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

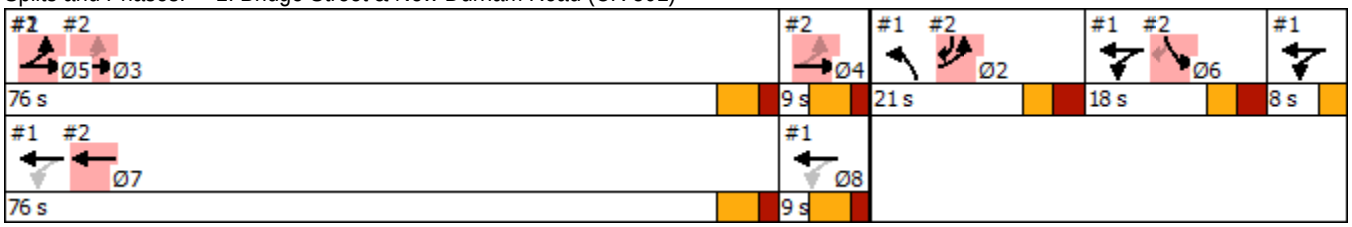
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	440	220	334	303	199	104					
Future Volume (vph)	440	220	334	303	199	104					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.955				0.954						
Flt Protected			0.950		0.968						
Satd. Flow (prot)	1985	0	1762	1900	1878	0					
Flt Permitted			0.165		0.968						
Satd. Flow (perm)	1985	0	306	1900	1878	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	29				16						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.85	0.85	0.89	0.89	0.89	0.89					
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%					
Adj. Flow (vph)	518	259	375	340	224	117					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	777	0	375	340	341	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		104.3	107.3	15.0						
Actuated g/C Ratio	0.53		0.79	0.82	0.11						
v/c Ratio	0.73		0.77	0.22	1.50						
Control Delay	27.4		48.1	1.3	281.6						
Queue Delay	0.0		10.8	0.5	0.0						
Total Delay	27.4		58.9	1.8	281.6						
LOS	C		E	A	F						
Approach Delay	27.4			31.7	281.6						

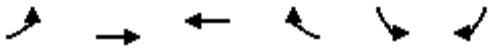
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			C	F						
Queue Length 50th (ft)	476		153	13	~394						
Queue Length 95th (ft)	573		271	45	#582						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1071		490	1552	228						
Starvation Cap Reductn	0		92	802	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.73		0.94	0.45	1.50						

Intersection Summary

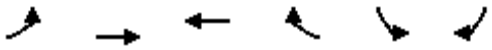
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131.3
Natural Cycle: 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 76.4 Intersection LOS: E
Intersection Capacity Utilization 107.6% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	70	474	447	4	4	190				
Future Volume (vph)	70	474	447	4	4	190				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1862	1985	0	1754	1569				
Flt Permitted	0.369				0.950					
Satd. Flow (perm)	671	1862	1985	0	1754	1569				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.69	0.85	0.89	0.89	0.91	0.91				
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%				
Adj. Flow (vph)	101	558	502	4	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	101	558	506	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		11.3	32.3				
Actuated g/C Ratio	0.73	0.66	0.53		0.09	0.25				
v/c Ratio	0.16	0.45	0.48		0.03	0.38				
Control Delay	2.1	6.0	21.3		55.2	7.2				
Queue Delay	0.1	1.1	0.1		0.0	0.7				
Total Delay	2.2	7.0	21.4		55.2	7.9				
LOS	A	A	C		E	A				
Approach Delay		6.3	21.4		8.8					

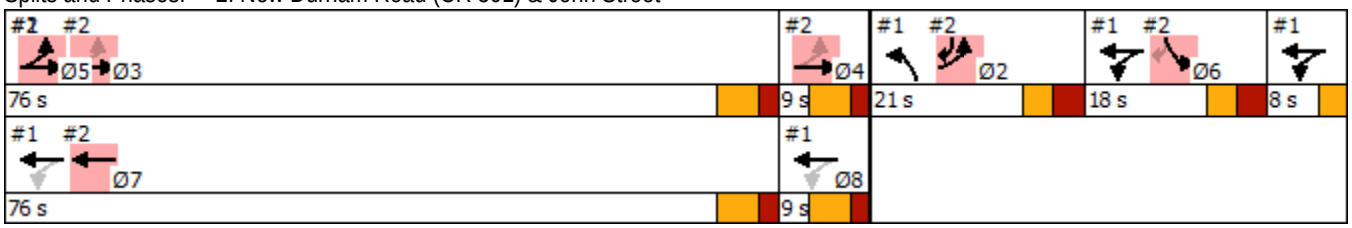


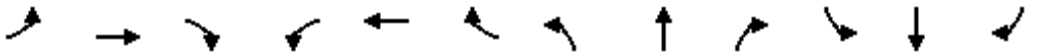
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	8	99	264		3	0				
Queue Length 95th (ft)	m9	m105	352		15	62				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	627	1233	1058		160	544				
Starvation Cap Reductn	146	420	0		0	0				
Spillback Cap Reductn	0	0	72		0	127				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.21	0.69	0.51		0.03	0.50				

Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131.3
Natural Cycle: 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 80.1% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: New Durham Road (CR 501) & John Street





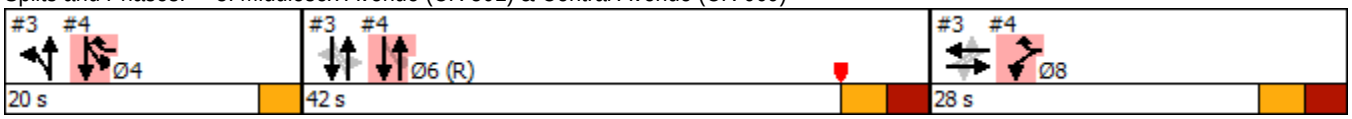
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	71	42	172	227	33	60	474	185	166	389	36
Future Volume (vph)	25	71	42	172	227	33	60	474	185	166	389	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.944			0.981			0.958			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1844	0	1745	1762	0	1736	1724	0	1719	1805	0
Flt Permitted	0.361			0.671			0.291			0.396		
Satd. Flow (perm)	682	1844	0	1232	1762	0	532	1724	0	717	1805	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					8			45			6	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			695			263	
Travel Time (s)		36.1			9.3			19.0			6.0	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.93	0.93	0.93	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	2%	4%	0%	1%	3%	2%	1%	0%
Adj. Flow (vph)	30	85	50	187	247	36	65	510	199	202	474	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	135	0	187	283	0	65	709	0	202	518	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	18.9	18.9		18.9	18.9		59.1	62.1		38.5	38.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.69		0.43	0.43	
v/c Ratio	0.21	0.35		0.72	0.75		0.11	0.59		0.66	0.67	
Control Delay	31.6	31.9		49.0	45.1		5.9	9.9		39.8	32.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	4.1		0.1	6.5	
Total Delay	31.6	31.9		49.0	45.1		5.9	14.0		39.9	38.5	
LOS	C	C		D	D		A	B		D	D	
Approach Delay		31.8			46.7			13.3			38.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			B			D	
Queue Length 50th (ft)	14	63		96	142		12	190		112	285	
Queue Length 95th (ft)	35	105		168	227		25	297		#171	357	
Internal Link Dist (ft)		1242			261			615			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	166	450		301	436		593	1200		306	775	
Starvation Cap Reductn	0	0		0	0		0	0		3	205	
Spillback Cap Reductn	0	0		0	1		0	398		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.30		0.62	0.65		0.11	0.88		0.67	0.91	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 30.8 Intersection LOS: C
Intersection Capacity Utilization 79.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



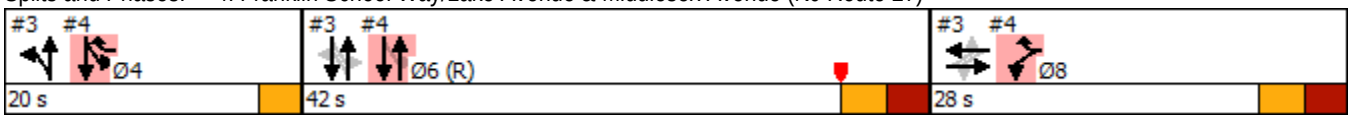
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	208	0	145	0	412	120	243	383	4
Future Volume (vph)	0	0	0	208	0	145	0	412	120	243	383	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.970			0.999	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1686	0	1553	0	1747	0	1916	2078	0
Flt Permitted				0.950						0.169		
Satd. Flow (perm)	0	0	0	1686	0	1553	0	1747	0	341	2078	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						161		19			1	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.82	0.82	0.82	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	4%	0%	1%	0%	1%	3%	1%	1%	0%
Adj. Flow (vph)	0	0	0	231	0	161	0	502	146	267	421	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	231	0	161	0	648	0	267	425	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				18.9		42.5		38.5		59.1	62.1	
Actuated g/C Ratio				0.21		0.47		0.43		0.66	0.69	
v/c Ratio				0.65		0.20		0.85		0.50	0.30	
Control Delay				41.1		2.7		32.3		11.4	4.1	
Queue Delay				0.3		0.0		12.3		0.0	0.1	
Total Delay				41.4		2.7		44.6		11.4	4.2	
LOS				D		A		D		B	A	
Approach Delay					25.5			44.6			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			D			A	
Queue Length 50th (ft)				116		0		343		42	51	
Queue Length 95th (ft)				190		30		#468		m64	m63	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				412		816		758		540	1430	
Starvation Cap Reductn				0		0		101		0	0	
Spillback Cap Reductn				18		0		0		0	299	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.59		0.20		0.99		0.49	0.38	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 65.6% ICU Level of Service C
Analysis Period (min) 15
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: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	552	114	107	421	38	132	247	62	70	159	40
Future Volume (vph)	37	552	114	107	421	38	132	247	62	70	159	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988			0.970			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1719	0	1823	1896	0	1837	1989	0	1805	1958	0
Flt Permitted	0.172			0.188			0.616			0.415		
Satd. Flow (perm)	303	1719	0	361	1896	0	1191	1989	0	788	1958	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	0.81	0.81	0.81	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	3%	0%	0%	2%
Adj. Flow (vph)	43	642	133	118	463	42	163	305	77	73	166	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	775	0	118	505	0	163	382	0	73	208	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	31.5	23.3		30.0	21.3		46.0	37.2		49.5	40.9	
Actuated g/C Ratio	0.35	0.26		0.33	0.24		0.51	0.41		0.55	0.45	
v/c Ratio	0.21	1.75		0.52	1.12		0.25	0.46		0.14	0.23	
Control Delay	21.3	369.7		27.9	115.5		17.1	28.0		9.6	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.3	369.7		27.9	115.5		17.1	28.0		9.6	17.0	
LOS	C	F		C	F		B	C		A	B	
Approach Delay		351.4			98.9			24.8			15.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			F			C			B	
Queue Length 50th (ft)	16	~687		45	~339		56	155		18	76	
Queue Length 95th (ft)	36	#855		83	#530		m75	m198		38	126	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	215	444		235	449		661	822		515	889	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	1.75		0.50	1.12		0.25	0.46		0.14	0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.75	
Intersection Signal Delay: 161.8	Intersection LOS: F
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

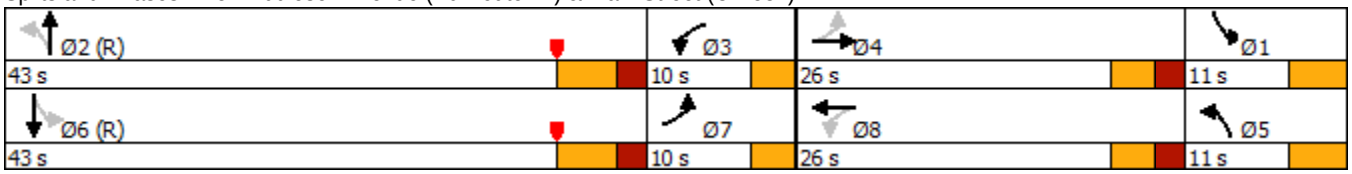
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

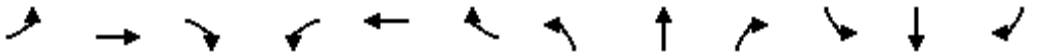
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



