

A. INTRODUCTION

This transportation chapter presents the findings of traffic, parking, transit, and pedestrian conditions for the proposed enlargement of the Staten Island Mall (the Mall). As described in Chapter 1, “Projection Description,” the proposed project would result in a 426,576-gross-square-foot (gsf) enlargement of the Mall, a new structured parking facility, and landscaping improvements to the project site (Staten Island Block 2400, Lots 7, 118, 180, 210, 220, and 500). Overall, the proposed project would result in a net reduction of 367 accessory parking spaces.¹ The project site is shown in **Figure 1-2** in Chapter 1, “Project Description,” and is bounded by Richmond Avenue on the west, Richmond Hill Road on the north, Marsh Avenue on the east, and Platinum Avenue on the south.

As shown in **Figure 1-3** in Chapter 1, “Project Description,” in addition to the project site, the Mall also includes the Sears zoning lot (tax lot 375), which consists of 187,771 gsf of retail space with 1,018 accessory parking spaces. For the purposes of the transportation analysis, tax lot 300, which is a ~~small~~ convenience center at the southeast corner of the Mall, consisting of 80,000 gsf of retail space with 388 accessory parking spaces was added. The project site currently consists of 1,228,814 gsf of retail space with 5,844 accessory parking spaces, and in total, the transportation analysis assumes 1,496,585 gsf of retail space with 7,314 accessory parking spaces.²

As explained in greater detail below, counts of vehicles entering and exiting the Mall as well as vehicle occupancy surveys were conducted for this analysis. Although all proposed development would be on the project site, it was not possible to distinguish between trips to the project site and trips to other parts of the Mall. Therefore, the number of vehicle trips counted included trips to and from the entire Mall (including the project site, Sears, and the convenience center parcel). For trip generation purposes, this analysis divides the proposed enlargement into three categories: 313,583 gsf of new destination retail,³ a 50,000 gsf grocery store, and a 54,488 gsf cinema (2,500 seats). The number of project-generated destination retail trips was assumed to be proportional to the increase in square footage of retail space, and the project-generated

¹ To accommodate the development of the proposed project, approximately 1,780 existing surface parking spaces on the project site would be displaced. These spaces would be replaced by a new structured garage with a capacity of 1,413 parking spaces. Thus, the proposed project would result in a net decrease of 367 parking spaces, as the overall number of parking spaces provided on the project site would decrease from 5,844 to 5,477.

² Approximately 64 parking spaces straddle the Mall and Sears zoning lots, and are not included in the Mall or the Sears parking space figure, but are included in the total number of spaces.

³ The destination retail category includes 80,061 gsf of non-department store retail, 41,208 gsf of department store retail, 33,665 gsf of restaurant uses, a 10,831 gsf food court use, the 75,000 gsf Macy’s enlargement, 7,946 gsf from conversion of existing loading docks to retail, and 73,377 gsf of common/service/receiving areas. An approximately 8,505 gsf portion of existing destination retail uses within the project site would be converted to become part of the new 50,000-gsf grocery store, and is therefore deducted from the proposed destination retail total for the purposes of trip generation.

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supermarket and movie theater trips were generated using the methodology outlined in the 2014 City Environmental Quality Review (CEQR) Technical Manual.

As noted in Chapter 1, “Project Description,” this transportation analysis evaluates the 2019 Full-Build Scenario, in which case the 75,000-gsf Macy’s enlargement and a portion of the structured parking garage would not be complete until 2019. Compared to the 2017 full-build condition, the 2019 Full-Build scenario is more conservative for the purposes of the transportation analysis, as additional background growth between 2017 and 2019 could contribute to additional potential significant adverse impacts not identified when analyzing a 2017 full-build condition. If significant adverse transportation impacts are identified, the Applicants would commit to implementing any identified mitigation measures upon opening of the majority of the proposed enlargement (i.e., by 2017).

PRINCIPAL CONCLUSIONS

TRAFFIC

Weekday midday and PM and Saturday midday and PM traffic conditions were evaluated at a total of 38 intersections which center around major arterials that serve the Mall, including Richmond Avenue, Richmond Hill Road, Forest Hill Road, and arterials farther away from the site that collect local traffic. These 38 intersections, where project-generated trips are expected to be most concentrated, were analyzed for the reasonable worst-case scenario of the November to December shopping period post-Thanksgiving.

The traffic impact analysis indicates that there would be a potential for significant adverse impacts at 14 intersections during the weekday midday peak hour, at 26 intersections during the weekday PM peak hour, and at 24 intersections during both the Saturday midday and PM peak hours.

TRANSIT

The proposed action would not result in any significant adverse transit impacts with respect to subways and buses.

Subway

As there is no rail station within the vicinity of the Mall, it is expected that subway or other rail trips would be very low. Therefore the proposed project is not expected to result in significant adverse subway impacts and a detailed subway analysis is not included in this EIS.

Bus

The Mall is currently served by 11 NYC Transit bus routes, with several of these routes terminating in the vicinity of the Mall. With a relatively low level of new bus demand that would be concentrated in off-peak periods and distributed over a total of at least four bus routes, significant adverse bus impacts are not expected due to the proposed project. Therefore, a further detailed bus analysis is not included in this EIS.

PEDESTRIANS

The low level of anticipated project-generated pedestrian trips to and from the project site is not expected to be high enough to create any significant adverse impacts to sidewalks, crosswalks, and corner reservoir areas in and around the Mall. A detailed pedestrian analysis is therefore not included in this EIS.

PEDESTRIAN AND VEHICULAR SAFETY EVALUATION

As shown in Section H G, “Pedestrian and Vehicular Safety Evaluation,” two intersections in the study area—Signs Road at Richmond Avenue and Forest Avenue at Richmond Avenue-Morningstar Road—experienced five or more pedestrian and/or bicyclist injury crashes in one or more years from 2010-2012, and ~~is~~ are each therefore at the threshold of a high accident location as per the 2014 ~~City Environmental Quality Review (CEQR) Technical Manual~~. These intersections are not immediately adjacent to the Mall where project-generated pedestrian trips would be most concentrated. Additionally, crashes involving pedestrians often involve conflicts with turning vehicles. It is therefore important to note that, out of 334 and 436 project-generated vehicle trips per hour at the intersection of Signs Road at Richmond Avenue, only 31 and 40 vehicles per hour (vph) are turning movements during the weekday PM and Saturday midday peak hour, respectively, as shown in **Figures 10-11b and 10-12b**. In addition, none of the 53 and 70 project-generated vehicle trips per hour at the intersection of Forest Avenue at Richmond Avenue-Morningstar Road during the weekday PM and Saturday midday peak hour, respectively, are turning movements. Therefore, given the low project-generated traffic passing through these already-signalized intersections, significant impacts on pedestrian/bicycle safety are not anticipated. However, pedestrian and bicyclist safety could potentially be improved at the intersection of Signs Road at Richmond Avenue by striping high visibility crosswalks ~~and installing reminder signs for turning vehicles to yield to pedestrians~~.

PARKING

Even with the proposed net reduction of 367 parking spaces and new project-generated demand, the analysis showed that ~~75~~ 79 percent and 90 percent of all parking spaces on the project site would be utilized during the weekday and Saturday holiday parking peaks, respectively. Because there would be enough accessory parking spaces to accommodate the new project demand, there would be no expected significant adverse impacts to on-street or public off-street parking facilities near the Mall. A detailed on-street and off-street parking analysis is therefore not included in this EIS.

B. PRELIMINARY ANALYSIS METHODOLOGY

The 2014 CEQR Technical Manual describes a two-level screening procedure for the preparation of a “preliminary analysis” to determine if additional, more detailed operational analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the numbers of person and vehicle trips attributable to the proposed project. According to the 2014 CEQR Technical Manual, if the proposed project is expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are to be performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the proposed project would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

C. LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the number of person and vehicle trips by mode expected to be generated by the proposed project during weekday midday and PM and Saturday midday and PM peak hours. These estimates were then compared to the 2014 CEQR Technical Manual analysis thresholds to determine if a Level 2 screening and/or quantified operational analyses may be warranted. The travel demand assumptions used for the assessment are discussed below and a detailed travel demand forecast are discussed below.

TRANSPORTATION PLANNING FACTORS

Table 10-1 shows the transportation planning factors used for the travel demand forecast generated by the proposed project in the weekday midday and PM peak hours, as well as Saturday midday and PM peak hours. These include trip generation rates, temporal and directional distributions, mode choice factors, and vehicle occupancy rates for the supermarket and movie theater land uses. In order to determine the number of retail trips, counts of vehicles entering and exiting the Mall as well as vehicle occupancy surveys were conducted on two weekdays and two Saturdays in late November and early December of 2012. Although all proposed development would be on the project site, it was not possible to distinguish between trips to the project site and trips to other parts of the Mall. Therefore, the number of vehicle trips counted included trips to and from the entire Mall. The number of project-generated trips was assumed to be proportional to the increase in square footage of retail space. Since the proposed project would result in a 20.9 percent increase in destination retail space (not including the cinema and grocery store), the number of retail trips to and from the Mall is expected to increase by 20.9 percent as well. The number of new project-generated retail trips is shown in **Table 10-2**.

Movie theater trip generation rates of 3.26 weekday person trips and 6.25 Saturday person trips per seat and temporal distributions of 3.0 percent, 8.0 percent, and 5.0 percent for the weekday midday and PM and Saturday midday peak hours, respectively, were taken from the 2014 CEQR Technical Manual, while the Saturday PM temporal distribution of 10.4 percent was derived from the parking utilization in the *Hylan Plaza EAS (1999)*. The *Hylan Plaza EAS* was also used to obtain directional splits, vehicle occupancy, and truck trip generation rates. However, the directional split for the weekday midday peak hour came from the *ITE Trip Generation Handbook 8th Edition* Land Use 820 (shopping center) since there is no midday directional split data available for a movie theater. The truck temporal distribution was taken from the 2014 CEQR Technical Manual for retail use.

Supermarket trip generation rates of 175 weekday person trips and 231 Saturday person trips per 1,000 square feet and temporal distributions of 6.0 percent, 10.0 percent, 9.0 percent, for the weekday midday and PM and Saturday midday peak hours, respectively, were taken from the 2014 CEQR Technical Manual, while the Saturday PM temporal distribution of 9.0 percent was conservatively assumed to be the same as the Saturday midday temporal distribution. The directional split for weekday PM and Saturday midday and PM were taken from the *ITE Trip Generation Handbook 8th Edition* land use 850 (supermarket) while the weekday midday directional split, vehicle occupancy, and all truck data was taken from the *Admirals Row EAS*.

The modal splits of 90 percent auto, 6 percent bus, and 4 percent walk only for all land uses were based on the *Hylan Plaza EAS*.

**Table 10-1
Preliminary Transportation Demand Assumptions**

| Land Use: | <u>Movie Theater</u> | | <u>Supermarket</u> | |
|------------------------------------|-----------------------------|-------|---------------------------|-------|
| Size/Units: | 2,500 seats | | 50,000 sf | |
| Trip Generation: | (1) | | (1) | |
| Weekday | 3.26 | | 175 | |
| Saturday | 6.25 | | 231 | |
| | per seat | | per 1,000 gsf | |
| Temporal Distribution: | (1,2) | | (1) | |
| MD | 3.0% | | 6.0% | |
| PM | 8.0% | | 10.0% | |
| SatMD | 5.0% | | 9.0% | |
| SatPM | 10.4% | | 9.0% | |
| Modal Splits: | (2) | | (2) | |
| | MD/PM/Sat | | MD/PM/Sat | |
| Auto | 90.0% | | 90.0% | |
| Taxi | 0.0% | | 0.0% | |
| Rail | 0.0% | | 0.0% | |
| Bus | 6.0% | | 6.0% | |
| Walk/Bike/Other | 4.0% | | 4.0% | |
| | <hr/> <hr/> 100.0% | | <hr/> <hr/> 100.0% | |
| In/Out Splits: | (2,3) | | (5,6) | |
| | In | Out | In | Out |
| MD | 50.0% | 50.0% | 50.0% | 50.0% |
| PM | 54.0% | 46.0% | 51.0% | 49.0% |
| Sat MD | 62.0% | 38.0% | 51.0% | 49.0% |
| Sat PM | 53.0% | 47.0% | 51.0% | 49.0% |
| Vehicle Occupancy: | (2) | | (6) | |
| Weekday | 2.4 | | 2 | |
| Saturday | 2.7 | | 2 | |
| Truck Trip Generation | (2) | | (6) | |
| Weekday | 0.14 | | 1.2 | |
| Saturday | 0.007 | | 0.24 | |
| | per seat | | per 1,000 sf | |
| Truck Temporal Distribution | (4) | | (6) | |
| MD | 11.0% | | 6.0% | |
| PM | 2.0% | | 7.0% | |
| Sat MD | 11.0% | | 5.6% | |
| Sat PM | 11.0% | | 5.6% | |
| | In | Out | In | Out |
| MD/PM/Sat | 50.0% | 50.0% | 50.0% | 50.0% |

Notes :

- (1) 2014 City Environmental Quality Review (CEQR) Technical Manual.
- (2) Hylan Plaza Shopping Center Expansion EAS; Movie Theater Temporal Distribution based on Hylan Plaza parking accumulation
- (3) Midday In/Out Splits based on ITE Trip Generation Land Use 820 (Shopping Center) 8th Edition
- (4) 2014 CEQR Technical Manual for Destination Retail
- (5) Based on ITE Trip Generation Land Use 850 (Supermarket) 8th Edition
- (6) All truck information, vehicle occupancies, and MD In/Out Splits based on *Admirals Row EIS*

TABLE 10-2
Destination Retail Component Vehicle Trip Increment

| Land Use: | | Existing | | Future Expansion | |
|------------------------|------------------------------|-----------------|------|-------------------------|-----|
| Size/Units: | | 1,496,585 | sf | 313,583 | sf |
| Vehicle Trips : | | In | Out | In | Out |
| MD | Auto | 2057 | 2134 | 431 | 447 |
| | Dropoff/Taxi | 0 | 0 | 0 | 0 |
| | Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 |
| | Truck | 95 | 188 | 20 | 39 |
| | Total | 2152 | 2322 | 451 | 486 |
| PM | Auto | 2162 | 2134 | 453 | 447 |
| | Dropoff/Taxi | 0 | 0 | 0 | 0 |
| | Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 |
| | Truck | 122 | 110 | 26 | 23 |
| | Total | 2284 | 2244 | 479 | 470 |
| Sat MD | Auto | 3168 | 3015 | 664 | 632 |
| | Dropoff/Taxi | 0 | 0 | 0 | 0 |
| | Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 |
| | Truck | 81 | 146 | 17 | 31 |
| | Total | 3249 | 3161 | 681 | 663 |
| Sat PM | Auto | 2473 | 3074 | 518 | 644 |
| | Dropoff/Taxi | 0 | 0 | 0 | 0 |
| | Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 |
| | Truck | 70 | 144 | 15 | 30 |
| | Total | 2543 | 3218 | 533 | 674 |

Existing volumes were increased by 20.9% which is the increment in gross sf

TRAVEL DEMAND FORECAST

Table 10-3 summarizes the results of the travel demand forecast for the proposed project based on the factors shown in **Table 10-1** and the increment for retail trips shown in **Table 10-2**. **Table 10-3** also shows the total number of weekday and Saturday peak hour person trips, vehicle trips and transit trips that would be generated by the proposed project in the four analysis periods.

As shown in **Table 10-3**, the proposed project would generate a net total of 2,080, 2,802, 3,990 and 4,588 person trips during the weekday midday and PM and Saturday midday and PM peak hours, respectively. **Table 10-3** shows that, compared to the No Action condition, there would be an increase of approximately 1,261, 1,522, 1,981, and 2,131 vehicle trips (auto and truck combined) during the weekday midday and PM and Saturday midday and PM peak hours, respectively. Compared to the No Action condition, the proposed project would generate approximately 126, 168, 240 and 276 additional bus trips during the weekday midday and PM and Saturday midday and PM peak hours, respectively. Walk-only trips (which will not include bus trips because buses to the Mall stop inside Mall complex) total 83, 112, 159, and 183 person trips during the weekday midday and PM and Saturday midday and PM peak hours, respectively. Since the Mall is not within walking distance of a subway or rail station, it was assumed that the project will not generate subway or rail trips.

Since these numbers of peak hour trips would exceed the 2014 CEQR Technical Manual analysis thresholds for vehicular traffic and transit trips, a Level 2 screening assessment was undertaken to identify specific locations where additional detailed traffic and transit analyses may be warranted. The number of peak hour trips would not exceed these thresholds for walk-only trips, and therefore a Level 2 screening assessment for pedestrians would not be warranted.

D. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network and transit facilities, and the identification of specific locations where the incremental increase in demand may potentially exceed 2014 CEQR Technical Manual analysis thresholds and therefore require a more detailed analysis.

TRAFFIC

The origins and destinations of weekday and Saturday project-generated auto trips were estimated based on zip code data collected from Mall customers in a May 2013 survey by General Growth Properties. Autos were assigned to the most likely routes between these origins/destinations and the Mall. **Figure 10-1** shows the vehicle assignment diagram for the project-generated traffic, and **Figure 10-2** shows the intersections that were selected for analysis in this EIS.

As shown in **Figure 10-2**, a total of 38 intersections (35 signalized and three unsignalized) have been selected for detailed analysis of traffic conditions during the weekday midday and PM and Saturday midday and PM peak hours based on this Level 2 screening assessment. These intersections, listed below, are where traffic generated by the proposed project is expected to be most concentrated.



Figure 10-1
Traffic Portal Assignments

Staten Island Mall Enlargement



Figure 10-2
Study Area Locations

Staten Island Mall Enlargement

**Table 10-3
Preliminary Trip Generation**

| Land Use: | Movie Theater | Supermarket ⁽¹⁾ | Destination Retail ⁽²⁾ | Total | | | | |
|--------------------------|---------------|----------------------------|-----------------------------------|------------|-------------|-------------|--------------|--------------|
| Size/Units: | 2,500 seats | 50,000 sf | 313,583 sf | | | | | |
| Peak Hour Trips:* | | | | | | | | |
| MD | 245 | 420 | 1415 | 2,080 | | | | |
| PM | 652 | 700 | 1450 | 2,802 | | | | |
| Sat MD | 781 | 832 | 2377 | 3,990 | | | | |
| Sat PM | 1,625 | 832 | 2131 | 4,588 | | | | |
| Person Trips: | | | | | | | | |
| | In | Out | In | Out | In | Out | In | Out |
| MD | | | | | | | | |
| Auto | 110 | 110 | 189 | 189 | 625 | 648 | 924 | 947 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rail | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Public Bus | 8 | 7 | 13 | 13 | 42 | 43 | 63 | 63 |
| Walk/Bike/Other | 5 | 5 | 8 | 8 | 28 | 29 | 41 | 42 |
| Total | 123 | 122 | 210 | 210 | 695 | 720 | 1,028 | 1,052 |
| PM | | | | | | | | |
| Auto | 317 | 270 | 321 | 309 | 657 | 648 | 1,295 | 1,227 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rail | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Public Bus | 21 | 18 | 21 | 21 | 44 | 43 | 86 | 82 |
| Walk/Bike/Other | 14 | 12 | 14 | 14 | 29 | 29 | 57 | 55 |
| Total | 352 | 300 | 356 | 344 | 730 | 720 | 1,438 | 1,364 |
| Sat MD | | | | | | | | |
| Auto | 436 | 267 | 382 | 367 | 1096 | 1043 | 1,914 | 1,677 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rail | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Public Bus | 29 | 18 | 25 | 25 | 73 | 70 | 127 | 113 |
| Walk/Bike/Other | 19 | 12 | 17 | 16 | 49 | 46 | 85 | 74 |
| Total | 484 | 297 | 424 | 408 | 1218 | 1159 | 2,126 | 1,864 |
| Sat PM | | | | | | | | |
| Auto | 775 | 687 | 382 | 367 | 855 | 1,063 | 2,012 | 2,117 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rail | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Public Bus | 52 | 46 | 25 | 25 | 57 | 71 | 134 | 142 |
| Walk/Bike/Other | 34 | 31 | 17 | 16 | 38 | 47 | 89 | 94 |
| Total | 861 | 764 | 424 | 408 | 950 | 1181 | 2,235 | 2,353 |
| Vehicle Trips : | | | | | | | | |
| | In | Out | In | Out | In | Out | In | Out |
| MD | | | | | | | | |
| Auto | 46 | 46 | 95 | 95 | 431 | 447 | 572 | 588 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Truck | 19 | 19 | 2 | 2 | 20 | 39 | 41 | 60 |
| Total | 65 | 65 | 97 | 97 | 451 | 486 | 613 | 648 |
| PM | | | | | | | | |
| Auto | 132 | 113 | 161 | 155 | 453 | 447 | 746 | 715 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Truck | 4 | 4 | 2 | 2 | 26 | 23 | 32 | 29 |
| Total | 136 | 117 | 163 | 157 | 479 | 470 | 778 | 744 |
| Sat MD | | | | | | | | |
| Auto | 161 | 99 | 191 | 184 | 664 | 632 | 1,016 | 915 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Truck | 1 | 1 | 0 | 0 | 17 | 31 | 18 | 32 |
| Total | 162 | 100 | 191 | 184 | 681 | 663 | 1,034 | 947 |
| Sat PM | | | | | | | | |
| Auto | 287 | 254 | 191 | 184 | 518 | 644 | 996 | 1,082 |
| Dropoff/Taxi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dropoff/Taxi Balanced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Truck | 1 | 1 | 3 | 3 | 15 | 30 | 19 | 34 |
| Total | 288 | 255 | 194 | 187 | 533 | 674 | 1,015 | 1,116 |

(1) 20% of Supermarket trips assumed to be linked to Destination Retail.

(2) Destination Retail Modal Split assumed to be the same as other land uses. Vehicle Occupancy for Destination Retail of 1.45 trips/vehicle on a weekday and 1.65 trips/vehicle on a Saturday determined from a survey of the existing mall conducted on November 28-29, December 1, and December 8, 2012.