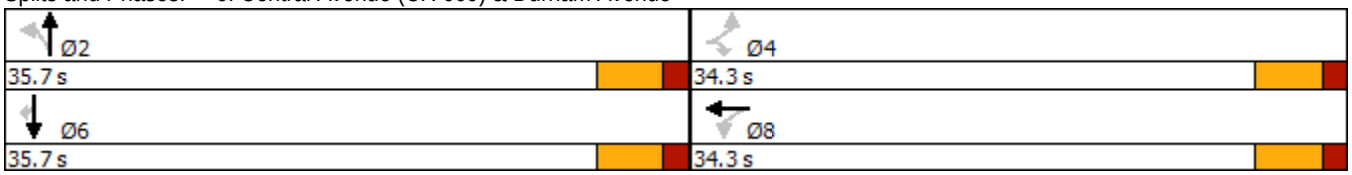


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	0	58	16	41	9	40	281	0	0	303	382
Future Volume (vph)	265	0	58	16	41	9	40	281	0	0	303	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.973							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1615	1814	1858	0	1796	1890	0	0	1890	1607
Flt Permitted	0.707			0.950			0.521					
Satd. Flow (perm)	1343	0	1615	1814	1858	0	985	1890	0	0	1890	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.79	0.79	0.79	0.65	0.65	0.65	0.96	0.96	0.96	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	335	0	73	25	63	14	42	293	0	0	340	429
Shared Lane Traffic (%)												
Lane Group Flow (vph)	335	0	73	25	77	0	42	293	0	0	340	429
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	19.8		19.8	19.8	19.8		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.33		0.33	0.33	0.33		0.51	0.51			0.51	0.51
v/c Ratio	0.77		0.14	0.04	0.13		0.08	0.30			0.35	0.52
Control Delay	30.5		14.2	12.9	14.0		10.4	11.2			11.7	14.5
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	30.5		14.2	12.9	14.0		10.4	11.2			11.7	14.5
LOS	C		B	B	B		B	B			B	B
Approach Delay		27.6			13.7			11.1			13.2	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	107		18	6	19		7	57			68	96
Queue Length 95th (ft)	155		36	14	30		27	135			155	220
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	656		789	886	908		504	967			967	822
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	0.51		0.09	0.03	0.08		0.08	0.30			0.35	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 60.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	307	15	23	437	3	20	0	13	3	0	0
Future Vol, veh/h	0	307	15	23	437	3	20	0	13	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	79	65	65	65	92	65	92	65	92	92	92
Heavy Vehicles, %	2	0	0	0	0	2	0	2	0	2	2	2
Mvmt Flow	0	389	23	35	672	3	31	0	20	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	675	0	0	412	0	0	1145	1146	401	1155	1156	674
Stage 1	-	-	-	-	-	-	401	401	-	744	744	-
Stage 2	-	-	-	-	-	-	744	745	-	411	412	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	916	-	-	1158	-	-	178	199	653	174	197	455
Stage 1	-	-	-	-	-	-	630	601	-	407	421	-
Stage 2	-	-	-	-	-	-	410	421	-	618	594	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	916	-	-	1158	-	-	171	189	653	163	188	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	189	-	163	188	-
Stage 1	-	-	-	-	-	-	630	601	-	407	401	-
Stage 2	-	-	-	-	-	-	390	401	-	599	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	23.9	27.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	241	916	-	-	1158	-	-	163
HCM Lane V/C Ratio	0.211	-	-	-	0.031	-	-	0.02
HCM Control Delay (s)	23.9	0	-	-	8.2	0	-	27.5
HCM Lane LOS	C	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	14	26	694	517	0
Future Vol, veh/h	25	14	26	694	517	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	65	65	92	92	92	92
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	38	22	28	754	562	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1372	562	562	0	-	0
Stage 1	562	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	189	547	1019	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	547	1019	-	-	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.3	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1019	-	237	-	-
HCM Lane V/C Ratio	0.028	-	0.253	-	-
HCM Control Delay (s)	8.6	0	25.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	446	535	4	4	0
Future Vol, veh/h	2	446	535	4	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	485	582	4	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	586	0	-	0	1073	584
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	989	-	-	-	244	512
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	989	-	-	-	243	512
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	616	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	989	-	-	-	243
HCM Lane V/C Ratio	0.002	-	-	-	0.018
HCM Control Delay (s)	8.6	0	-	-	20.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

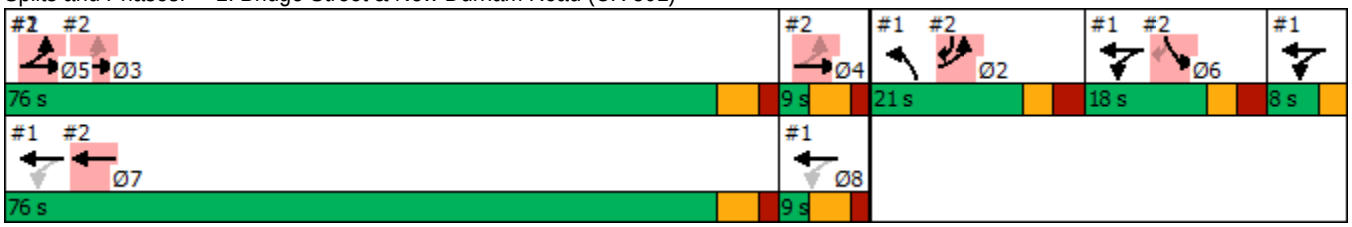
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	395	192	250	360	221	67					
Future Volume (vph)	395	192	250	360	221	67					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.956				0.969						
Flt Protected			0.950		0.963						
Satd. Flow (prot)	1893	0	1678	1828	1819	0					
Flt Permitted			0.254		0.963						
Satd. Flow (perm)	1893	0	449	1828	1819	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	28				9						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.90	0.90	0.78	0.96	0.81	0.81					
Heavy Vehicles (%)	8%	2%	5%	5%	2%	15%					
Adj. Flow (vph)	439	213	321	375	273	83					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	652	0	321	375	356	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		103.9	106.9	15.0						
Actuated g/C Ratio	0.53		0.79	0.82	0.11						
v/c Ratio	0.64		0.57	0.25	1.65						
Control Delay	24.1		19.0	1.6	346.9						
Queue Delay	0.0		1.4	0.6	0.0						
Total Delay	24.1		20.4	2.2	346.9						
LOS	C		C	A	F						
Approach Delay	24.1			10.6	346.9						

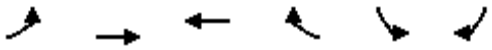
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			B	F						
Queue Length 50th (ft)	366		69	19	~437						
Queue Length 95th (ft)	500		81	57	#554						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1025		550	1480	216						
Starvation Cap Reductn	0		93	727	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.64		0.70	0.50	1.65						

Intersection Summary

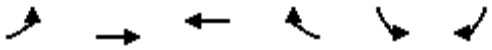
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 130.9
Natural Cycle: 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.65
Intersection Signal Delay: 86.0 Intersection LOS: F
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





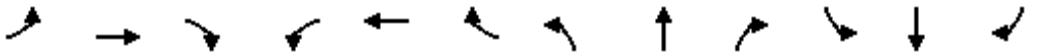
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	43	419	418	2	4	192				
Future Volume (vph)	43	419	418	2	4	192				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1599	1742	1909	0	1754	1509				
Flt Permitted	0.422				0.950					
Satd. Flow (perm)	710	1742	1909	0	1754	1509				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.84	0.84	0.96	0.96	0.92	0.92				
Heavy Vehicles (%)	8%	8%	5%	2%	0%	4%				
Adj. Flow (vph)	51	499	435	2	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	51	499	437	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		10.9	31.9				
Actuated g/C Ratio	0.73	0.66	0.53		0.08	0.24				
v/c Ratio	0.08	0.43	0.43		0.03	0.40				
Control Delay	1.8	5.5	20.2		55.2	7.4				
Queue Delay	0.0	0.6	0.0		0.0	0.0				
Total Delay	1.8	6.1	20.2		55.2	7.4				
LOS	A	A	C		E	A				
Approach Delay		5.7	20.2		8.3					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	4	80	219		3	0				
Queue Length 95th (ft)	m5	m86	305		15	63				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	636	1158	1021		160	525				
Starvation Cap Reductn	0	321	0		0	0				
Spillback Cap Reductn	0	0	0		0	0				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.08	0.60	0.43		0.03	0.40				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 130.9			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.65			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street



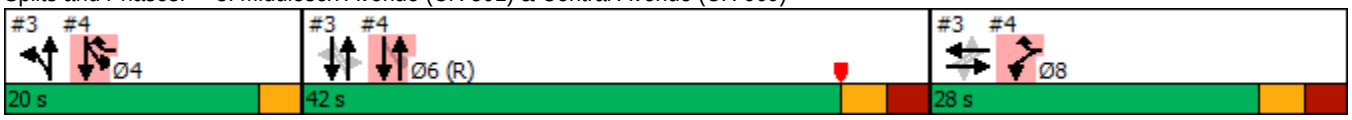
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	415	70	14	82	11	18	197	476	346	244	19
Future Volume (vph)	328	415	70	14	82	11	18	197	476	346	244	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.982			0.894			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1911	0	1163	1670	0	1736	1584	0	1702	1772	0
Flt Permitted	0.688			0.182			0.497			0.353		
Satd. Flow (perm)	1301	1911	0	223	1670	0	908	1584	0	633	1772	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					7			94			7	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			709			263	
Travel Time (s)		36.1			9.3			19.3			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.88	0.88	0.88	0.65	0.89	0.65
Heavy Vehicles (%)	0%	0%	0%	50%	3%	44%	0%	6%	2%	3%	3%	0%
Adj. Flow (vph)	357	451	76	16	94	13	20	224	541	532	274	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	527	0	16	107	0	20	765	0	532	303	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	22.0	22.0		22.0	22.0		56.0	59.0		36.0	36.0	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.62	0.66		0.40	0.40	
v/c Ratio	1.12	1.13		0.30	0.26		0.03	0.71		2.10	0.42	
Control Delay	121.9	115.4		44.1	27.6		5.6	13.3		531.1	25.9	
Queue Delay	6.5	0.0		0.0	1.1		0.0	52.8		0.0	2.9	
Total Delay	128.3	115.4		44.1	28.7		5.6	66.1		531.1	28.8	
LOS	F	F		D	C		A	E		F	C	
Approach Delay		120.6			30.7			64.6			348.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			E			F	
Queue Length 50th (ft)	~237	~351		7	46		4	218		~489	143	
Queue Length 95th (ft)	#406	#544		28	87		11	340		#457	226	
Internal Link Dist (ft)		1242			261			629			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	318	467		54	413		721	1070		253	713	
Starvation Cap Reductn	0	0		0	0		0	0		0	299	
Spillback Cap Reductn	121	0		0	158		0	524		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.81	1.13		0.30	0.42		0.03	1.40		2.10	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.10			
Intersection Signal Delay: 172.2		Intersection LOS: F	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



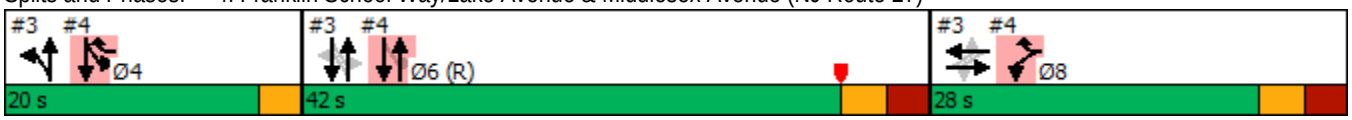
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	218	0	88	0	419	117	163	391	0
Future Volume (vph)	0	0	0	218	0	88	0	419	117	163	391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.972				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1552	0	1509	0	1606	0	1879	2039	0
Flt Permitted				0.950						0.180		
Satd. Flow (perm)	0	0	0	1552	0	1509	0	1606	0	356	2039	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						99		18				
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.88	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	13%	2%	4%	2%	6%	28%	3%	3%	0%
Adj. Flow (vph)	0	0	0	245	0	99	0	476	126	172	412	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	245	0	99	0	602	0	172	412	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				22.0		45.0		36.0		56.0	59.0	
Actuated g/C Ratio				0.24		0.50		0.40		0.62	0.66	
v/c Ratio				0.65		0.12		0.92		0.34	0.31	
Control Delay				39.6		3.0		45.5		7.5	4.7	
Queue Delay				0.4		0.0		48.9		0.0	0.6	
Total Delay				40.0		3.0		94.3		7.5	5.3	
LOS				D		A		F		A	A	
Approach Delay					29.4			94.3			6.0	

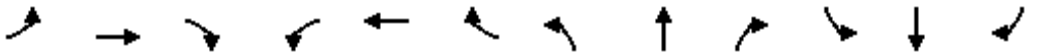
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			F			A	
Queue Length 50th (ft)				125		0		354		20	49	
Queue Length 95th (ft)				204		24		m362		m42	m63	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				379		804		653		509	1336	
Starvation Cap Reductn				0		0		255		0	0	
Spillback Cap Reductn				15		0		0		0	574	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.67		0.12		1.51		0.34	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.10			
Intersection Signal Delay: 46.0		Intersection LOS: D	
Intersection Capacity Utilization 61.9%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	386	95	99	383	68	81	329	47	43	147	26
Future Volume (vph)	80	386	95	99	383	68	81	329	47	43	147	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.977			0.981			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1567	1643	0	1787	1830	0	1784	2010	0	1805	1890	0
Flt Permitted	0.159			0.174			0.615			0.292		
Satd. Flow (perm)	262	1643	0	327	1830	0	1155	2010	0	555	1890	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.75	0.75	0.75	0.84	0.84	0.84
Heavy Vehicles (%)	7%	4%	5%	2%	2%	5%	4%	1%	5%	0%	4%	9%
Adj. Flow (vph)	91	439	108	108	416	74	108	439	63	51	175	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	547	0	108	490	0	108	502	0	51	206	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	32.6	25.1		30.6	23.0		46.8	39.4		46.6	39.4	
Actuated g/C Ratio	0.36	0.28		0.34	0.26		0.52	0.44		0.52	0.44	
v/c Ratio	0.48	1.20		0.50	1.05		0.17	0.57		0.14	0.25	
Control Delay	27.3	140.8		27.5	90.4		17.0	30.2		10.2	18.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.3	140.8		27.5	90.4		17.0	30.2		10.2	18.0	
LOS	C	F		C	F		B	C		B	B	
Approach Delay		124.6			79.0			27.9			16.4	