TRAFFIC ANALYSIS LOCATIONS – WEEKDAY AND SATURDAY

1. Richmond Hill Road at Richmond Avenue
2. Staten Island Mall Northwest Entrance at Richmond Avenue
3. Staten Island Mall Main Entrance at Richmond Avenue
4. Platinum Avenue at Richmond Avenue
5. Forest Hill Road at Richmond Avenue
6. Richmond Hill Road at Staten Island Mall North Entrance
7. Richmond Hill Road at Marsh Avenue
8. Richmond Hill Road at Forest Hill Road
9. Platinum Avenue at Staten Island Mall Southwest Entrance
10. Platinum Avenue at Staten Island Mall Drive
11. Platinum Avenue at Marsh Avenue
12. Platinum Avenue at Forest Hill Road
13. Staten Island Mall East Entrance at Marsh Avenue (Unsignalized)
14. Staten Island Mall Northeast Entrance at Marsh Avenue
15. Staten Island Mall Drive at Marsh Avenue
16. Goethals Road North-West Caswell Avenue-Staten Island Expressway at Richmond Avenue
17. Christopher Lane-Lamberts Lane at Richmond Avenue
18. Merrill Avenue-Morani Street at Richmond Avenue
19. Victory Boulevard at Richmond Avenue
20. Signs Road at Richmond Avenue
21. Rockland Avenue at Richmond Avenue
22. Draper Place at Richmond Avenue
23. Nome Avenue at Richmond Avenue
24. Drumgoole Road West at Richmond Avenue
25. Arthur Kill Road at Richmond Avenue
26. Barlow Avenue at Richmond Avenue
27. Katan Avenue at Richmond Avenue
28. Richmond Road at Arthur Kill Road-Richmond Hill Road
29. Clarke Avenue at Arthur Kill Road
30. Arthur Kill Road at Corbin Avenue (Unsignalized)
31. Arthur Kill Road at Drumgoole Road West
32. Arthur Kill Road at Woodrow Road
33. Victory Boulevard at South Gannon Avenue (Unsignalized)
34. Victory Boulevard at North Gannon Avenue
35. Rockland Avenue at Forest Hill Road
36. Rockland Avenue at Brielle Avenue
37. Richmond Road at Wilder Avenue
38. Forest Avenue at Richmond Avenue-Morningstar Road

TRANSIT

SUBWAY

~~As discussed above~~ Due to the lack of nearby subway or rail access, the proposed project is not expected to generate any new subway trips, and a detailed subway analysis is not included in this EIS.

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BUS

As shown in **Table 10-3**, the proposed project would generate a net total of 126, 168, 240 and 276 bus trips in the weekday midday and PM and Saturday midday and PM peak hours, respectively. The Mall is currently served by 11 NYC Transit bus routes: the S44, S55, S56, S59, S61, S79 Select Bus Service, S89 limited, S91 limited, S94 limited, X17, and X31. The following provides a description of each route. It should be noted that several of those routes terminate in the vicinity of the Mall.

S44/S94

The S44 provides local bus service between the shopping center south of the Mall and the St. George Ferry terminal. This service is replaced with the S94 limited-stop bus service in the peak direction during peak weekday commuting periods. In the vicinity of the Mall, this route primarily operates on Richmond Avenue, although it enters the Mall itself between the northwest entrance and Platinum Avenue. Approximately eight buses operate on this route during all peak hours. In analysis periods, the S94 limited runs only in the southbound direction and only during the weekday PM peak.

S55

The S55 provides weekday-only local bus service between the Staten Island Mall and Rossville. In the vicinity of the Mall the route runs on Richmond Avenue south of the site, uses Platinum Avenue between Richmond and Marsh Avenue, and terminates along Marsh Avenue. The bus route provides approximately 4 buses during both the weekday midday and PM peak hours.

S56

The S56 provides weekday-only local bus service between the Mall and Prince's Bay. In the vicinity of the Mall the route runs on Richmond Avenue south of the site, uses Platinum Avenue between Richmond and Marsh Avenue, and terminates along Marsh Avenue. The bus route provides approximately four buses during both the weekday midday and PM peak hours.

S59

The S59 provides local bus service between Eltingville and Port Richmond. In the vicinity of the Mall, this route primarily operates on Richmond Avenue, and it enters the Mall between the northwest entrance and Platinum Avenue. The bus route provides approximately six and eight buses during the weekday midday and PM peak hours, respectively and approximately six buses during both the Saturday midday and PM peak hours.

S61/S91

The S61 provides local bus service between the shopping center south of the Mall and the St. George Ferry terminal. The S91 provides supplemental limited-stop bus service along the same route in the peak direction during peak weekday commuting periods. In the vicinity of the Mall, the bus route both terminates and begins at the shopping center south of the Mall and utilizes Richmond Avenue, Platinum Avenue, Marsh Avenue, Richmond Hill Road, Merrymount Street, Travis Avenue, and Forest Hill Road. The S61 provides approximately eight and five buses during the weekday midday and PM peak hours respectively with approximately four supplemental southbound S91 buses during the weekday PM peak hour, and approximately eight buses during the Saturday midday and PM peak hours.

S79

The S79 Select Bus Service provides limited-stop bus service between the Mall and Bay Ridge, Brooklyn. The route both terminates and begins inside the Mall complex and uses Platinum Avenue and Richmond Avenue to and from points south. The bus route provides approximately three and eight buses per hour during the weekday midday and PM peak hours respectively, and approximately six buses per hour during the Saturday midday and PM peak hours.

S89

The S89 provides limited-stop bus service between Eltingville and Bayonne, New Jersey. The route only operates during peak weekday commuting periods. In the vicinity of the Mall, the route uses Richmond Avenue but runs on Platinum Avenue, Marsh Avenue, and Richmond Hill Road to circle the Mall. The bus route provides approximately 6 buses during the weekday PM peak hour.

X17

The X17 has three sub-routes that run through the vicinity of the Mall; all three routes use Richmond Avenue but runs on Platinum Avenue, Marsh Avenue, and Richmond Hill Road to circle the Mall. The X17A runs between the Eltingville Transit Center and Lower Manhattan during peak weekday commuting periods, the X17J runs between Huguenot and Midtown Manhattan during peak weekday commuting periods, and the X17C runs between Huguenot and both Lower and Midtown Manhattan at all other times. The bus route provides approximately three buses during the weekday and Saturday midday peak hours and 14 and five buses during the weekday and Saturday PM peak hours respectively.

X31

The X31 provides express bus service between the Eltingville Transit Center and Lower and Midtown Manhattan in the peak direction during peak weekday commuting periods. In the vicinity of the Mall, the route uses Richmond Avenue Platinum Avenue, Marsh Avenue, Richmond Hill Road, Merrymount Street, Travis Avenue, and Forest Hill Road. The bus route provides approximately three southbound buses during the weekday PM peak hour.

It should be noted that the S44/S94, S59, and S79 Select Bus Service operate along the internal circulation road in front of the Mall. There are two bus stops within the Mall: one at the north end of the Mall near the Macy's and one at the south end of the Mall near the Sears.

Although the project would generate 240 and 276 peak hour bus trips in the Saturday midday and Saturday PM peak hours respectively, it was assumed that these trips would be distributed evenly among the S44, S59, S61, and S79 Select Bus Service routes (the other routes do not operate during the Saturday peak hours), resulting in fewer than 50 person trips per route per direction in these peak hours. Therefore, detailed bus analysis is not warranted as per 2014 CEQR Technical Manual guidelines.

PARKING

As a quantitative traffic analysis is necessary based on the Level 1 and Level 2 screening assessments, an analysis of parking conditions is also provided. ~~Parking demand is expected to increase throughout the day as a result of the proposed project. In addition, as stated above, there would be a reduction of 367 accessory parking spaces on the project site. This would decrease the total number of accessory parking spaces at the Mall from 7,314 to 6,947 and the number of accessory parking spaces on the project site from 5,844 to 5,477.~~ The proposed Enlargement

Staten Island Mall Enlargement

would result in additional demand for parking and at the same time, the elimination of 367 accessory parking spaces would reduce the total number of accessory parking spaces at the Mall from 7,314 to 6,947 and the number of accessory parking spaces on the project site from 5,844 to 5,477.

Existing parking utilization surveys were conducted using aerial photographs of the Staten Island Mall on Wednesday, November 28th, 2012, Thursday, November 29th, 2012, Saturday, December 15th, 2012, and Saturday, December 7th, 2013 ~~and~~, the counts described in Section E (“Detailed Transportation Analysis Methodologies”), and supplemental counts conducted from 12:00 to 7:00 PM on Saturday, December 7th, 2013 to develop a an hour-by-hour parking utilization rates pattern for the average holiday weekday and average holiday Saturday. As shown in **Table 10-4**, under existing conditions approximately 3,435 and 4,567, or 47 percent and 62 percent, of total accessory spaces in the Mall complex are utilized in peak parking hours on Friday and Saturday, respectively. As shown in **Table 10-5**, this correlates to 2,942 and 3,673, or 50 percent and 63 percent, of spaces on the project site during peak parking hours on Friday and Saturday, respectively.

In the No Action condition there are not expected to be any new retail or other uses introduced, and therefore parking utilization would remain the same.

As the number of retail trips to and from the Mall is expected to increase by 20.9 percent, the parking counts were increased by 20.9 percent to obtain the incremental increase in retail trips. The *Springfield Gardens Pathmark EAS* and the *Sony East Elmhurst EAS* were used to obtain hourly in and out patterns for the supermarket and movie theater uses respectively.

In the With Action condition, as shown in **Tables 10-6 and 10-7**, totals of ~~4,612~~ 4,822 and ~~5,831~~ 5,821, or ~~66~~ 69 percent and 84 percent of accessory spaces in the Mall complex would be utilized in peak parking hours on Friday and Saturday, respectively. Conservatively assuming that all new visitors would park in spaces on the project site, totals of ~~4,119~~ 4,329 and ~~4,937~~ 4,927, or ~~75~~ 79 percent and 90 percent of spaces on the project site would be utilized in peak parking hours on Friday and Saturday respectively, as shown in **Table 10-5**. Because the on-site accessory parking capacity is expected to readily accommodate the parking demand under With Action conditions even with the reduction in spaces available, a detailed on-street and off-street parking analysis is not warranted.