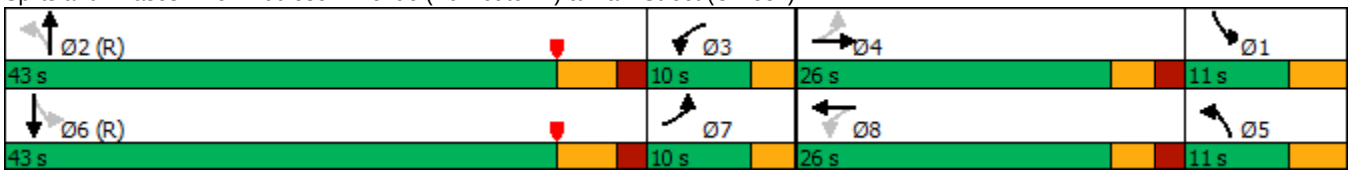
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			E			C			B	
Queue Length 50th (ft)	34	~425		41	~330		37	208		12	76	
Queue Length 95th (ft)	66	#602		77	#519		m46	m239		26	116	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	196	457		224	468		651	879		386	826	
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	0.46	1.20		0.48	1.05		0.17	0.57		0.13	0.25	

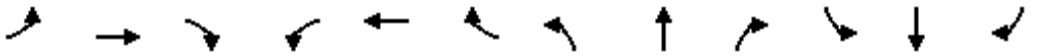
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 70.4 Intersection LOS: E
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

~ 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.
! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



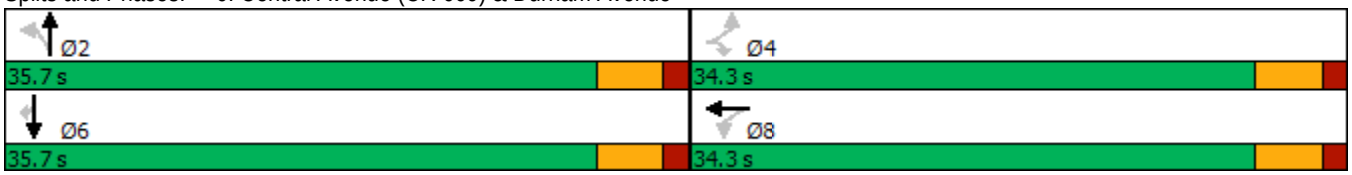


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	0	74	12	50	21	56	351	0	0	306	366
Future Volume (vph)	343	0	74	12	50	21	56	351	0	0	306	366
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.956							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1583	1814	1825	0	1796	1853	0	0	1853	1607
Flt Permitted	0.687			0.950			0.467					
Satd. Flow (perm)	1305	0	1583	1814	1825	0	883	1853	0	0	1853	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.84	0.84	0.92	0.65	0.65	0.65	0.82	0.82	0.82	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	408	0	80	18	77	32	68	428	0	0	378	452
Shared Lane Traffic (%)												
Lane Group Flow (vph)	408	0	80	18	109	0	68	428	0	0	378	452
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	23.9		23.9	23.9	23.9		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.37		0.37	0.37	0.37		0.48	0.48			0.48	0.48
v/c Ratio	0.85		0.14	0.03	0.16		0.16	0.48			0.43	0.59
Control Delay	36.6		13.5	12.2	13.7		12.7	15.0			14.2	17.5
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	36.6		13.5	12.2	13.7		12.7	15.0			14.2	17.5
LOS	D		B	B	B		B	B			B	B
Approach Delay		32.8			13.5			14.7			16.0	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	143		20	4	28		15	115			98	130
Queue Length 95th (ft)	223		45	11	40		37	181			154	203
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	597		724	829	835		423	888			888	770
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	0.68		0.11	0.02	0.13		0.16	0.48			0.43	0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 64.8			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 19.7		Intersection LOS: B	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	346	52	89	382	1	49	0	67	4	0	0
Future Vol, veh/h	0	346	52	89	382	1	49	0	67	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	84	92	65	92	92	65	92	65	92	92	92
Heavy Vehicles, %	2	0	0	0	0	2	0	2	0	2	2	2
Mvmt Flow	0	412	57	137	415	1	75	0	103	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	469	0	0	1131	1131	441	1182	1159	416
Stage 1	-	-	-	-	-	-	441	441	-	690	690	-
Stage 2	-	-	-	-	-	-	690	690	-	492	469	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1143	-	-	1103	-	-	182	203	621	167	196	637
Stage 1	-	-	-	-	-	-	599	577	-	435	446	-
Stage 2	-	-	-	-	-	-	439	446	-	558	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1103	-	-	159	170	621	122	164	637
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	170	-	122	164	-
Stage 1	-	-	-	-	-	-	599	577	-	435	374	-
Stage 2	-	-	-	-	-	-	368	374	-	465	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.2	38.3	35.6
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	279	1143	-	-	1103	-	-	122
HCM Lane V/C Ratio	0.64	-	-	-	0.124	-	-	0.036
HCM Control Delay (s)	38.3	0	-	-	8.7	0	-	35.6
HCM Lane LOS	E	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	4	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	66	87	655	466	40
Future Vol, veh/h	52	66	87	655	466	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	85	0	140	-	-	80
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	92	92	92	92	89	92
Heavy Vehicles, %	2	2	0	6	5	0
Mvmt Flow	57	72	95	712	524	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1426	524	567	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Critical Hdwy	6.02	6.02	4.1	-	-	-
Critical Hdwy Stg 1	5.02	-	-	-	-	-
Critical Hdwy Stg 2	5.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	175	570	1015	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	159	570	1015	-	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.3	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1015	-	159	570	-	-
HCM Lane V/C Ratio	0.093	-	0.355	0.126	-	-
HCM Control Delay (s)	8.9	-	39.6	12.2	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1.5	0.4	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	443	528	4	6	4
Future Vol, veh/h	2	443	528	4	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	482	574	4	7	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	578	0	-	0	1062	576
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	4.12	-	-	-	7.22	6.62
Critical Hdwy Stg 1	-	-	-	-	6.22	-
Critical Hdwy Stg 2	-	-	-	-	6.22	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	996	-	-	-	195	485
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	555	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	996	-	-	-	194	485
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	555	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	996	-	-	-	255
HCM Lane V/C Ratio	0.002	-	-	-	0.043
HCM Control Delay (s)	8.6	0	-	-	19.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

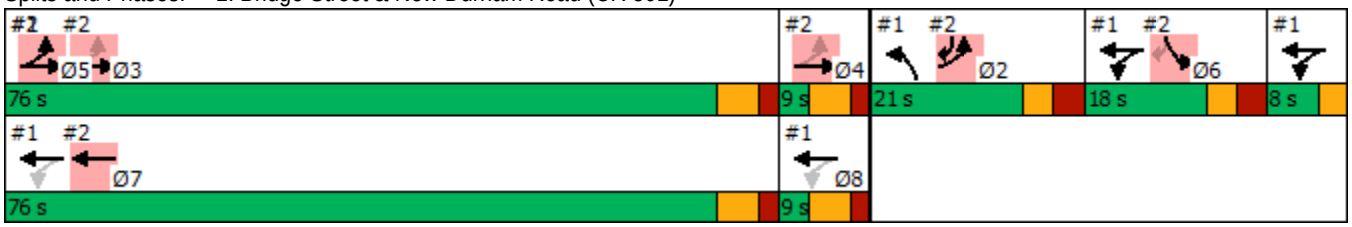
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	433	285	402	353	241	86					
Future Volume (vph)	433	285	402	353	241	86					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.946				0.965						
Flt Protected			0.950		0.964						
Satd. Flow (prot)	1939	0	1762	1863	1890	0					
Flt Permitted			0.154		0.964						
Satd. Flow (perm)	1939	0	286	1863	1890	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	38				11						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.91	0.91	0.94	0.94	0.92	0.92					
Heavy Vehicles (%)	4%	0%	0%	3%	1%	0%					
Adj. Flow (vph)	476	313	428	376	262	93					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	789	0	428	376	355	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		105.0	108.0	15.0						
Actuated g/C Ratio	0.53		0.80	0.82	0.11						
v/c Ratio	0.75		0.88	0.25	1.58						
Control Delay	28.7		61.4	1.3	319.5						
Queue Delay	0.0		42.2	0.6	0.0						
Total Delay	28.7		103.6	1.9	319.5						
LOS	C		F	A	F						
Approach Delay	28.7			56.1	319.5						

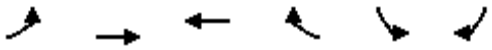
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			E	F						
Queue Length 50th (ft)	490		207	15	~426						
Queue Length 95th (ft)	659		#390	49	#625						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1046		484	1524	224						
Starvation Cap Reductn	0		88	778	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.75		1.08	0.50	1.58						

Intersection Summary

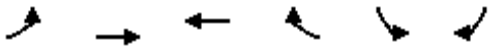
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.58
Intersection Signal Delay: 93.0 Intersection LOS: F
Intersection Capacity Utilization 112.5% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





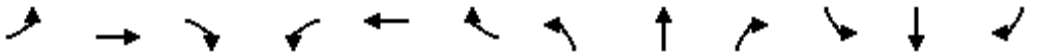
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	56	463	531	9	3	224				
Future Volume (vph)	56	463	531	9	3	224				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.998			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1809	1945	0	1754	1553				
Flt Permitted	0.303				0.950					
Satd. Flow (perm)	551	1809	1945	0	1754	1553				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)			1			255				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.86	0.91	0.91	0.91	0.88	0.88				
Heavy Vehicles (%)	0%	4%	3%	0%	0%	1%				
Adj. Flow (vph)	65	509	584	10	3	255				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	65	509	594	0	3	255				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		12.0	33.0				
Actuated g/C Ratio	0.73	0.66	0.53		0.09	0.25				
v/c Ratio	0.12	0.43	0.58		0.02	0.44				
Control Delay	1.8	5.3	23.7		55.0	7.1				
Queue Delay	0.0	1.1	0.7		0.0	2.4				
Total Delay	1.8	6.4	24.4		55.0	9.5				
LOS	A	A	C		D	A				
Approach Delay		5.9	24.4		10.1					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		B					
Queue Length 50th (ft)	5	81	332		2	0				
Queue Length 95th (ft)	m6	m92	447		13	62				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	552	1192	1031		159	579				
Starvation Cap Reductn	0	438	0		0	0				
Spillback Cap Reductn	0	0	176		0	208				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.12	0.68	0.69		0.02	0.69				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.58			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street



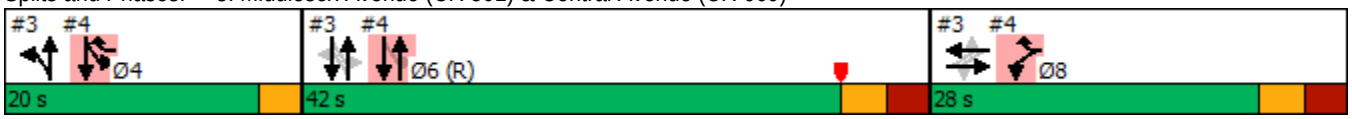
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	90	64	158	258	50	46	446	257	181	389	38
Future Volume (vph)	25	90	64	158	258	50	46	446	257	181	389	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.937			0.975			0.945			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1830	0	1586	1750	0	1736	1681	0	1654	1789	0
Flt Permitted	0.306			0.595			0.314			0.348		
Satd. Flow (perm)	578	1830	0	993	1750	0	574	1681	0	606	1789	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					10			67			6	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			709			263	
Travel Time (s)		36.1			9.3			19.3			6.0	
Peak Hour Factor	0.88	0.88	0.88	0.97	0.97	0.97	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	10%	1%	9%	0%	2%	4%	6%	2%	0%
Adj. Flow (vph)	28	102	73	163	266	52	52	507	292	206	442	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	175	0	163	318	0	52	799	0	206	485	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	19.7	19.7		19.7	19.7		58.3	61.3		37.7	37.7	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.65	0.68		0.42	0.42	
v/c Ratio	0.22	0.44		0.75	0.82		0.09	0.69		0.81	0.64	
Control Delay	32.4	33.3		54.7	49.4		5.8	12.2		58.2	34.9	
Queue Delay	0.0	0.0		0.0	0.1		0.0	16.7		0.0	8.8	
Total Delay	32.4	33.3		54.7	49.4		5.8	28.9		58.2	43.7	
LOS	C	C		D	D		A	C		E	D	
Approach Delay		33.2			51.2			27.5			48.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	13	83		84	162		9	237		121	275	
Queue Length 95th (ft)	36	140		#173	#278		21	357		m#216	306	
Internal Link Dist (ft)		1242			261			629			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	141	447		242	435		599	1166		253	752	
Starvation Cap Reductn	0	0		0	0		0	0		0	229	
Spillback Cap Reductn	0	0		0	2		0	368		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.39		0.67	0.73		0.09	1.00		0.81	0.93	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



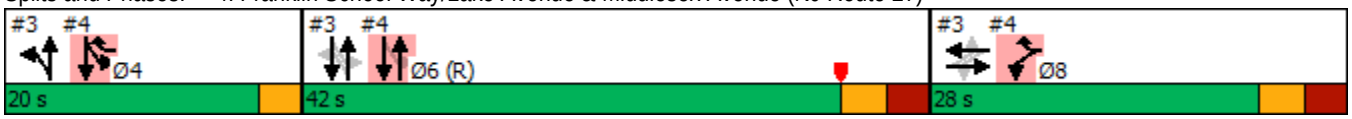
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	247	0	91	0	383	138	194	361	1
Future Volume (vph)	0	0	0	247	0	91	0	383	138	194	361	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.964				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1639	0	1553	0	1679	0	1916	2059	0
Flt Permitted				0.950						0.177		
Satd. Flow (perm)	0	0	0	1639	0	1553	0	1679	0	357	2059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						107		24				
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	7%	0%	1%	2%	2%	13%	1%	2%	0%
Adj. Flow (vph)	0	0	0	291	0	107	0	461	166	213	397	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	291	0	107	0	627	0	213	398	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				19.7		43.3		37.7		58.3	61.3	
Actuated g/C Ratio				0.22		0.48		0.42		0.65	0.68	
v/c Ratio				0.81		0.13		0.88		0.40	0.28	
Control Delay				51.6		2.9		33.0		10.2	4.3	
Queue Delay				0.7		0.0		37.2		0.0	0.1	
Total Delay				52.3		2.9		70.2		10.2	4.3	
LOS				D		A		E		B	A	
Approach Delay					39.0			70.2			6.4	

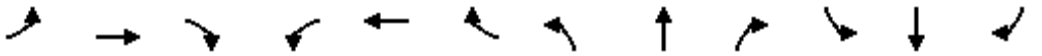
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					D			E			A	
Queue Length 50th (ft)				152		0		333		36	45	
Queue Length 95th (ft)				227		22		#467		m61	m65	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				400		802		716		537	1402	
Starvation Cap Reductn				0		0		130		0	0	
Spillback Cap Reductn				15		0		0		0	198	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.76		0.13		1.07		0.40	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 38.8 Intersection LOS: D
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15
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: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	468	91	117	468	53	102	307	54	78	217	25
Future Volume (vph)	58	468	91	117	468	53	102	307	54	78	217	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.985			0.978			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1708	0	1805	1890	0	1718	2034	0	1787	1975	0
Flt Permitted	0.188			0.188			0.553			0.407		
Satd. Flow (perm)	328	1708	0	357	1890	0	1000	2034	0	766	1975	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	0%	1%	0%	0%	8%	0%	0%	1%	1%	2%
Adj. Flow (vph)	70	564	110	130	520	59	113	341	60	86	238	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	674	0	130	579	0	113	401	0	86	265	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	29.9	21.3		30.0	21.3		46.8	39.3		48.5	41.1	
Actuated g/C Ratio	0.33	0.24		0.33	0.24		0.52	0.44		0.54	0.46	
v/c Ratio	0.34	1.67		0.57	1.30		0.20	0.45		0.18	0.29	
Control Delay	23.7	340.0		30.4	180.8		17.2	27.8		10.3	18.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.7	340.0		30.4	180.8		17.2	27.8		10.3	18.1	
LOS	C	F		C	F		B	C		B	B	
Approach Delay		310.3			153.2			25.5			16.2	

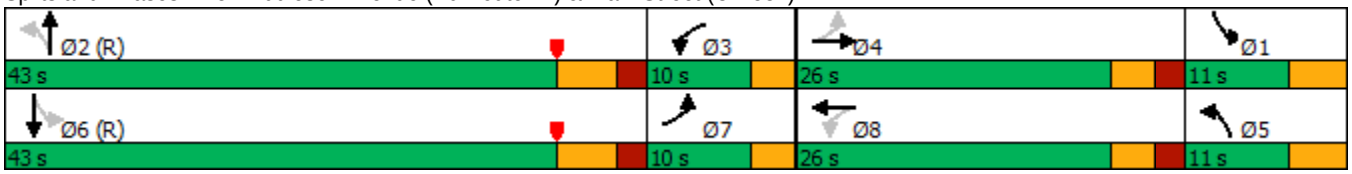
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			F			C			B	
Queue Length 50th (ft)	26	~567		50	~428		39	163		21	100	
Queue Length 95th (ft)	50	#699		91	#628		m53	m206		43	159	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	213	403		232	446		576	888		493	900	
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	0.33	1.67		0.56	1.30		0.20	0.45		0.17	0.29	

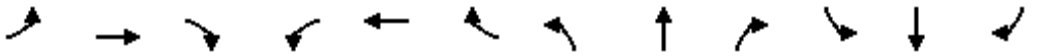
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.67
Intersection Signal Delay: 154.6 Intersection LOS: F
Intersection Capacity Utilization 76.2% ICU Level of Service D
Analysis Period (min) 15

~ 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.
! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



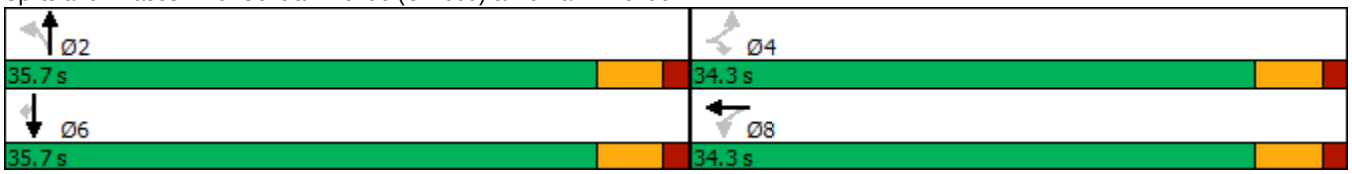


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	0	79	8	78	19	47	406	0	0	416	477
Future Volume (vph)	370	0	79	8	78	19	47	406	0	0	416	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.971							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1615	1814	1854	0	1448	1890	0	0	1890	1607
Flt Permitted	0.687			0.950			0.414					
Satd. Flow (perm)	1305	0	1615	1814	1854	0	631	1890	0	0	1890	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	24%	0%	0%	3%	0%	0%
Adj. Flow (vph)	398	0	85	9	88	21	55	472	0	0	438	502
Shared Lane Traffic (%)												
Lane Group Flow (vph)	398	0	85	9	109	0	55	472	0	0	438	502
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	23.4		23.4	23.4	23.4		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.36		0.36	0.36	0.36		0.48	0.48			0.48	0.48
v/c Ratio	0.84		0.15	0.01	0.16		0.18	0.52			0.48	0.65
Control Delay	35.7		13.6	12.1	13.8		13.4	15.4			14.8	18.9
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	35.7		13.6	12.1	13.8		13.4	15.4			14.8	18.9
LOS	D		B	B	B		B	B			B	B
Approach Delay		31.8			13.6			15.2			17.0	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	138		22	2	28		12	126			114	146
Queue Length 95th (ft)	#272		47	10	56		35	216			212	279
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	601		744	836	854		304	912			912	776
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	0.66		0.11	0.01	0.13		0.18	0.52			0.48	0.65

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 64.3			
Natural Cycle: 65			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	355	46	80	519	3	66	0	92	2	0	0
Future Vol, veh/h	0	355	46	80	519	3	66	0	92	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	65	65	92	92	88	92	88	92	92	92
Heavy Vehicles, %	2	0	0	0	4	2	0	2	0	2	2	2
Mvmt Flow	0	386	71	123	564	3	75	0	105	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	567	0	0	457	0	0	1234	1235	422	1286	1269	566
Stage 1	-	-	-	-	-	-	422	422	-	812	812	-
Stage 2	-	-	-	-	-	-	812	813	-	474	457	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1005	-	-	1114	-	-	155	176	636	141	168	524
Stage 1	-	-	-	-	-	-	613	588	-	373	392	-
Stage 2	-	-	-	-	-	-	376	392	-	571	568	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1005	-	-	1114	-	-	136	148	636	103	141	524
Mov Cap-2 Maneuver	-	-	-	-	-	-	136	148	-	103	141	-
Stage 1	-	-	-	-	-	-	613	588	-	373	329	-
Stage 2	-	-	-	-	-	-	315	329	-	477	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.5	48.7	40.7
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	251	1005	-	-	1114	-	-	103
HCM Lane V/C Ratio	0.715	-	-	-	0.11	-	-	0.021
HCM Control Delay (s)	48.7	0	-	-	8.6	0	-	40.7
HCM Lane LOS	E	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	4.9	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	77	72	717	549	32
Future Vol, veh/h	54	77	72	717	549	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	80	0	140	-	-	80
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	4	0
Mvmt Flow	59	84	78	779	597	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1532	597	632	0	-	0
Stage 1	597	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	154	524	960	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	524	960	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	427	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.2	0.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	960	-	142	524	-	-
HCM Lane V/C Ratio	0.082	-	0.413	0.16	-	-
HCM Control Delay (s)	9.1	-	47.1	13.2	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1.8	0.6	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	477	628	2	6	8
Future Vol, veh/h	9	477	628	2	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	518	683	2	7	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	685	0	-	0	1222	684
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	4.12	-	-	-	7.22	6.62
Critical Hdwy Stg 1	-	-	-	-	6.22	-
Critical Hdwy Stg 2	-	-	-	-	6.22	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	908	-	-	-	151	416
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	519	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	908	-	-	-	149	416
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	908	-	-	-	235
HCM Lane V/C Ratio	0.011	-	-	-	0.065
HCM Control Delay (s)	9	0	-	-	21.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

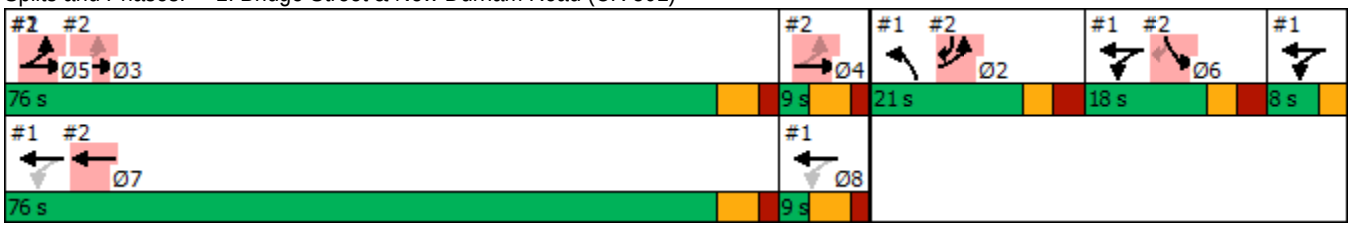
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	437	220	349	311	199	112					
Future Volume (vph)	437	220	349	311	199	112					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.955				0.951						
Flt Protected			0.950		0.969						
Satd. Flow (prot)	1985	0	1762	1900	1874	0					
Flt Permitted			0.167		0.969						
Satd. Flow (perm)	1985	0	310	1900	1874	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	29				17						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.85	0.85	0.89	0.89	0.89	0.89					
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%					
Adj. Flow (vph)	514	259	392	349	224	126					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	773	0	392	349	350	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	76.0				21.0		9.0	8.0	18.0	76.0	9.0
Total Split (%)	57.6%				15.9%		7%	6%	14%	58%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	70.0		104.4	107.4	15.0						
Actuated g/C Ratio	0.53		0.79	0.82	0.11						
v/c Ratio	0.72		0.79	0.22	1.53						
Control Delay	27.3		50.7	1.3	295.8						
Queue Delay	0.0		15.7	0.5	0.0						
Total Delay	27.3		66.4	1.8	295.8						
LOS	C		E	A	F						
Approach Delay	27.3			36.0	295.8						

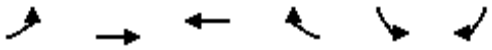
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			D	F						
Queue Length 50th (ft)	472		167	13	~409						
Queue Length 95th (ft)	568		#289	45	#599						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1070		493	1552	229						
Starvation Cap Reductn	0		92	788	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.72		0.98	0.46	1.53						

Intersection Summary

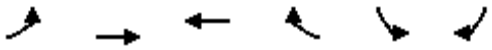
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131.4
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.53
Intersection Signal Delay: 81.2 Intersection LOS: F
Intersection Capacity Utilization 108.9% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





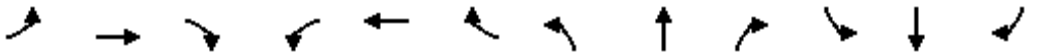
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	70	479	470	4	4	190				
Future Volume (vph)	70	479	470	4	4	190				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1862	1985	0	1754	1569				
Flt Permitted	0.350				0.950					
Satd. Flow (perm)	636	1862	1985	0	1754	1569				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.69	0.85	0.89	0.89	0.91	0.91				
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%				
Adj. Flow (vph)	101	564	528	4	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	101	564	532	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			76.0		18.0	21.0	76.0	9.0	8.0	9.0
Total Split (%)			57.6%		13.6%	15.9%	58%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	87.0	70.0		11.4	32.4				
Actuated g/C Ratio	0.73	0.66	0.53		0.09	0.25				
v/c Ratio	0.17	0.46	0.50		0.03	0.38				
Control Delay	2.2	6.3	21.8		55.2	7.2				
Queue Delay	0.1	1.1	0.1		0.0	0.8				
Total Delay	2.3	7.5	22.0		55.2	8.0				
LOS	A	A	C		E	A				
Approach Delay		6.7	22.0		8.9					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	9	106	283		3	0				
Queue Length 95th (ft)	m10	m112	376		15	62				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	606	1232	1057		160	544				
Starvation Cap Reductn	130	420	0		0	0				
Spillback Cap Reductn	0	0	80		0	137				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.21	0.69	0.54		0.03	0.51				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 131.4			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.53			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street