Table 10-4

2012 Existing Parking Accumulation

| Average Holiday Weekday in 2012 | | | | |
|---------------------------------|---------------------------------|------------|---------------|-------------|
| | Sears Lot and Macys/SI Mall Lot | | Daily Parking | |
| | 1,496,585 In | gsf Out | Accumulation | Utilization |
| 12-1 AM | 0 | 0 | 0 | 0% |
| 1-2 | 0 | 0 | 0 | 0% |
| 2-3 | 0 | 0 | 0 | 0% |
| 3-4 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0% |
| 6-7 | 126 | 25 | 101 | 1% |
| 7-8 | 252 | 202 | 151 | 2% |
| 8-9 | 907 | 605 | 453 | 6% |
| 9-10 | 1487 | 328 | 1612 | 22% |
| 10-11 | 1865 | 957 | 2520 | 34% |
| 11-12 | 2142 | 1537 | 3125 | 43% |
| 12-1 PM | 2158 | 2211 | 3072 | 42% |
| 1-2 | 2057 | 2322 | 2807 | 38% |
| 2-3 | 1926 | 2323 | 2410 | 33% |
| 3-4 | 2345 | 2042 | 2713 | 37% |
| 4-5 | 2285 | 1895 | 3103 | 42% |
| 5-6 | 2162 | 2134 | 3131 | 43% |
| 6-7 | 2007 | 2005 | 3133 | 43% |
| 7-8 | 2091 | 1789 | 3435 | 47% |
| 8-9 | 857 | 1965 | 2327 | 32% |
| 9-10 | 403 | 2217 | 513 | 7% |
| 10-11 | 126 | 353 | 286 | 4% |
| 11-12 | 0 | 286 | 0 | 0% |

| Average Holiday Saturday in 2012 | | | | |
|----------------------------------|---------------------------------|------------|---------------|-------------|
| | Sears Lot and Macys/SI Mall Lot | | Daily Parking | |
| | 1,496,585 In | gsf Out | Accumulation | Utilization |
| 12-1 AM | 0 | 0 | 0 | 0% |
| 1-2 | 0 | 0 | 0 | 0% |
| 2-3 | 0 | 0 | 0 | 0% |
| 3-4 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0% |
| 6-7 | 54 | 22 | 32 | 0% |
| 7-8 | 109 | 54 | 87 | 1% |
| 8-9 | 895 | 570 | 412 | 6% |
| 9-10 | 1356 | 705 | 1063 | 15% |
| 10-11 | 2143 | 1329 | 1877 | 26% |
| 11-12 | 2848 | 2034 | 2691 | 37% |
| 12-1 PM | 3014 | 2069 | 3636 | 50% |
| 1-2 | 3252 | 2474 | 4414 | 60% |
| 2-3 | 3168 | 3015 | 4567 | 62% |
| 3-4 | 2707 | 3141 | 4133 | 57% |
| 4-5 | 2473 | 3074 | 3532 | 48% |
| 5-6 | 2240 | 3007 | 2765 | 38% |
| 6-7 | 1900 | 2540 | 2125 | 29% |
| 7-8 | 407 | 732 | 1800 | 25% |
| 8-9 | 271 | 841 | 1230 | 17% |
| 9-10 | 163 | 488 | 905 | 12% |
| 10-11 | 109 | 570 | 444 | 6% |
| 11-12 | 17 | 461 | 0 | 0% |

The In and Out pattern for the Off-peak hours from 6am-12pm & 7pm to 12am are based on the Institution of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition, Land Use 820: Shopping Center. The hour between 3pm-4pm was interpolated between peak hour counts to balance parking accumulation. Bolded accumulation indicates peak parking hour.

Table 10-5

Staten Island Mall Existing and Future Parking Utilization Rates

Existing Counts Based on Aerials

| | Sears Lot | | Convenience Center | | Macys/SI Mall Lot | | Total | |
|---------------------------------|-----------|-------------|--------------------|-------------|-------------------|-------------|-----------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5844 | | 7314 | |
| Aerial Date and Time | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Wednesday, 11/28/2012, 12:45 PM | 267 | 25% | 137 | 35% | 2407 | 41% | 2811 | 38% |
| Thursday, 11/29/2012, 11:00 AM | 309 | 29% | 174 | 45% | 3062 | 52% | 3545 | 48% |
| Saturday, 12/15/2012, 12:00 PM | 563 | 52% | 161 | 41% | 2978 | 51% | 3702 | 51% |
| Saturday, 12/07/2013, 2:00 PM | 600 | 55% | 232 | 60% | 3750 | 64% | 4582 | 63% |

2012 Existing Peak Hour Parking Utilization

| | Sears Lot | | Convenience Center | | Macys/SI Mall Lot | | Total | |
|--|-----------|-------------|--------------------|-------------|-------------------|-------------|-----------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5844 | | 7314 | |
| Peak Hour | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Average Weekday, 8:00 PM ¹ | 326 | 30% | 167 | 43% | 2942 | 50% | 3435 | 47% |
| Average Saturday, 3:00 PM ¹ | 695 | 64% | 199 | 51% | 3673 | 63% | 4567 | 62% |

2019 With-Action Peak Hour Parking Utilization

| | Sears Lot | | Convenience Center | | Enlarged Macys/SI Mall Lot | | Total | |
|--------------------------------|-----------|-------------|--------------------|-------------|----------------------------|-------------|-------------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5477 | | 6947 | |
| Peak Hour | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Weekday, 8:00 PM ² | 326 | 30% | 167 | 43% | <u>4329</u> | <u>79%</u> | <u>4822</u> | <u>69%</u> |
| Saturday, 3:00 PM ³ | 695 | 64% | 199 | 51% | <u>4927</u> | <u>90%</u> | <u>5821</u> | <u>84%</u> |

1. Based on balanced network existing parking accumulation table
2. Based on balanced network future holiday weekday parking accumulation table
3. Based on balanced network future holiday Saturday parking accumulation table

DEIS PERSON - Table has been updated

Table 10-5

Staten Island Mall Existing and Future Parking Utilization Rates

Existing Counts Based on Aerials

| | Sears Lot | | Convenience Center | | Macys/SI Mall Lot | | Total | |
|---------------------------------|-----------|-------------|--------------------|-------------|-------------------|-------------|-----------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5844 | | 7314 | |
| Aerial Date and Time | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Wednesday, 11/28/2012, 12:45 PM | 267 | 25% | 137 | 35% | 2407 | 41% | 2811 | 38% |
| Thursday, 11/29/2012, 11:00 AM | 309 | 29% | 174 | 45% | 3062 | 52% | 3545 | 48% |
| Saturday, 12/15/2012, 12:00 PM | 563 | 52% | 161 | 41% | 2978 | 51% | 3702 | 51% |
| Saturday, 12/07/2013, 2:00 PM | 600 | 55% | 232 | 60% | 3750 | 64% | 4582 | 63% |

2012 Existing Peak Hour Parking Utilization

| | Sears Lot | | Convenience Center | | Macys/SI Mall Lot | | Total | |
|--|-----------|-------------|--------------------|-------------|-------------------|-------------|-----------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5844 | | 7314 | |
| Peak Hour | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Average Weekday, 8:00 PM ¹ | 326 | 30% | 167 | 43% | 2942 | 50% | 3435 | 47% |
| Average Saturday, 3:00 PM ¹ | 695 | 64% | 199 | 51% | 3673 | 63% | 4567 | 62% |

2019 With-Action Peak Hour Parking Utilization

| | Sears Lot | | Convenience Center | | Enlarged Macys/SI Mall Lot | | Total | |
|--------------------------------|-----------|-------------|--------------------|-------------|----------------------------|-------------|-------------|-------------|
| Total Parking Spaces | 1082 | | 388 | | 5477 | | 6947 | |
| Peak Hour | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization | Occupancy | Utilization |
| Weekday, 8:00 PM ² | 326 | 30% | 167 | 43% | <u>4329</u> | <u>79%</u> | <u>4822</u> | <u>69%</u> |
| Saturday, 3:00 PM ³ | 695 | 64% | 199 | 51% | <u>4927</u> | <u>90%</u> | <u>5821</u> | <u>84%</u> |

1. Based on balanced network existing parking accumulation table
2. Based on balanced network future holiday weekday parking accumulation table
3. Based on balanced network future holiday Saturday parking accumulation table

Table 10-6

2019 With-Action Holiday Weekday Parking Accumulation

| | Existing Retail 1,496,585 gsf | | Retail Enlargement 313,583 gsf | | Movie Theater 2,500 seats | | Supermarket 50,000 gsf | | Project Increment | | Future Trips | | Accumulation | Utilization |
|---------|----------------------------------|------|-----------------------------------|-----|------------------------------|-----|---------------------------|-----|-------------------|------|--------------|------|--------------|-------------|
| | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | | |
| 12-1 AM | 0 | 0 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 111 | 0 | 111 | 222 | 3% |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 87 | 0 | 87 | 111 | 2% |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 24 | 0 | 24 | 24 | 0% |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 6-7 | 126 | 25 | 26 | 5 | 0 | 0 | 0 | 0 | 26 | 5 | 152 | 30 | 122 | 2% |
| 7-8 | 252 | 202 | 53 | 42 | 0 | 0 | 187 | 145 | 240 | 187 | 492 | 389 | 225 | 3% |
| 8-9 | 907 | 605 | 190 | 127 | 4 | 0 | 201 | 175 | 395 | 302 | 1302 | 907 | 620 | 9% |
| 9-10 | 1487 | 328 | 312 | 69 | 4 | 0 | 208 | 187 | 524 | 256 | 2011 | 584 | 2047 | 29% |
| 10-11 | 1865 | 957 | 391 | 201 | 8 | 0 | 215 | 206 | 614 | 407 | 2479 | 1364 | 3162 | 46% |
| 11-12 | 2142 | 1537 | 449 | 322 | 16 | 0 | 263 | 227 | 728 | 549 | 2870 | 2086 | 3946 | 57% |
| 12-1 PM | 2158 | 2211 | 452 | 463 | 125 | 58 | 239 | 287 | 816 | 808 | 2974 | 3019 | 3901 | 56% |
| 1-2 | 2057 | 2322 | 431 | 487 | 46 | 46 | 95 | 95 | 572 | 628 | 2629 | 2950 | 3580 | 52% |
| 2-3 | 1926 | 2323 | 404 | 487 | 171 | 123 | 207 | 217 | 782 | 827 | 2708 | 3150 | 3138 | 45% |
| 3-4 | 2345 | 2042 | 491 | 428 | 177 | 195 | 220 | 233 | 888 | 856 | 3233 | 2898 | 3473 | 50% |
| 4-5 | 2285 | 1895 | 479 | 397 | 189 | 121 | 216 | 262 | 884 | 780 | 3169 | 2675 | 3967 | 57% |
| 5-6 | 2162 | 2134 | 453 | 447 | 132 | 113 | 161 | 155 | 746 | 715 | 2908 | 2849 | 4026 | 58% |
| 6-7 | 2007 | 2005 | 421 | 420 | 500 | 235 | 257 | 246 | 1178 | 901 | 3185 | 2906 | 4305 | 62% |
| 7-8 | 2091 | 1789 | 438 | 375 | 400 | 235 | 217 | 230 | 1055 | 840 | 3146 | 2629 | 4822 | 69% |
| 8-9 | 857 | 1965 | 180 | 412 | 490 | 424 | 252 | 247 | 922 | 1083 | 1779 | 3048 | 3553 | 51% |
| 9-10 | 403 | 2217 | 84 | 464 | 402 | 525 | 212 | 238 | 698 | 1227 | 1101 | 3444 | 1210 | 17% |
| 10-11 | 126 | 353 | 26 | 74 | 217 | 472 | 0 | 0 | 243 | 546 | 369 | 899 | 680 | 10% |
| 11-12 | 0 | 286 | 0 | 60 | 176 | 288 | 0 | 0 | 176 | 348 | 176 | 634 | 222 | 3% |

Bolded accumulation indicates peak parking hour.