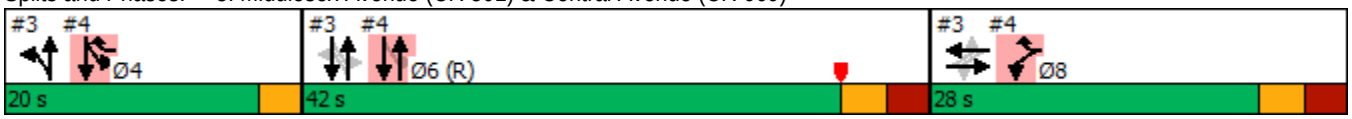
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	78	50	172	235	33	67	464	185	166	390	36
Future Volume (vph)	25	78	50	172	235	33	67	464	185	166	390	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941			0.981			0.957			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1838	0	1745	1762	0	1736	1722	0	1719	1805	0
Flt Permitted	0.348			0.640			0.289			0.400		
Satd. Flow (perm)	658	1838	0	1175	1762	0	528	1722	0	724	1805	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					7			46			6	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			695			263	
Travel Time (s)		36.1			9.3			19.0			6.0	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.93	0.93	0.93	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	2%	4%	0%	1%	3%	2%	1%	0%
Adj. Flow (vph)	30	93	60	187	255	36	72	499	199	202	476	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	153	0	187	291	0	72	698	0	202	520	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	28.0	28.0		28.0	28.0		20.0			42.0	42.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		22.2%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	19.1	19.1		19.1	19.1		58.9	61.9		38.5	38.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.65	0.69		0.43	0.43	
v/c Ratio	0.22	0.39		0.75	0.77		0.12	0.58		0.65	0.67	
Control Delay	31.8	32.6		51.7	45.9		6.0	9.8		39.4	32.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	3.4		0.2	6.5	
Total Delay	31.8	32.6		51.7	45.9		6.0	13.3		39.5	38.6	
LOS	C	C		D	D		A	B		D	D	
Approach Delay		32.5			48.2			12.6			38.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			B			D	
Queue Length 50th (ft)	14	72		96	146		13	187		111	287	
Queue Length 95th (ft)	35	117		#182	234		27	290		170	358	
Internal Link Dist (ft)		1242			261			615			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	160	449		287	436		587	1195		309	774	
Starvation Cap Reductn	0	0		0	0		0	0		4	202	
Spillback Cap Reductn	0	0		0	1		0	389		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.34		0.65	0.67		0.12	0.87		0.66	0.91	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 81.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



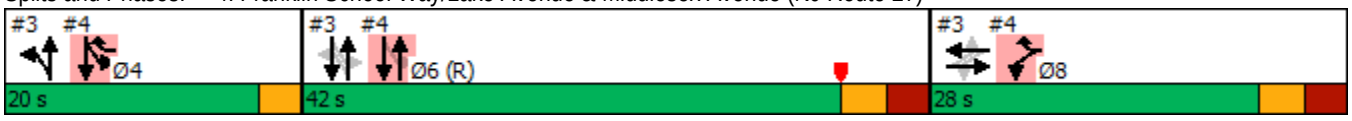
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	208	0	145	0	402	120	243	384	4
Future Volume (vph)	0	0	0	208	0	145	0	402	120	243	384	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.969			0.999	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1686	0	1553	0	1745	0	1916	2078	0
Flt Permitted				0.950						0.180		
Satd. Flow (perm)	0	0	0	1686	0	1553	0	1745	0	363	2078	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						161		20			1	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.82	0.82	0.82	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	4%	0%	1%	0%	1%	3%	1%	1%	0%
Adj. Flow (vph)	0	0	0	231	0	161	0	490	146	267	422	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	231	0	161	0	636	0	267	426	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				28.0				42.0		20.0		
Total Split (%)				31.1%				46.7%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				19.1		42.5		38.5		58.9	61.9	
Actuated g/C Ratio				0.21		0.47		0.43		0.65	0.69	
v/c Ratio				0.65		0.20		0.84		0.50	0.30	
Control Delay				40.6		2.7		31.1		10.7	4.2	
Queue Delay				0.3		0.0		10.2		0.0	0.1	
Total Delay				40.9		2.7		41.4		10.7	4.3	
LOS				D		A		D		B	A	
Approach Delay					25.2			41.4			6.8	

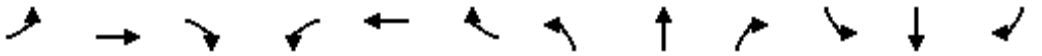
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			D			A	
Queue Length 50th (ft)				115		0		334		41	52	
Queue Length 95th (ft)				190		30		#452		m63	m64	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				412		826		757		547	1425	
Starvation Cap Reductn				0		0		103		0	0	
Spillback Cap Reductn				19		0		0		0	297	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.59		0.19		0.97		0.49	0.38	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15
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: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	552	114	107	421	38	132	237	62	70	160	40
Future Volume (vph)	37	552	114	107	421	38	132	237	62	70	160	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	13	15	15	12	14	14
Grade (%)		1%			-2%			1%			0%	
Storage Length (ft)	130		0	130		0	75		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988			0.969			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1676	1719	0	1823	1896	0	1837	1987	0	1805	1958	0
Flt Permitted	0.172			0.188			0.614			0.427		
Satd. Flow (perm)	303	1719	0	361	1896	0	1188	1987	0	811	1958	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		301			225			1166			351	
Travel Time (s)		8.2			6.1			26.5			8.0	
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91	0.81	0.81	0.81	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	3%	0%	0%	2%
Adj. Flow (vph)	43	642	133	118	463	42	163	293	77	73	167	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	775	0	118	505	0	163	370	0	73	209	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7!	4!		3!	8!		5!	2!		1!	6!	
Permitted Phases	4!			8!			2!			6!		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		10.0	23.0		11.0	24.0		11.0	24.0	
Total Split (s)	10.0	26.0		10.0	26.0		11.0	43.0		11.0	43.0	
Total Split (%)	11.1%	28.9%		11.1%	28.9%		12.2%	47.8%		12.2%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	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)	3.0	5.0		3.0	5.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	31.5	23.3		30.0	21.3		46.0	37.2		49.5	40.9	
Actuated g/C Ratio	0.35	0.26		0.33	0.24		0.51	0.41		0.55	0.45	
v/c Ratio	0.21	1.75		0.52	1.12		0.25	0.45		0.14	0.24	
Control Delay	21.3	369.7		27.9	115.5		17.0	27.8		9.6	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.3	369.7		27.9	115.5		17.0	27.8		9.6	17.0	
LOS	C	F		C	F		B	C		A	B	
Approach Delay		351.4			98.9			24.5			15.1	

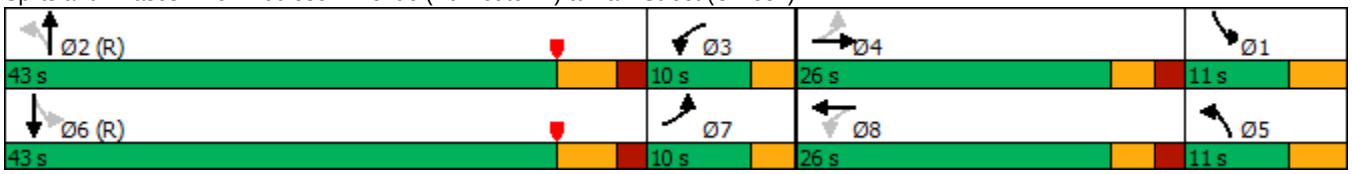
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			F			C			B	
Queue Length 50th (ft)	16	~687		45	~339		55	149		18	76	
Queue Length 95th (ft)	36	#855		83	#530		m76	m194		38	126	
Internal Link Dist (ft)		221			145			1086			271	
Turn Bay Length (ft)	130			130			75			130		
Base Capacity (vph)	215	444		235	449		660	821		526	889	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	1.75		0.50	1.12		0.25	0.45		0.14	0.24	

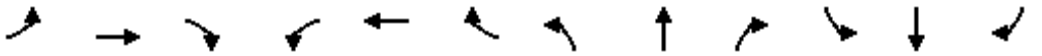
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 40 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.75
Intersection Signal Delay: 162.4 Intersection LOS: F
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15

~ 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.
! Phase conflict between lane groups.

Splits and Phases: 5: Middlesex Avenue (NJ Route 27) & Main Street (CR 531)



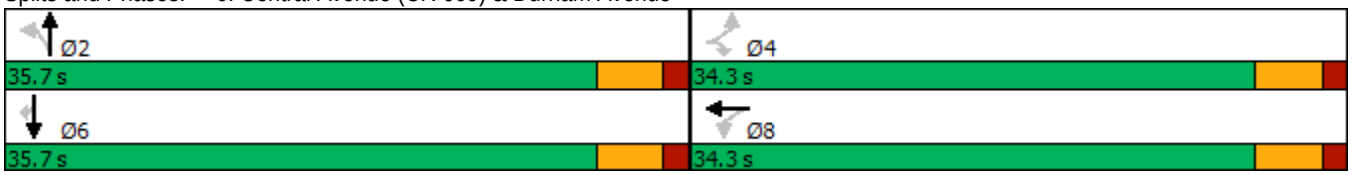


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	296	0	65	16	41	9	48	288	0	0	306	405
Future Volume (vph)	296	0	65	16	41	9	48	288	0	0	306	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-1%			1%			1%	
Storage Length (ft)	100		0	55		0	170		0	0		115
Storage Lanes	1		1	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.973							0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1805	0	1615	1814	1858	0	1796	1890	0	0	1890	1607
Flt Permitted	0.707			0.950			0.510					
Satd. Flow (perm)	1343	0	1615	1814	1858	0	964	1890	0	0	1890	1607
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		708			334			1322			522	
Travel Time (s)		19.3			9.1			36.1			14.2	
Peak Hour Factor	0.79	0.79	0.79	0.65	0.65	0.65	0.96	0.96	0.96	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	375	0	82	25	63	14	50	300	0	0	344	455
Shared Lane Traffic (%)												
Lane Group Flow (vph)	375	0	82	25	77	0	50	300	0	0	344	455
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		30.8	30.8			30.8	30.8
Minimum Split (s)	11.9		11.9	11.9	11.9		35.7	35.7			35.7	35.7
Total Split (s)	34.3		34.3	34.3	34.3		35.7	35.7			35.7	35.7
Total Split (%)	49.0%		49.0%	49.0%	49.0%		51.0%	51.0%			51.0%	51.0%
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)	1.4		1.4	1.4	1.4		1.4	1.4			1.4	1.4
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.9		4.9	4.9	4.9		4.9	4.9			4.9	4.9
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None	None		Max	Max			Max	Max
Act Effct Green (s)	21.5		21.5	21.5	21.5		31.1	31.1			31.1	31.1
Actuated g/C Ratio	0.34		0.34	0.34	0.34		0.50	0.50			0.50	0.50
v/c Ratio	0.81		0.15	0.04	0.12		0.10	0.32			0.37	0.57
Control Delay	33.1		14.0	12.7	13.6		11.2	12.0			12.5	16.2
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	33.1		14.0	12.7	13.6		11.2	12.0			12.5	16.2
LOS	C		B	B	B		B	B			B	B
Approach Delay		29.7			13.4			11.9			14.6	
Approach LOS		C			B			B			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	125		21	6	19		10	64			76	114
Queue Length 95th (ft)	177		40	14	30		32	138			157	239
Internal Link Dist (ft)		628			254			1242			442	
Turn Bay Length (ft)	100			55			170					115
Base Capacity (vph)	638		767	861	882		479	940			940	799
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	0.59		0.11	0.03	0.09		0.10	0.32			0.37	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.5			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Central Avenue (CR 669) & Durham Avenue



Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	304	34	57	434	3	40	0	54	3	0	0
Future Vol, veh/h	0	304	34	57	434	3	40	0	54	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	79	65	65	65	92	65	92	65	92	92	92
Heavy Vehicles, %	2	0	0	0	0	2	0	2	0	2	2	2
Mvmt Flow	0	385	52	88	668	3	62	0	83	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	671	0	0	437	0	0	1257	1258	411	1299	1283	670
Stage 1	-	-	-	-	-	-	411	411	-	846	846	-
Stage 2	-	-	-	-	-	-	846	847	-	453	437	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	919	-	-	1134	-	-	149	171	645	138	165	457
Stage 1	-	-	-	-	-	-	622	595	-	357	378	-
Stage 2	-	-	-	-	-	-	360	378	-	586	579	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	919	-	-	1134	-	-	135	150	645	109	145	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	150	-	109	145	-
Stage 1	-	-	-	-	-	-	622	595	-	357	331	-
Stage 2	-	-	-	-	-	-	315	331	-	511	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	38.3	39
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	919	-	-	1134	-	-	109
HCM Lane V/C Ratio	0.585	-	-	-	0.077	-	-	0.03
HCM Control Delay (s)	38.3	0	-	-	8.4	0	-	39
HCM Lane LOS	E	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	3.4	0	-	-	0.3	-	-	0.1

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	63	71	670	491	34
Future Vol, veh/h	54	63	71	670	491	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	80	0	140	-	-	80
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	-3	2	-
Peak Hour Factor	65	65	92	92	92	92
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	83	97	77	728	534	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1416	534	571	0	-	0
Stage 1	534	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	179	567	1012	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	567	1012	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	450	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.6	0.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1012	-	165	567	-	-
HCM Lane V/C Ratio	0.076	-	0.503	0.171	-	-
HCM Control Delay (s)	8.9	-	47.1	12.7	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.5	0.6	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	451	558	4	4	0
Future Vol, veh/h	2	451	558	4	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	2	-	4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	490	607	4	4	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	611	0	-	0	1103	609
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	4.12	-	-	-	7.22	6.62
Critical Hdwy Stg 1	-	-	-	-	6.22	-
Critical Hdwy Stg 2	-	-	-	-	6.22	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	968	-	-	-	183	463
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	968	-	-	-	182	463
Mov Cap-2 Maneuver	-	-	-	-	182	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	549	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	968	-	-	-	182
HCM Lane V/C Ratio	0.002	-	-	-	0.024
HCM Control Delay (s)	8.7	0	-	-	25.3
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.1

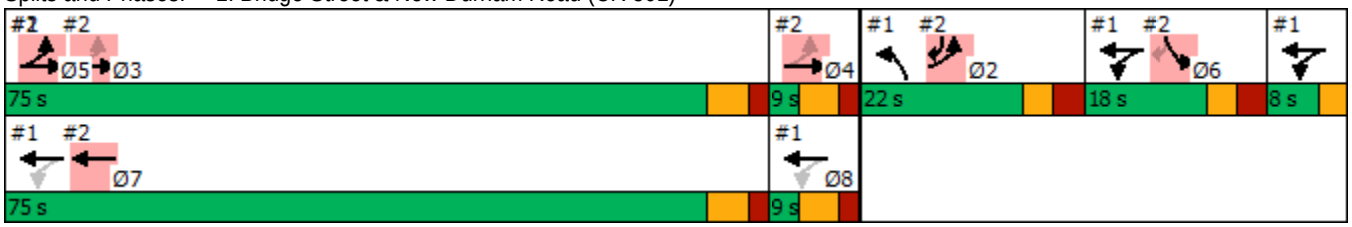
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	395	192	250	360	221	67					
Future Volume (vph)	395	192	250	360	221	67					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.956				0.969						
Flt Protected			0.950		0.963						
Satd. Flow (prot)	1893	0	1678	1828	1819	0					
Flt Permitted			0.248		0.963						
Satd. Flow (perm)	1893	0	438	1828	1819	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	28				9						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.90	0.90	0.78	0.96	0.81	0.81					
Heavy Vehicles (%)	8%	2%	5%	5%	2%	15%					
Adj. Flow (vph)	439	213	321	375	273	83					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	652	0	321	375	356	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	75.0				22.0		9.0	8.0	18.0	75.0	9.0
Total Split (%)	56.8%				16.7%		7%	6%	14%	57%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	69.0		103.0	106.0	16.0						
Actuated g/C Ratio	0.53		0.79	0.81	0.12						
v/c Ratio	0.65		0.58	0.25	1.55						
Control Delay	25.0		20.6	1.7	304.8						
Queue Delay	0.0		1.6	0.6	0.0						
Total Delay	25.0		22.2	2.3	304.8						
LOS	C		C	A	F						
Approach Delay	25.0			11.5	304.8						

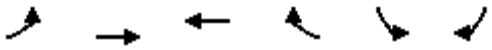
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			B	F						
Queue Length 50th (ft)	375		73	20	~426						
Queue Length 95th (ft)	509		88	58	#542						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1010		540	1465	230						
Starvation Cap Reductn	0		94	715	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.65		0.72	0.50	1.55						

Intersection Summary

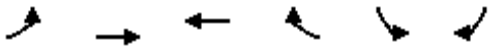
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131
Natural Cycle: 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 78.0 Intersection LOS: E
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	43	419	418	2	4	192				
Future Volume (vph)	43	419	418	2	4	192				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1599	1742	1909	0	1754	1509				
Flt Permitted	0.418				0.950					
Satd. Flow (perm)	704	1742	1909	0	1754	1509				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.84	0.84	0.96	0.96	0.92	0.92				
Heavy Vehicles (%)	8%	8%	5%	2%	0%	4%				
Adj. Flow (vph)	51	499	435	2	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	51	499	437	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			75.0		18.0	22.0	75.0	9.0	8.0	9.0
Total Split (%)			56.8%		13.6%	16.7%	57%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	86.0	69.0		11.0	33.0				
Actuated g/C Ratio	0.73	0.66	0.53		0.08	0.25				
v/c Ratio	0.08	0.44	0.43		0.03	0.39				
Control Delay	1.7	5.6	20.9		55.2	7.2				
Queue Delay	0.0	0.6	0.0		0.0	0.0				
Total Delay	1.7	6.3	20.9		55.2	7.2				
LOS	A	A	C		E	A				
Approach Delay		5.8	20.9		8.1					

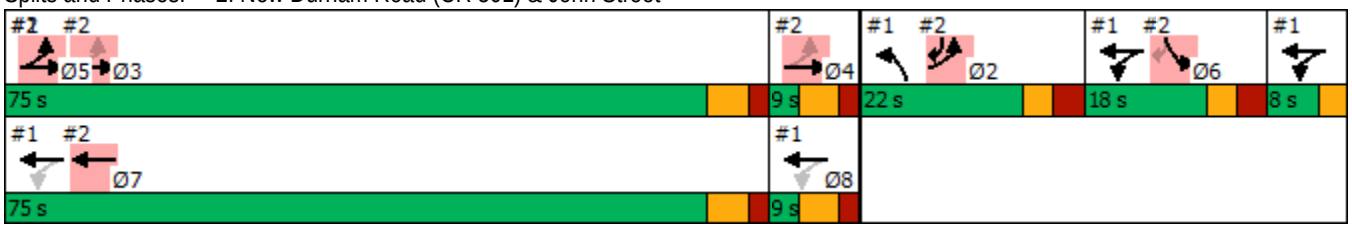


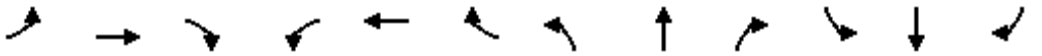
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	4	81	224		3	0				
Queue Length 95th (ft)	m5	m87	310		15	62				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	639	1143	1005		160	536				
Starvation Cap Reductn	0	317	0		0	0				
Spillback Cap Reductn	0	0	0		0	0				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.08	0.60	0.43		0.03	0.39				

Intersection Summary	
Area Type:	Other
Cycle Length: 132	
Actuated Cycle Length: 131	
Natural Cycle: 130	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.55	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: New Durham Road (CR 501) & John Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	415	70	14	82	11	18	197	476	346	244	19
Future Volume (vph)	328	415	70	14	82	11	18	197	476	346	244	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	13	11	11	11	11	11	11	11	11	11
Grade (%)		1%			0%			1%			-1%	
Storage Length (ft)	125		0	100		0	190		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			85			20			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.982			0.894			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1911	0	1163	1670	0	1736	1584	0	1702	1772	0
Flt Permitted	0.688			0.190			0.502			0.361		
Satd. Flow (perm)	1301	1911	0	233	1670	0	917	1584	0	647	1772	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					7			83			7	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		1322			341			709			263	
Travel Time (s)		36.1			9.3			19.3			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.88	0.88	0.88	0.65	0.89	0.65
Heavy Vehicles (%)	0%	0%	0%	50%	3%	44%	0%	6%	2%	3%	3%	0%
Adj. Flow (vph)	357	451	76	16	94	13	20	224	541	532	274	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	357	527	0	16	107	0	20	765	0	532	303	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		8			8		4	4 6			6	
Permitted Phases	8			8			4 6			6		
Detector Phase	8	8		8	8		4	4 6		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0			5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		20.0			24.0	24.0	
Total Split (s)	27.0	27.0		27.0	27.0		20.0			43.0	43.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		22.2%			47.8%	47.8%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0			3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		0.0			3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0			6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None			C-Max	C-Max	
Act Effct Green (s)	21.0	21.0		21.0	21.0		57.0	60.0		37.0	37.0	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.63	0.67		0.41	0.41	
v/c Ratio	1.18	1.18		0.30	0.27		0.03	0.71		2.01	0.41	
Control Delay	142.6	136.8		44.8	28.6		5.2	12.7		488.9	25.2	
Queue Delay	6.6	0.0		0.0	1.2		0.0	52.7		0.0	2.8	
Total Delay	149.1	136.8		44.8	29.7		5.2	65.4		488.9	28.0	
LOS	F	F		D	C		A	E		F	C	
Approach Delay		141.8			31.7			63.9			321.6	

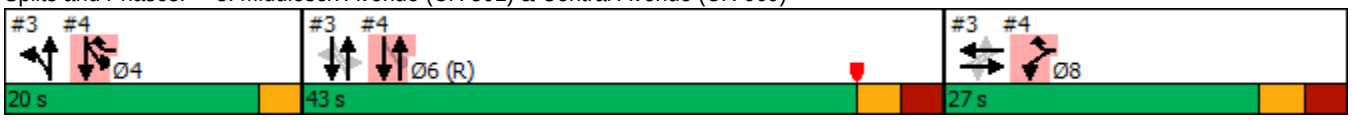
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			E			F	
Queue Length 50th (ft)	~245	~363		8	47		3	214		~481	141	
Queue Length 95th (ft)	#415	#557		28	88		10	331		#449	223	
Internal Link Dist (ft)		1242			261			629			183	
Turn Bay Length (ft)	125			100			190					
Base Capacity (vph)	303	445		54	395		735	1083		265	732	
Starvation Cap Reductn	0	0		0	0		0	0		0	314	
Spillback Cap Reductn	114	0		0	149		0	523		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.89	1.18		0.30	0.43		0.03	1.37		2.01	0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.01			
Intersection Signal Delay: 170.5		Intersection LOS: F	
Intersection Capacity Utilization 98.2%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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: 3: Middlesex Avenue (CR 501) & Central Avenue (CR 669)



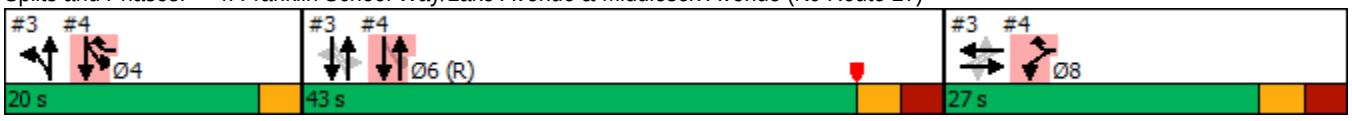
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	218	0	88	0	419	117	163	391	0
Future Volume (vph)	0	0	0	218	0	88	0	419	117	163	391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	16	14	15	15
Grade (%)		0%			-1%			1%			-1%	
Storage Length (ft)	0		0	0		0	0		0	185		0
Storage Lanes	0		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.972				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1552	0	1509	0	1606	0	1879	2039	0
Flt Permitted				0.950						0.193		
Satd. Flow (perm)	0	0	0	1552	0	1509	0	1606	0	382	2039	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						99		18				
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		161			360			263			1166	
Travel Time (s)		4.4			9.8			6.0			26.5	
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.88	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	13%	2%	4%	2%	6%	28%	3%	3%	0%
Adj. Flow (vph)	0	0	0	245	0	99	0	476	126	172	412	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	245	0	99	0	602	0	172	412	0
Turn Type				Prot		pt+ov		NA		pm+pt	NA	
Protected Phases				8		4 8		6		4	4 6	
Permitted Phases				8		4 8				4 6		
Detector Phase				8		4 8		6		4	4 6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0		
Minimum Split (s)				24.0				24.0		20.0		
Total Split (s)				27.0				43.0		20.0		
Total Split (%)				30.0%				47.8%		22.2%		
Yellow Time (s)				3.0				3.0		3.0		
All-Red Time (s)				3.0				3.0		0.0		
Lost Time Adjust (s)				0.0				0.0		0.0		
Total Lost Time (s)				6.0				6.0		3.0		
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None				C-Max		None		
Act Effct Green (s)				21.0		44.0		37.0		57.0	60.0	
Actuated g/C Ratio				0.23		0.49		0.41		0.63	0.67	
v/c Ratio				0.68		0.13		0.90		0.33	0.30	
Control Delay				42.1		3.2		42.0		6.7	4.3	
Queue Delay				0.5		0.0		50.4		0.0	0.6	
Total Delay				42.7		3.2		92.4		6.7	4.9	
LOS				D		A		F		A	A	
Approach Delay					31.3			92.4			5.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS					C			F			A	
Queue Length 50th (ft)				127		0		352		19	48	
Queue Length 95th (ft)				#208		24		m351		m39	m62	
Internal Link Dist (ft)		81			280			183			1086	
Turn Bay Length (ft)										185		
Base Capacity (vph)				362		788		670		524	1359	
Starvation Cap Reductn				0		0		266		0	0	
Spillback Cap Reductn				14		0		0		0	586	
Storage Cap Reductn				0		0		0		0	0	
Reduced v/c Ratio				0.70		0.13		1.49		0.33	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 38 (42%), Referenced to phase 6:NBSB, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.01
Intersection Signal Delay: 45.5 Intersection LOS: D
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15
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: 4: Franklin School Way/Lake Avenue & Middlesex Avenue (NJ Route 27)