Retail Enlargement temporal distribution based on a 20.9 percent increase of the existing temporal distribution.

Movie Theater temporal distribution based on the Sony East Elmhurst EAS.

Supermarket temporal distribution based on the Springfield Gardens Pathmark EAS.

DEIS VERSION Table has been updated

Table 10-6

2019 With-Action Holiday Weekday Parking Accumulation

| | Existing Retail | | Retail Enlargement | | Movie Theater | | Supermarket | | Project Increment | | Future Trips | | | |
|---------|-----------------|------------|--------------------|------------|---------------|--------------|--------------|------------|-------------------|------|--------------|------|--------------|-------------|
| | 1,496,585 In | gsf Out | 313,583 In | gsf Out | 2,500 In | seats Out | 50,000 In | gsf Out | In | Out | In | Out | Accumulation | Utilization |
| 12-1 AM | 0 | 0 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 111 | 0 | 111 | 222 | 3% |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 87 | 0 | 87 | 111 | 2% |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 24 | 0 | 24 | 24 | 0% |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 6-7 | 126 | 25 | 26 | 5 | 0 | 0 | 0 | 0 | 26 | 5 | 152 | 30 | 122 | 2% |
| 7-8 | 252 | 202 | 53 | 42 | 0 | 0 | 187 | 145 | 240 | 187 | 492 | 389 | 225 | 3% |
| 8-9 | 907 | 605 | 190 | 127 | 4 | 0 | 201 | 175 | 395 | 302 | 1302 | 907 | 620 | 9% |
| 9-10 | 1487 | 328 | 312 | 69 | 4 | 0 | 208 | 187 | 524 | 256 | 2011 | 584 | 2047 | 29% |
| 10-11 | 1865 | 957 | 391 | 201 | 8 | 0 | 215 | 206 | 614 | 407 | 2479 | 1364 | 3162 | 46% |
| 11-12 | 2142 | 1537 | 449 | 322 | 16 | 0 | 263 | 227 | 728 | 549 | 2870 | 2086 | 3946 | 57% |
| 12-1 PM | 2158 | 2211 | 452 | 463 | 125 | 58 | 239 | 287 | 816 | 808 | 2974 | 3019 | 3901 | 56% |
| 1-2 | 2057 | 2322 | 431 | 487 | 46 | 46 | 95 | 95 | 572 | 628 | 2629 | 2950 | 3580 | 52% |
| 2-3 | 1926 | 2323 | 404 | 487 | 171 | 123 | 207 | 217 | 782 | 827 | 2708 | 3150 | 3138 | 45% |
| 3-4 | 2345 | 2042 | 491 | 428 | 177 | 195 | 220 | 233 | 888 | 856 | 3233 | 2898 | 3473 | 50% |
| 4-5 | 2285 | 1895 | 479 | 397 | 189 | 121 | 216 | 262 | 884 | 780 | 3169 | 2675 | 3967 | 57% |
| 5-6 | 2162 | 2134 | 453 | 447 | 132 | 113 | 161 | 155 | 746 | 715 | 2908 | 2849 | 4026 | 58% |
| 6-7 | 2007 | 2005 | 421 | 420 | 500 | 235 | 257 | 246 | 1178 | 901 | 3185 | 2906 | 4305 | 62% |
| 7-8 | 2091 | 1789 | 438 | 375 | 400 | 235 | 217 | 230 | 1055 | 840 | 3146 | 2629 | 4822 | 69% |
| 8-9 | 857 | 1965 | 180 | 412 | 490 | 424 | 252 | 247 | 922 | 1083 | 1779 | 3048 | 3553 | 51% |
| 9-10 | 403 | 2217 | 84 | 464 | 402 | 525 | 212 | 238 | 698 | 1227 | 1101 | 3444 | 1210 | 17% |
| 10-11 | 126 | 353 | 26 | 74 | 217 | 472 | 0 | 0 | 243 | 546 | 369 | 899 | 680 | 10% |
| 11-12 | 0 | 286 | 0 | 60 | 176 | 288 | 0 | 0 | 176 | 348 | 176 | 634 | 222 | 3% |

Bolded accumulation indicates peak parking hour.

Retail Enlargement temporal distribution based on a 20.9 percent increase of the existing temporal distribution.

Movie Theater temporal distribution based on the Sony East Elmhurst EAS.

Supermarket temporal distribution based on the Springfield Gardens Pathmark EAS.

Table 10-7

2019 With-Action Holiday Saturday Parking Accumulation

| | Existing Retail 1,496,585 | | Retail Enlargement 313,583 | | Movie Theater 2500 | | Supermarket 50000 | | Project Increment | | Future Trips | | | |
|---------|------------------------------|------|-------------------------------|-----|-----------------------|-------|----------------------|-----|-------------------|------|--------------|------|--------------|-------------|
| | In | Out | In | Out | In | seats | In | Out | In | Out | In | Out | Accumulation | Utilization |
| 12-1 AM | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 145 | 0 | 145 | 289 | 4% |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 96 | 0 | 96 | 144 | 2% |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 48 | 0 | 48 | 48 | 1% |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 6-7 | 55 | 22 | 11 | 5 | 0 | 0 | 0 | 0 | 11 | 5 | 66 | 27 | 39 | 1% |
| 7-8 | 109 | 54 | 23 | 11 | 0 | 0 | 61 | 55 | 84 | 66 | 193 | 120 | 112 | 2% |
| 8-9 | 895 | 570 | 188 | 120 | 5 | 0 | 78 | 92 | 271 | 212 | 1166 | 782 | 496 | 7% |
| 9-10 | 1356 | 705 | 284 | 148 | 7 | 0 | 102 | 82 | 393 | 230 | 1749 | 935 | 1310 | 19% |
| 10-11 | 2143 | 1329 | 449 | 278 | 13 | 0 | 134 | 111 | 596 | 389 | 2739 | 1718 | 2331 | 34% |
| 11-12 | 2848 | 2034 | 597 | 426 | 25 | 0 | 134 | 125 | 756 | 551 | 3604 | 2585 | 3350 | 48% |
| 12-1 PM | 3014 | 2069 | 632 | 434 | 129 | 96 | 122 | 128 | 883 | 658 | 3897 | 2727 | 4520 | 65% |
| 1-2 | 3252 | 2474 | 681 | 518 | 204 | 91 | 183 | 190 | 1068 | 799 | 4320 | 3273 | 5567 | 80% |
| 2-3 | 3168 | 3015 | 664 | 632 | 161 | 99 | 191 | 184 | 1016 | 915 | 4184 | 3930 | 5821 | 84% |
| 3-4 | 2707 | 3141 | 567 | 658 | 224 | 217 | 183 | 191 | 974 | 1066 | 3681 | 4207 | 5295 | 76% |
| 4-5 | 2473 | 3074 | 518 | 644 | 287 | 255 | 191 | 184 | 996 | 1083 | 3469 | 4157 | 4607 | 66% |
| 5-6 | 2240 | 3007 | 469 | 630 | 683 | 457 | 206 | 168 | 1358 | 1255 | 3598 | 4262 | 3943 | 57% |
| 6-7 | 1900 | 2540 | 398 | 532 | 805 | 579 | 118 | 126 | 1321 | 1237 | 3221 | 3777 | 3387 | 49% |
| 7-8 | 407 | 732 | 85 | 153 | 866 | 662 | 113 | 116 | 1064 | 931 | 1471 | 1663 | 3195 | 46% |
| 8-9 | 271 | 841 | 57 | 176 | 870 | 687 | 90 | 102 | 1017 | 965 | 1288 | 1806 | 2677 | 39% |
| 9-10 | 163 | 488 | 34 | 102 | 674 | 693 | 107 | 122 | 815 | 917 | 978 | 1405 | 2250 | 32% |
| 10-11 | 109 | 570 | 23 | 120 | 134 | 559 | 66 | 103 | 223 | 782 | 332 | 1352 | 1230 | 18% |
| 11-12 | 17 | 461 | 4 | 97 | 122 | 525 | 0 | 0 | 126 | 622 | 143 | 1083 | 290 | 4% |

Bolded accumulation indicates peak parking hour.

Retail Enlargement temporal distribution based on a 20.9 percent increase of the existing temporal distribution.

Movie Theater temporal distribution based on the *Sony East Elmhurst EAS*.

Supermarket temporal distribution based on the *Springfield Gardens Pathmark EAS*.

DEIS VERSION - Table has been updated

Table 10-7

2019 With-Action Holiday Saturday Parking Accumulation

| | Existing Retail 1,496,585 | | Retail Enlargement 313,583 | | Movie Theater 2500 | | Supermarket 50000 | | Project Increment | | Future Trips | | | |
|---------|------------------------------|------|-------------------------------|-----|-----------------------|-----|----------------------|-----|-------------------|------|--------------|------|--------------|-------------|
| | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | Accumulation | Utilization |
| 12-1 AM | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 145 | 0 | 145 | 289 | 4% |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 96 | 0 | 96 | 144 | 2% |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 48 | 0 | 48 | 48 | 1% |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 4-5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 5-6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 6-7 | 55 | 22 | 11 | 5 | 0 | 0 | 0 | 0 | 11 | 5 | 66 | 27 | 39 | 1% |
| 7-8 | 109 | 54 | 23 | 11 | 0 | 0 | 61 | 55 | 84 | 66 | 193 | 120 | 112 | 2% |
| 8-9 | 895 | 570 | 188 | 120 | 5 | 0 | 78 | 92 | 271 | 212 | 1166 | 782 | 496 | 7% |
| 9-10 | 1356 | 705 | 284 | 148 | 7 | 0 | 102 | 82 | 393 | 230 | 1749 | 935 | 1310 | 19% |
| 10-11 | 2143 | 1329 | 449 | 278 | 13 | 0 | 134 | 111 | 596 | 389 | 2739 | 1718 | 2331 | 34% |
| 11-12 | 2848 | 2034 | 597 | 426 | 25 | 0 | 134 | 125 | 756 | 551 | 3604 | 2585 | 3350 | 48% |
| 12-1 PM | 3014 | 2069 | 632 | 434 | 129 | 96 | 122 | 128 | 883 | 658 | 3897 | 2727 | 4520 | 65% |
| 1-2 | 3252 | 2474 | 681 | 518 | 204 | 91 | 183 | 190 | 1068 | 799 | 4320 | 3273 | 5567 | 80% |
| 2-3 | 3168 | 3015 | 664 | 632 | 161 | 99 | 191 | 184 | 1016 | 915 | 4184 | 3930 | 5821 | 84% |
| 3-4 | 2707 | 3141 | 567 | 658 | 224 | 217 | 183 | 191 | 974 | 1066 | 3681 | 4207 | 5295 | 76% |
| 4-5 | 2473 | 3074 | 518 | 644 | 287 | 255 | 191 | 184 | 996 | 1083 | 3469 | 4157 | 4607 | 66% |
| 5-6 | 2240 | 3007 | 469 | 630 | 683 | 457 | 206 | 168 | 1358 | 1255 | 3598 | 4262 | 3943 | 57% |
| 6-7 | 1900 | 2540 | 398 | 532 | 805 | 579 | 118 | 126 | 1321 | 1237 | 3221 | 3777 | 3387 | 49% |
| 7-8 | 407 | 732 | 85 | 153 | 866 | 662 | 113 | 116 | 1064 | 931 | 1471 | 1663 | 3195 | 46% |
| 8-9 | 271 | 841 | 57 | 176 | 870 | 687 | 90 | 102 | 1017 | 965 | 1288 | 1806 | 2677 | 39% |
| 9-10 | 163 | 488 | 34 | 102 | 674 | 693 | 107 | 122 | 815 | 917 | 978 | 1405 | 2250 | 32% |
| 10-11 | 109 | 570 | 23 | 120 | 134 | 559 | 66 | 103 | 223 | 782 | 332 | 1352 | 1230 | 18% |
| 11-12 | 17 | 461 | 4 | 97 | 122 | 525 | 0 | 0 | 126 | 622 | 143 | 1083 | 290 | 4% |

Bolded accumulation indicates peak parking hour.