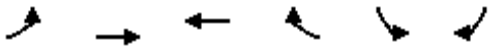
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	433	285	402	353	241	86					
Future Volume (vph)	433	285	402	353	241	86					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.946				0.965						
Flt Protected			0.950		0.964						
Satd. Flow (prot)	1939	0	1762	1863	1890	0					
Flt Permitted			0.192		0.964						
Satd. Flow (perm)	1939	0	356	1863	1890	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	42				11						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.91	0.91	0.94	0.94	0.92	0.92					
Heavy Vehicles (%)	4%	0%	0%	3%	1%	0%					
Adj. Flow (vph)	476	313	428	376	262	93					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	789	0	428	376	355	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	82.0				22.0		9.0	8.0	11.0	82.0	9.0
Total Split (%)	62.1%				16.7%		7%	6%	8%	62%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	76.0		104.0	107.0	16.0						
Actuated g/C Ratio	0.58		0.79	0.81	0.12						
v/c Ratio	0.70		0.95	0.25	1.49						
Control Delay	22.7		64.5	1.4	280.3						
Queue Delay	0.0		14.8	0.5	0.0						
Total Delay	22.7		79.3	2.0	280.3						
LOS	C		E	A	F						
Approach Delay	22.7			43.1	280.3						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			D	F						
Queue Length 50th (ft)	434		160	16	~413						
Queue Length 95th (ft)	585		#367	53	#612						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1134		450	1510	238						
Starvation Cap Reductn	0		30	739	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.70		1.02	0.49	1.49						

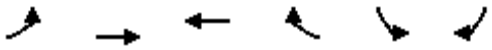
Intersection Summary

Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 132
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.49
Intersection Signal Delay: 78.1 Intersection LOS: E
Intersection Capacity Utilization 112.5% ICU Level of Service H
Analysis Period (min) 15
~ 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: 1: Bridge Street & New Durham Road (CR 501)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	56	463	531	9	3	224				
Future Volume (vph)	56	463	531	9	3	224				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.998			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1809	1945	0	1754	1553				
Flt Permitted	0.328				0.950					
Satd. Flow (perm)	596	1809	1945	0	1754	1553				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)			1			255				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.86	0.91	0.91	0.91	0.88	0.88				
Heavy Vehicles (%)	0%	4%	3%	0%	0%	1%				
Adj. Flow (vph)	65	509	584	10	3	255				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	65	509	594	0	3	255				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			82.0		11.0	22.0	82.0	9.0	8.0	9.0
Total Split (%)			62.1%		8.3%	16.7%	62%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	103.0	93.0	76.0		5.0	27.0				
Actuated g/C Ratio	0.78	0.70	0.58		0.04	0.20				
v/c Ratio	0.11	0.40	0.53		0.05	0.49				
Control Delay	1.2	4.2	19.2		62.7	8.6				
Queue Delay	0.0	0.9	0.1		0.0	1.5				
Total Delay	1.2	5.1	19.4		62.7	10.1				
LOS	A	A	B		E	B				
Approach Delay		4.7	19.4		10.7					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	B		B					
Queue Length 50th (ft)	4	81	296		3	0				
Queue Length 95th (ft)	m6	m92	399		14	66				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	619	1274	1120		66	520				
Starvation Cap Reductn	0	473	0		0	0				
Spillback Cap Reductn	0	0	73		0	127				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.11	0.64	0.57		0.05	0.65				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 132			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.49			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street

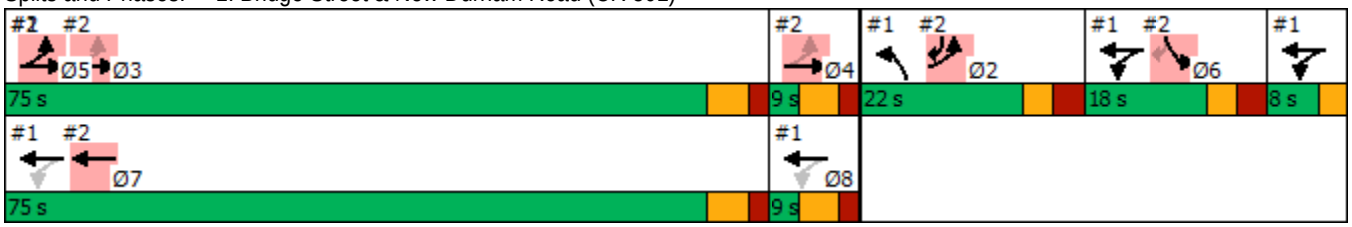
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	437	220	349	311	199	112					
Future Volume (vph)	437	220	349	311	199	112					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900					
Lane Width (ft)	16	16	11	12	14	14					
Grade (%)	5%			-2%	-2%						
Storage Length (ft)		0	150		0	0					
Storage Lanes		0	1		1	0					
Taper Length (ft)			25		25						
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00					
Frt	0.955				0.951						
Flt Protected			0.950		0.969						
Satd. Flow (prot)	1985	0	1762	1900	1874	0					
Flt Permitted			0.160		0.969						
Satd. Flow (perm)	1985	0	297	1900	1874	0					
Right Turn on Red		Yes				Yes					
Satd. Flow (RTOR)	29				17						
Link Speed (mph)	25			25	25						
Link Distance (ft)	361			257	437						
Travel Time (s)	9.8			7.0	11.9						
Peak Hour Factor	0.85	0.85	0.89	0.89	0.89	0.89					
Heavy Vehicles (%)	1%	1%	0%	1%	1%	0%					
Adj. Flow (vph)	514	259	392	349	224	126					
Shared Lane Traffic (%)											
Lane Group Flow (vph)	773	0	392	349	350	0					
Turn Type	NA		pm+pt	NA	Prot						
Protected Phases	3		5 6	5 6 7 8	2		4	5	6	7	8
Permitted Phases			5 6 7 8								
Detector Phase	3		5 6	5 6 7 8	2						
Switch Phase											
Minimum Initial (s)	70.0				7.0		3.0	5.0	7.0	70.0	3.0
Minimum Split (s)	76.0				13.0		9.0	8.0	13.0	76.0	9.0
Total Split (s)	75.0				22.0		9.0	8.0	18.0	75.0	9.0
Total Split (%)	56.8%				16.7%		7%	6%	14%	57%	7%
Yellow Time (s)	4.0				3.0		4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0				3.0		2.0	0.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0				0.0						
Total Lost Time (s)	6.0				6.0						
Lead/Lag	Lead				Lead		Lag		Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes		Yes		Yes	Yes	Yes
Recall Mode	Max				None		None	Max	None	Max	None
Act Effct Green (s)	69.0		103.5	106.5	16.0						
Actuated g/C Ratio	0.52		0.79	0.81	0.12						
v/c Ratio	0.73		0.81	0.23	1.44						
Control Delay	28.4		53.7	1.3	259.0						
Queue Delay	0.0		21.0	0.5	0.0						
Total Delay	28.4		74.6	1.9	259.0						
LOS	C		E	A	F						
Approach Delay	28.4			40.4	259.0						

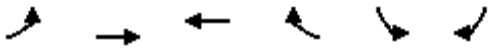
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø5	Ø6	Ø7	Ø8
Approach LOS	C			D	F						
Queue Length 50th (ft)	480		175	14	~396						
Queue Length 95th (ft)	579		#301	45	#586						
Internal Link Dist (ft)	281			177	357						
Turn Bay Length (ft)			150								
Base Capacity (vph)	1055		483	1537	243						
Starvation Cap Reductn	0		92	782	0						
Spillback Cap Reductn	0		0	0	0						
Storage Cap Reductn	0		0	0	0						
Reduced v/c Ratio	0.73		1.00	0.46	1.44						

Intersection Summary

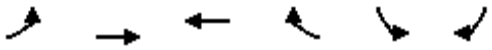
Area Type: Other
Cycle Length: 132
Actuated Cycle Length: 131.5
Natural Cycle: 140
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.44
Intersection Signal Delay: 76.4 Intersection LOS: E
Intersection Capacity Utilization 108.9% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, 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: 1: Bridge Street & New Durham Road (CR 501)





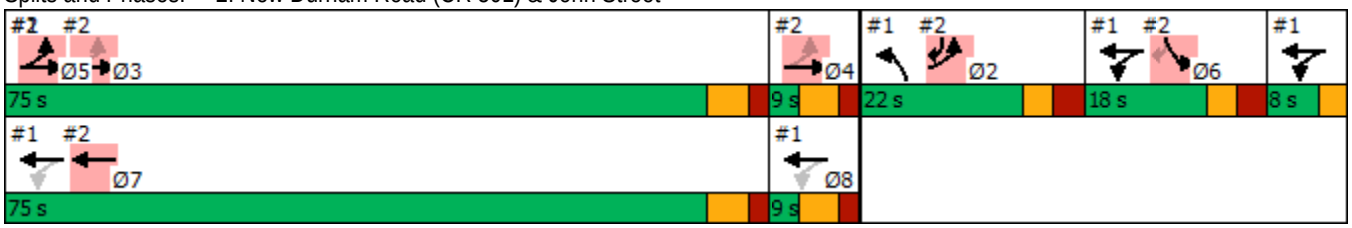
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Lane Configurations										
Traffic Volume (vph)	70	479	470	4	4	190				
Future Volume (vph)	70	479	470	4	4	190				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Width (ft)	11	12	14	14	11	11				
Grade (%)		2%	2%		-1%					
Storage Length (ft)	130			0	70	0				
Storage Lanes	1			0	1	1				
Taper Length (ft)	25				25					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt			0.999			0.850				
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1727	1862	1985	0	1754	1569				
Flt Permitted	0.345				0.950					
Satd. Flow (perm)	627	1862	1985	0	1754	1569				
Right Turn on Red				Yes		Yes				
Satd. Flow (RTOR)						209				
Link Speed (mph)		25	25		25					
Link Distance (ft)		257	895		248					
Travel Time (s)		7.0	24.4		6.8					
Peak Hour Factor	0.69	0.85	0.89	0.89	0.91	0.91				
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%				
Adj. Flow (vph)	101	564	528	4	4	209				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	101	564	532	0	4	209				
Turn Type	pm+pt	NA	NA		Prot	pm+ov				
Protected Phases	2 5	3 4 5	7		6	2	3	4	5	8
Permitted Phases	3 4 5					6				
Detector Phase	2 5	3 4 5	7		6	2				
Switch Phase										
Minimum Initial (s)			70.0		7.0	7.0	70.0	3.0	5.0	3.0
Minimum Split (s)			76.0		13.0	13.0	76.0	9.0	8.0	9.0
Total Split (s)			75.0		18.0	22.0	75.0	9.0	8.0	9.0
Total Split (%)			56.8%		13.6%	16.7%	57%	7%	6%	7%
Yellow Time (s)			4.0		3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)			2.0		3.0	3.0	2.0	2.0	0.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0				
Total Lost Time (s)			6.0		6.0	6.0				
Lead/Lag			Lead		Lag	Lead	Lead	Lag		Lag
Lead-Lag Optimize?			Yes		Yes	Yes	Yes	Yes		Yes
Recall Mode			Max		None	None	Max	None	Max	None
Act Effct Green (s)	96.0	86.0	69.0		11.5	33.5				
Actuated g/C Ratio	0.73	0.65	0.52		0.09	0.25				
v/c Ratio	0.17	0.46	0.51		0.03	0.38				
Control Delay	2.1	6.6	22.6		55.2	7.0				
Queue Delay	0.1	1.2	0.2		0.0	0.9				
Total Delay	2.2	7.7	22.7		55.2	7.9				
LOS	A	A	C		E	A				
Approach Delay		6.9	22.7		8.8					



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø4	Ø5	Ø8
Approach LOS		A	C		A					
Queue Length 50th (ft)	8	106	288		3	0				
Queue Length 95th (ft)	m10	m113	383		15	62				
Internal Link Dist (ft)		177	815		168					
Turn Bay Length (ft)	130				70					
Base Capacity (vph)	608	1217	1041		160	555				
Starvation Cap Reductn	134	415	0		0	0				
Spillback Cap Reductn	0	0	86		0	157				
Storage Cap Reductn	0	0	0		0	0				
Reduced v/c Ratio	0.21	0.70	0.56		0.03	0.53				

Intersection Summary			
Area Type:	Other		
Cycle Length: 132			
Actuated Cycle Length: 131.5			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.44			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: New Durham Road (CR 501) & John Street



G | Level of Service Summary Tables

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Maven Group
700 Middlesex Avenue
Borough of Metuchen
Middlesex County, New Jersey
Table 1: Table of Data

ATDE Project No. ANJ20055

Intersection	Lane Group	No Build AM Delay	LOS	No Build PM Delay	LOS	No Build SAT Delay	LOS	Build AM Delay	LOS	Build PM Delay	LOS	Build SAT Delay	LOS	Mit.Bd AM Delay	LOS	Mit.Bd PM Delay	LOS	Mit.Bd SAT Delay	LOS
Bridge St	EB: TR	23.0	C	27.8	C	27.4	C	24.1	C	28.7	C	27.3	C	25.0	C	22.7	C	28.4	C
@New Durham	WB: L	13.3	B	69.1	E	58.9	E	20.4	C	103.6	F	66.4	E	22.2	C	79.3	E	74.6	E
Rd (CR-501)	T	2.3	A	1.9	A	1.8	A	2.2	A	1.9	A	1.8	A	2.3	A	2.0	A	1.9	A
	NB: LT	314.0	F	297.2	F	281.6	F	346.9	F	319.5	F	295.8	F	304.8	F	280.3	F	259.0	F
	Overall	78.3	E	81.5	F	76.4	E	86.0	F	93.0	F	81.2	F	78.0	E	78.1	E	76.4	E
New Durham	EB: L	1.6	A	1.7	A	2.2	A	1.8	A	1.8	A	2.3	A	1.7	A	1.2	A	2.2	A
Rd (CR-501)	T	5.5	A	5.9	A	7.0	A	6.1	A	6.4	A	7.5	A	6.3	A	5.1	A	7.7	A
@John St	WB: TR	19.3	B	22.3	C	21.4	C	20.2	C	24.4	C	22.0	C	20.9	C	19.4	B	22.7	C
	SB: L	55.2	E	55.0	E	55.2	E	55.2	E	55.0	E	55.2	E	55.2	E	62.7	E	55.2	E
	R	7.5	A	8.3	A	7.9	A	7.4	A	9.5	A	8.0	A	7.2	A	10.1	B	7.9	A
	Overall	10.7	B	12.8	B	12.2	B	11.4	B	14.4	B	12.8	B	11.7	B	11.9	B	13.2	B
Middlesex	EB: L	123.3	F	31.7	C	31.6	C	128.3	F	32.4	C	31.8	C	149.1	F				
Ave (CR-501)	TR	98.4	F	31.9	C	31.9	C	115.4	F	33.3	C	32.6	C	136.8	F				
@Central Ave	WB: L	44.1	D	47.2	D	49.0	D	44.1	D	54.7	D	51.7	D	44.8	D				
(CR-669)	TR	27.1	C	46.6	D	45.1	D	28.7	C	49.4	D	45.9	D	29.7	C				
	NB: L	5.6	A	5.7	A	5.9	A	5.6	A	5.8	A	6.0	A	5.2	A				
	TR	65.7	E	27.1	C	14.0	B	66.1	E	28.9	C	13.3	B	65.4	E				
	SB: L	506.0	F	56.9	E	39.9	D	531.1	F	58.2	E	39.5	D	488.9	F				
	TR	27.5	C	42.3	D	38.5	D	28.8	C	43.7	D	38.6	D	28.0	C				
	Overall	166.1	F	37.6	D	30.8	C	172.2	F	39.5	D	31.0	C	170.5	F				
Franklin	WB: L	40.0	D	52.3	D	41.4	D	40.0	D	52.3	D	40.9	D	42.7	D				
School Way,	R	3.0	A	2.9	A	2.7	A	3.0	A	2.9	A	2.7	A	3.2	A				
Lake Ave	NB: TR	94.7	F	66.9	E	44.6	D	94.3	F	70.2	E	41.4	D	92.4	F				
@Middlesex	SB: L	6.7	A	9.6	A	11.4	B	7.5	A	10.2	B	10.7	B	6.7	A				
Ave (NJ-27)	TR	5.1	A	4.1	A	4.2	A	5.3	A	4.3	A	4.3	A	4.9	A				
	Overall	46.2	D	37.6	D	25.3	C	46.0	D	38.8	D	23.7	C	45.5	D				
Middlesex	EB: L	27.3	C	23.7	C	21.3	C	27.3	C	23.7	C	21.3	C						
Ave (NJ-27)	TR	140.8	F	340.0	F	369.7	F	140.8	F	340.0	F	369.7	F						
@Main St	WB: L	27.5	C	30.4	C	27.9	C	27.5	C	30.4	C	27.9	C						
(CR-531)	TR	90.4	F	180.8	F	115.5	F	90.4	F	180.8	F	115.5	F						
	NB: L	17.0	B	17.1	B	17.1	B	17.0	B	17.2	B	17.0	B						
	TR	29.9	C	27.8	C	28.0	C	30.2	C	27.8	C	27.8	C						
	SB: L	10.1	B	10.3	B	9.6	A	10.2	B	10.3	B	9.6	A						
	TR	17.7	B	18.0	B	17.0	B	18.0	B	18.1	B	17.0	B						
	Overall	71.1	E	155.5	F	161.8	F	70.4	E	154.6	F	162.4	F						
Central Ave	EB: L	33.5	C	33.2	C	30.5	C	36.6	D	35.7	D	33.1	C						
(CR-669)	R	13.8	B	13.8	B	14.2	B	13.5	B	13.6	B	14.0	B						
@Durham Ave	WB: L	12.5	B	12.4	B	12.9	B	12.2	B	12.1	B	12.7	B						
	TR	14.2	B	14.2	B	14.0	B	13.7	B	13.8	B	13.6	B						
	NB: L	11.4	B	11.9	B	10.4	B	12.7	B	13.4	B	11.2	B						
	T	13.6	B	14.0	B	11.2	B	15.0	B	15.4	B	12.0	B						
	SB: T	12.9	B	13.5	B	11.7	B	14.2	B	14.8	B	12.5	B						
	R	15.3	B	17.0	B	14.5	B	17.5	B	18.9	B	16.2	B						
	Overall	17.8	B	18.1	B	16.5	B	19.7	B	19.8	B	18.0	B						
Site Dwy	EB: LTR	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A						
@Durham Ave	WB: LTR	8.5	A	8.5	A	8.2	A	8.7	A	8.6	A	8.4	A						
	NB: LTR	21.6	C	12.5	B	23.9	C	38.3	E	48.7	E	38.3	E						
	SB: LTR	24.2	C	30.9	D	27.5	D	35.6	E	40.7	E	39.0	E						
	Overall	2.1	A	1.2	A	1.3	A	6.8	A	7.4	A	4.8	A						
Middlesex	EB: L							39.6	E	47.1	E	47.1	E						
Ave (CR-501)	LR	20.1	C	24.8	C	25.3	D												
@South Site	R							12.2	B	13.2	B	12.7	B						
Dwy	NB: L							8.9	A	9.1	A	8.9	A						
	LT	8.5	A	8.8	A	8.6	A												
	Overall	0.3	A	0.7	A	1.2	A	2.6	A	2.8	A	3.7	A						
New Durham	EB: LT	8.5	A	8.8	A	8.6	A	8.6	A	9.0	A	8.7	A						
Rd (CR-501)	SB: LR	17.9	C	19.4	C	20.1	C	19.7	C	21.4	C	25.3	D						
@Oliver St	Overall	0.2	A	0.3	A	0.1	A	0.2	A	0.4	A	0.1	A						

H | Traffic Signal Warrant Analysis

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Major Street: Middlesex Avenue (CR 501) [1 Lane]
Minor Street: Site Driveway [2 Lanes]
Borough of Metuchen
Middlesex County, New Jersey
ATDE Project No. ANJ20055 **May 4, 2022**

Table 1
TRAFFIC SIGNAL WARRANT ANALYSIS
(Major Street speed less than or equal to 40 mph)

Start Time	Major Street			Minor	Warrant 1 - Eight Hour			Warrant 2	Warrant 3
	NB	SB	TOTAL	EB	Condition A*	Condition B*	A & B (80%)*	Four Hour**	Peak Hour***
12:00 AM	51	41	92	0					
1:00 AM	31	28	59	0					
2:00 AM	16	15	31	0					
3:00 AM	48	12	60	0					
4:00 AM	59	29	88	0					
5:00 AM	147	160	307	0					
6:00 AM	385	338	723	0					
7:00 AM	698	472	1170	0					
8:00 AM	**742**	**506**	**1248**	**118**		**X**		**X**	
9:00 AM	601	420	1021	0					
10:00 AM	588	449	1037	0					
11:00 AM	575	451	1026	0					
12:00 PM	667	495	1162	0					
1:00 PM	658	511	1169	0					
2:00 PM	656	576	1232	0					
3:00 PM	760	573	1333	0					
4:00 PM	725	579	1304	0					
5:00 PM	**789**	**581**	**1370**	**131**		**X**		**X**	
6:00 PM	651	516	1167	0					
7:00 PM	526	416	942	0					
8:00 PM	307	293	600	0					
9:00 PM	188	205	393	0					
10:00 PM	138	116	254	0					
11:00 PM	109	80	189	0					
Number of Hours Conditions are Met					**0**	**2**	**0**	**2**	**0**
Is Warrant Met?					**NO**	**NO**	**NO**	**NO**	**NO**

* MUTCD Table 4C-1 for 1 Major Street lane on both approaches and 2 Minor Street lanes on 1 approach
** MUTCD Figure 4C-2 for 1 Major Street Lane on both approaches and 2 Minor Street Lanes on 1 approach
*** MUTCD Figure 4C-4 for 1 Major Street Lane on both approaches and 2 Minor Street Lanes on 1 approach

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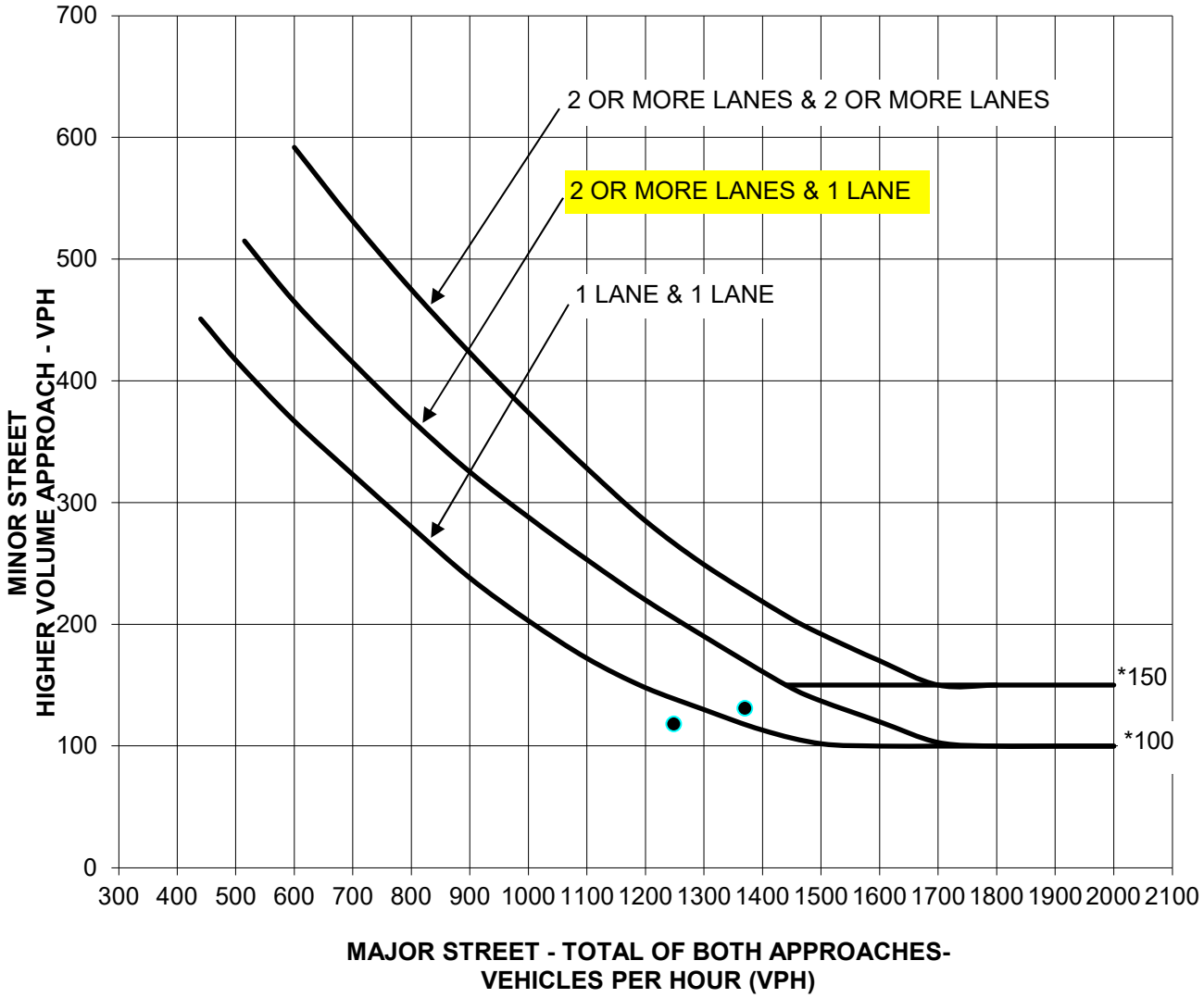
MUTCD Figure 4C-3. Warrant 3, Peak Hour Vehicular Volume



***NOTE: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.**