Retail Enlargement temporal distribution based on a 20.9 percent increase of the existing temporal distribution.

Movie Theater temporal distribution based on the *Sony East Elmhurst EAS*.

Supermarket temporal distribution based on the *Springfield Gardens Pathmark EAS*.

E. DETAILED TRANSPORTATION ANALYSES METHODOLOGIES

As discussed above in Section D, “Level 2 Screening Assessment,” the proposed Enlargement screens out the need for further analysis with respect to transit, pedestrians, and parking; vehicular traffic is the only transportation area requiring detailed analysis.

TRAFFIC

ANALYSIS METHODOLOGY

To establish the existing conditions traffic network for the study area, manual turning movement, vehicle classification, and automatic traffic recorder (ATR) counts were conducted during the weekday midday (1-2 PM), weekday PM (5-6 PM), Saturday midday (1:45-2:45 PM), and Saturday PM (4:30-5:30 PM) peak hours on Wednesday, November 28th, 2012, Thursday, November 29th, 2012, Saturday, December 1st, 2012, and Saturday, December 8th, 2012. These counts included all traffic entering and exiting the Mall complex. Field surveys of parking regulations, lane configurations, and other physical and operational characteristics of the street network were undertaken in December 2012. Current signal timing plans for signalized intersections within the study area were obtained from the New York City Department of Transportation (DOT). Parking utilization surveys at the Mall were conducted on the dates stated in section E (“Level 2 Screening Assessment – Parking”).

The capacity analyses at study area intersections are based on the methodology presented in the *Highway Capacity Manual (HCM) Software HCS+ Version 5.5*. Traffic data required for these analyses include the hourly volumes on each approach and various other physical and operational characteristics. As noted above, existing signal timing plans for signalized intersections were obtained from DOT and field inventories were conducted in December 2012 to document the physical layout, lane markings, curbside parking regulations, and other relevant characteristics needed for the analysis.

The HCM methodology provides a volume-to-capacity (v/c) ratio for each signalized intersection approach. The v/c ratio represents the ratio of traffic volumes on an approach to the approach’s carrying capacity. A ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio of between 0.95 and 1.0, near-capacity conditions are reached and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses quality of flow in terms of level of service (LOS), which is based on the amount of delay that a driver typically experiences at an intersection. Levels of service range from A, with minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

For unsignalized intersections, the HCM methodology generally assumes that major street traffic is not affected by minor street flows. Left turns from the major street are assumed to be affected by the opposing, or oncoming major street flow. Minor street traffic is affected by all conflicting movements. Similar to signalized intersections, the HCM methodology expresses the quality of flow at unsignalized intersections in terms of LOS based on the amount of delay that a driver experiences. This relationship differs somewhat from the criteria used for signalized intersections, primarily because drivers expect different levels of performance from the two different kinds of transportation facilities. For unsignalized intersections, levels of service range from A, with minimal delay (10 seconds or less per vehicle), to F, which represents long delays (over 50 seconds per vehicle).

Table 10-8 shows the LOS/delay relationship for signalized intersections using the HCM methodology. Levels of service A, B, and C generally represent highly favorable to fair levels of traffic flow. At LOS D, the influence of congestion becomes noticeable. LOS E is considered to be the limit of acceptable delay, and LOS F is considered to be unacceptable to most drivers. In this study, a signalized lane grouping operating at LOS E or F or a v/c ratio of 0.90 or above is identified as congested. For unsignalized intersections, a lane group with LOS E or F is also identified as congested.

**Table 10-8
Intersection Level of Service Criteria**

| Level of Service (LOS) | Average Delay per Vehicle (seconds) | |
|------------------------|-------------------------------------|----------------------------|
| | Signalized Intersections | Unsignalized Intersections |
| A | less than 10.1 | less than 10.1 |
| B | 10.1 to 20.0 | 10.1 to 15.0 |
| C | 20.1 to 35.0 | 15.1 to 25.0 |
| D | 35.1 to 55.0 | 25.1 to 35.0 |
| E | 55.1 to 80.0 | 35.1 to 50.0 |
| F | greater than 80.0 | greater than 50.0 |

Source: 2010 Highway Capacity Manual.

SIGNIFICANT IMPACT CRITERIA

The identification of significant adverse traffic impacts at analyzed intersections is based on criteria presented in the 2014 CEQR Technical Manual. According to 2014 CEQR Technical Manual criteria, if a lane group under the With Action condition is within LOS A, B or C, or marginally acceptable LOS D (average control delay less than or equal to 45.0 seconds/vehicle for signalized intersections and 30.0 seconds/vehicle for unsignalized intersections), the impact is not considered significant. If the lane group LOS deteriorates from LOS A, B, or C in the No Action condition to worse than mid-LOS D (i.e., delay greater than 45 seconds/vehicle at signalized intersections or 30 seconds/vehicle at unsignalized intersections) or to LOS E or F under the With Action condition, then a significant traffic impact has occurred. For a lane group operating at LOS D under the No Action condition, an increase of five or more seconds is considered significant if the With Action delay exceeds mid-LOS D. For a lane group operating at LOS E under the No Action condition, an increase in projected delay of 4.0 or more seconds is considered significant, and for a lane group operating at LOS F under the No Action condition, an increase in projected delay of 3.0 or more seconds is considered significant.

The same criteria apply to both signalized and unsignalized intersections. However, for the minor street at an unsignalized intersection to trigger significant impacts, 90 passenger-car equivalents (PCEs) must be identified in the future With Action condition in any peak hour.

TRANSIT

As discussed above, the proposed project is not expected to result in any significant adverse impacts to subway or bus services and a detailed transit analysis is not provided in this EIS.

PEDESTRIANS

As discussed above, the proposed project is not expected to result in any significant adverse impacts to pedestrian travel elements and a detailed pedestrian analysis is not provided in this EIS.

PARKING

As discussed above, the proposed project is not expected to result in any significant adverse parking impacts and a detailed parking analysis is not provided in this EIS.

F. TRAFFIC

EXISTING CONDITIONS

STUDY AREA NETWORK

The roadway network around the Mall is a network of arterials connecting different areas of Staten Island. Richmond Avenue serves as the main access road to and from the site, with Richmond Hill Road and Forest Hill Road providing secondary routes to and from the site. Other major arterials farther away from the site include Victory Boulevard, Arthur Kill Road, and Richmond Road. The Korean War Veterans Parkway, about 1.5 miles southwest of the site, can be accessed via Richmond Avenue and connects the mall to southwest Staten Island. The Staten Island Expressway is located approximately 2 to 2.5 miles from the site and is accessed from Richmond Avenue and Victory Boulevard. **Figures 10-3a-3c, 10-4a-4c, 10-5a-5c, and 10-6a-6c** show the existing 2012 peak hour traffic volumes on the study area street network during the weekday midday and PM and Saturday midday and PM peak hours, respectively.

Richmond Avenue extends north-south across central Staten Island between Hylan Boulevard and Forest Avenue, transitioning into Morningstar Road at Forest Avenue. Richmond Avenue is a major arterial across Staten Island connecting the Port Richmond area to the Eltingville area and provides access to the Mall, the Korean War Veterans Parkway, and the Eltingville Transit Center, a park and ride for local and express bus service. In the vicinity of the Mall, two-way traffic volumes are approximately 2,650 to 4,800 vph with the highest volumes occurring during the Saturday midday peak period. Richmond Avenue varies in its characteristics; it has a raised median and 3-4 lanes in each direction between Victory Boulevard and Arthur Kill Road (four lanes in the vicinity of the Mall), two lanes in each direction north of Victory Boulevard, and 1-2 lanes in each direction south of Arthur Kill Road. Parking is permitted along most sections of the street, although it is prohibited in the area immediately surrounding the Mall. As noted earlier, many NYCT bus routes operate along Richmond Avenue. In the vicinity of the Mall, there are nine bus routes operating along Richmond Avenue: the S44 and S94 buses operate north of the Mall, the S55, S56, S79 Select Bus Service, and X31 buses operate south of the Mall, the S59 bus operates along the length of Richmond Avenue and enters the Mall, and the S89 and X17 buses operate along the length of Richmond Avenue but use Richmond Hill Road, Marsh Avenue, and Platinum Avenue to circumnavigate the Mall. Richmond Avenue is a local truck route for its entire length. There are two major access/egress locations to/from the Mall on Richmond Avenue—the main entrance to the Mall and an entrance at the northwest corner of the Mall. A very minor access/egress point that can only be used via northbound Richmond Avenue is located just south of the northwest entrance and is mainly used to access sites off the mall property.

Richmond Hill Road travels east-west between Richmond Avenue and Richmond Road, transitioning into Arthur Kill Road at Richmond Road. Richmond Hill Road is one of several arterials crossing the Staten Island Greenbelt and is designated as a New York City local truck route between Richmond Avenue and Forest Hill Road. Two-way traffic volumes along Richmond Hill Road vary from 1,050 to 1,450 vph, with the highest volume occurring during the Saturday midday peak hour. Richmond Hill Road consists of two travel lanes in each direction between Richmond and Marsh Avenue, one travel lane in each direction with turn bays

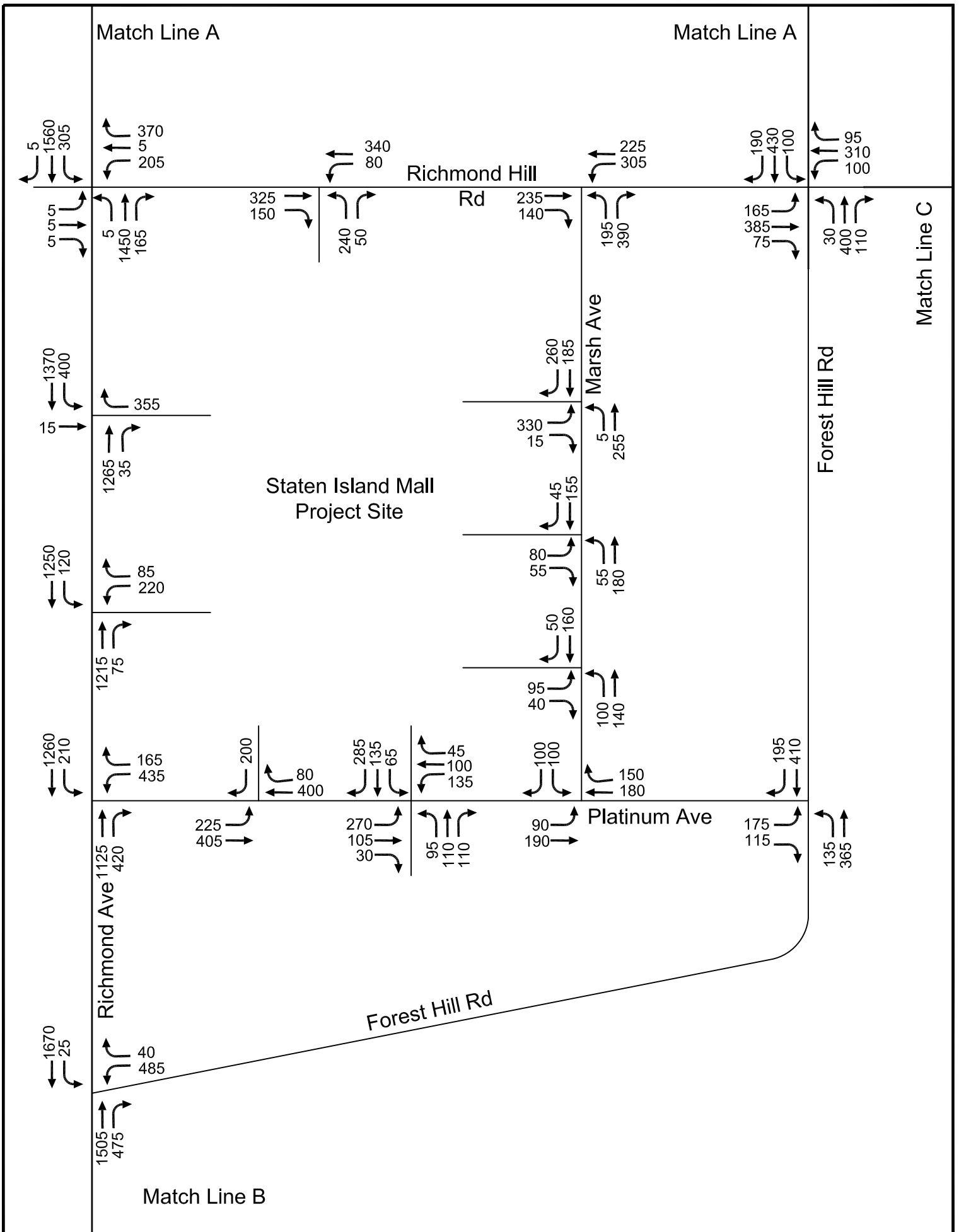


Figure 10-3a
2012 Existing Weekday Midday Balanced Network

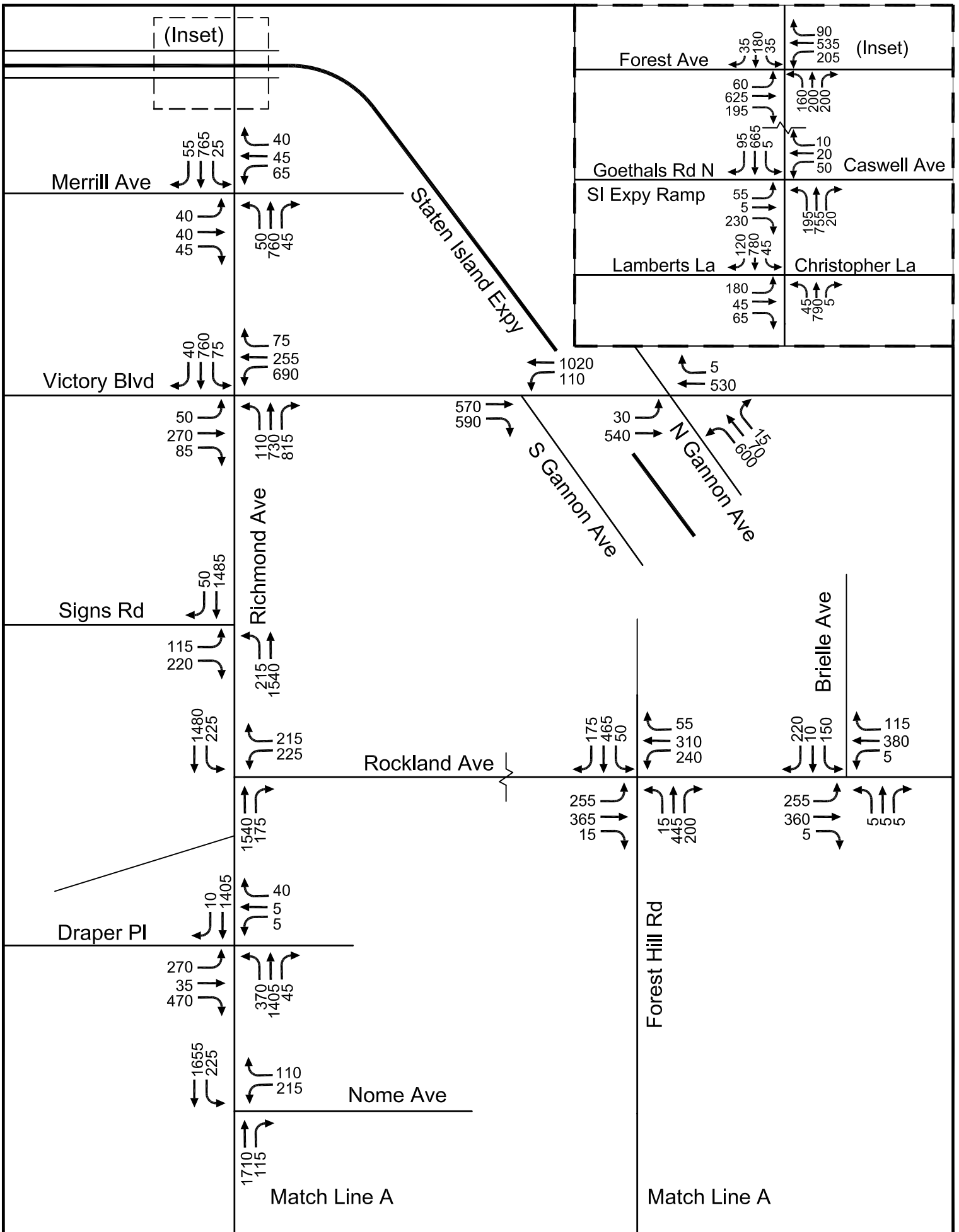


Figure 10-3b
2012 Existing Weekday Midday Balanced Network

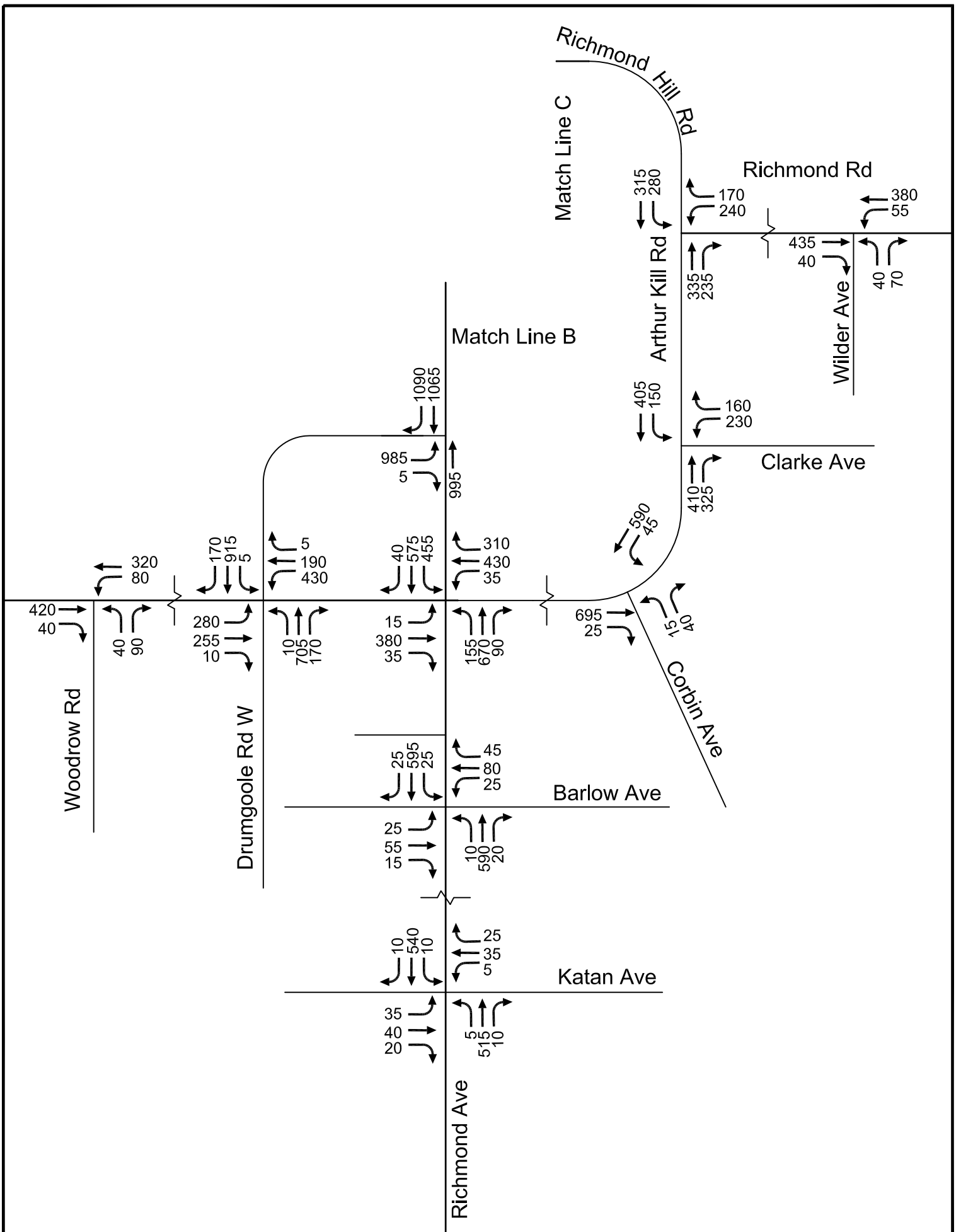


Figure 10-3c
2012 Existing Weekday Midday Balanced Network

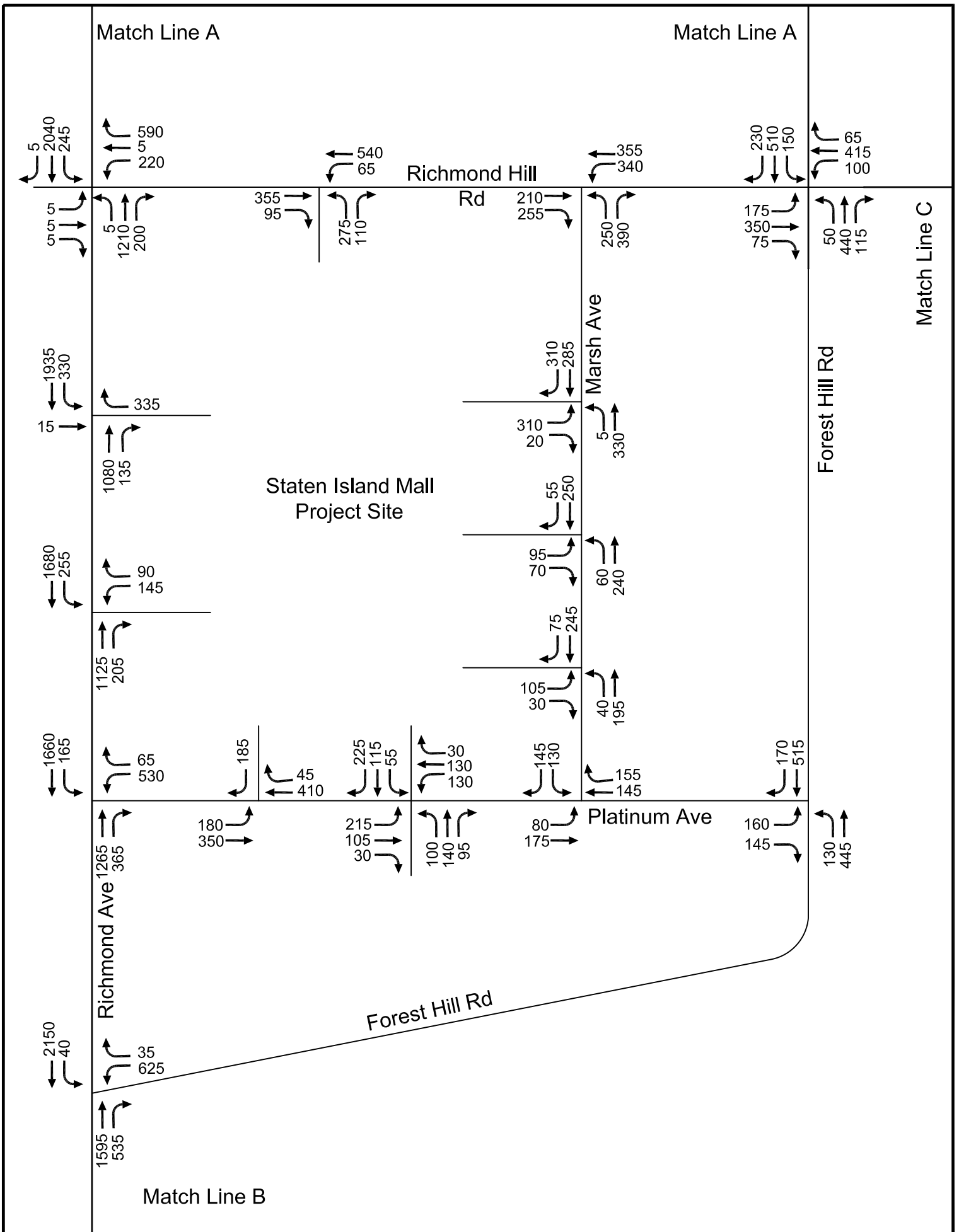


Figure 10-4a
2012 Existing Weekday PM Balanced Network

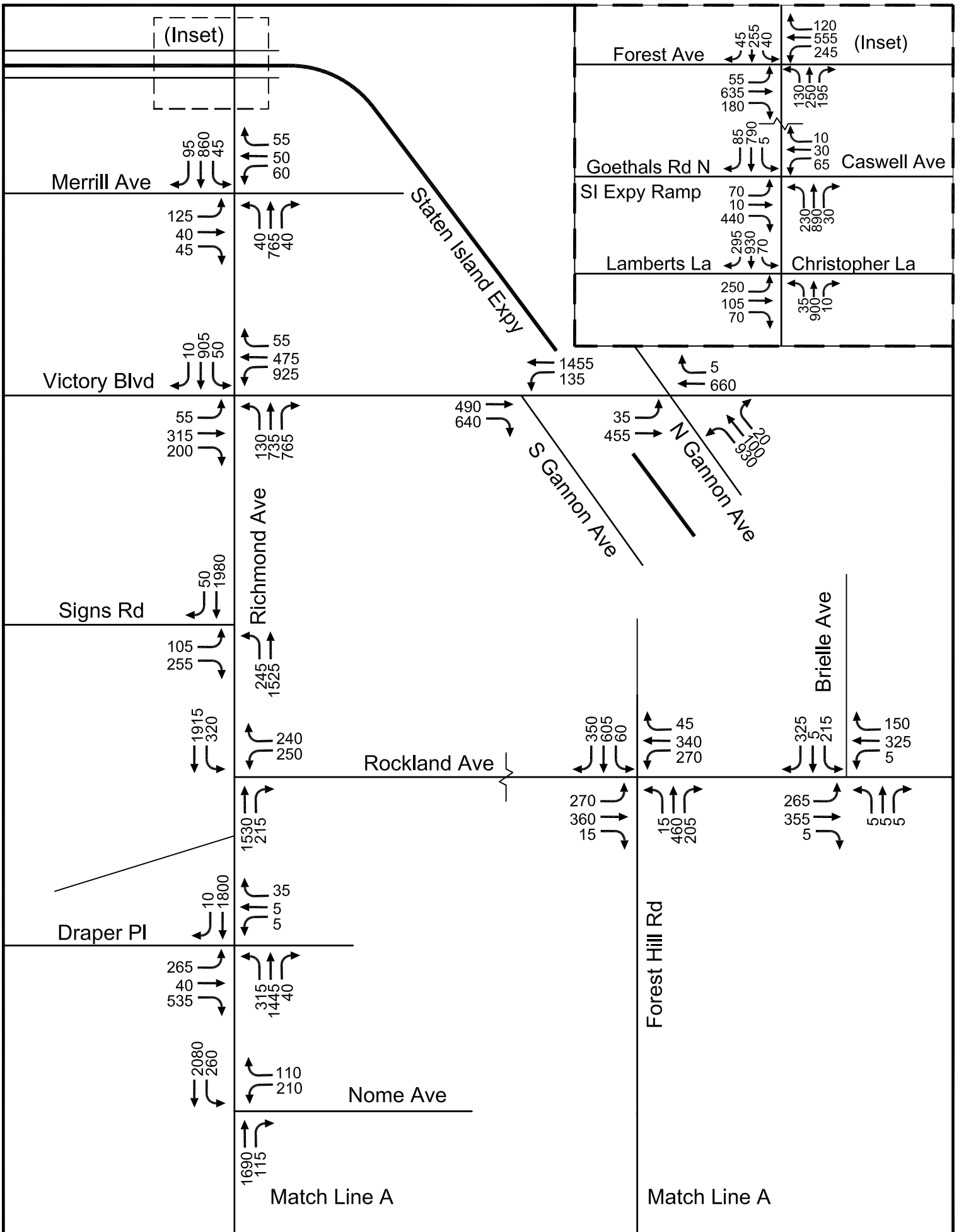


Figure 10-4b
2012 Existing Weekday PM Balanced Network

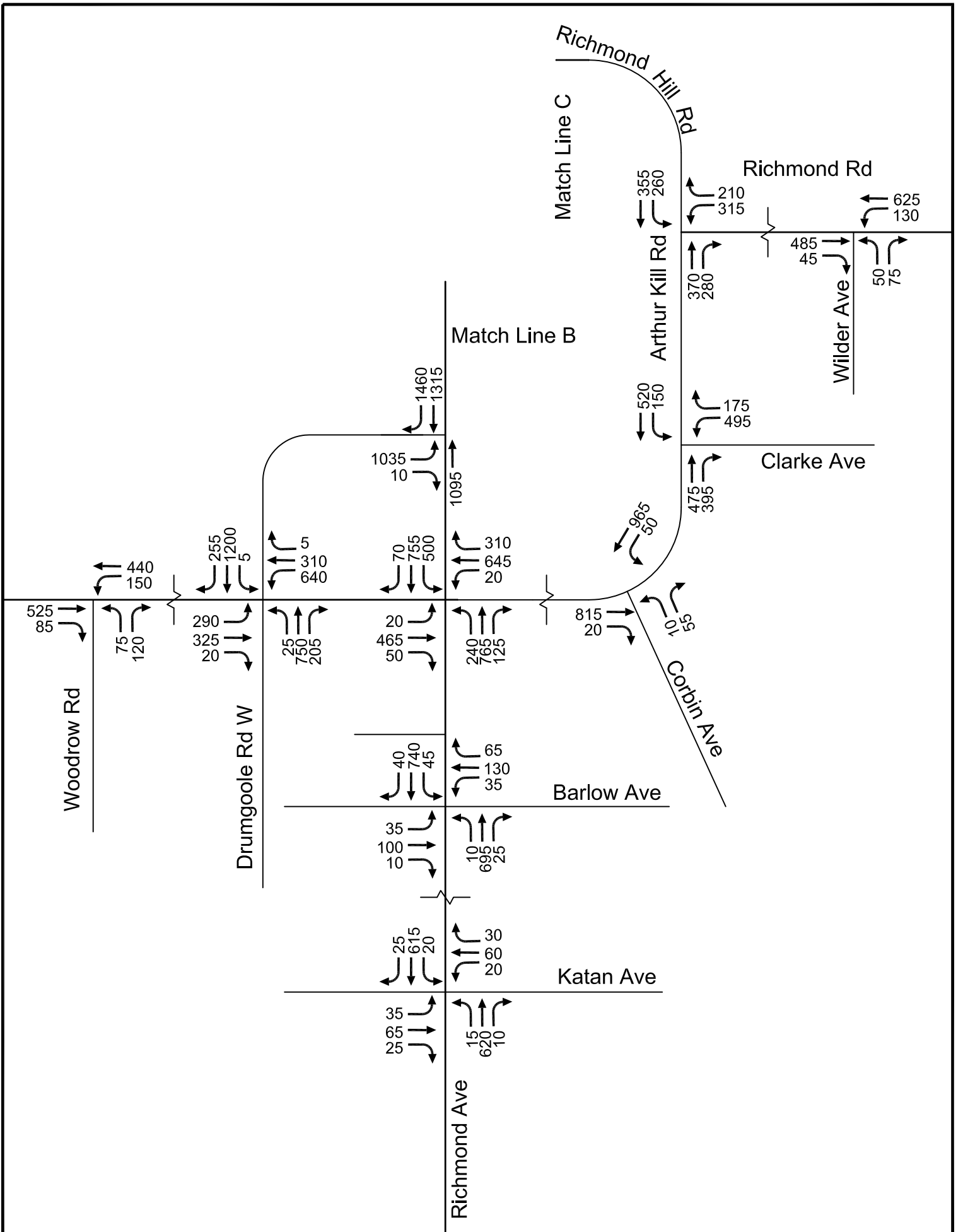


Figure 10-4c
 2012 Existing Weekday PM Balanced Network

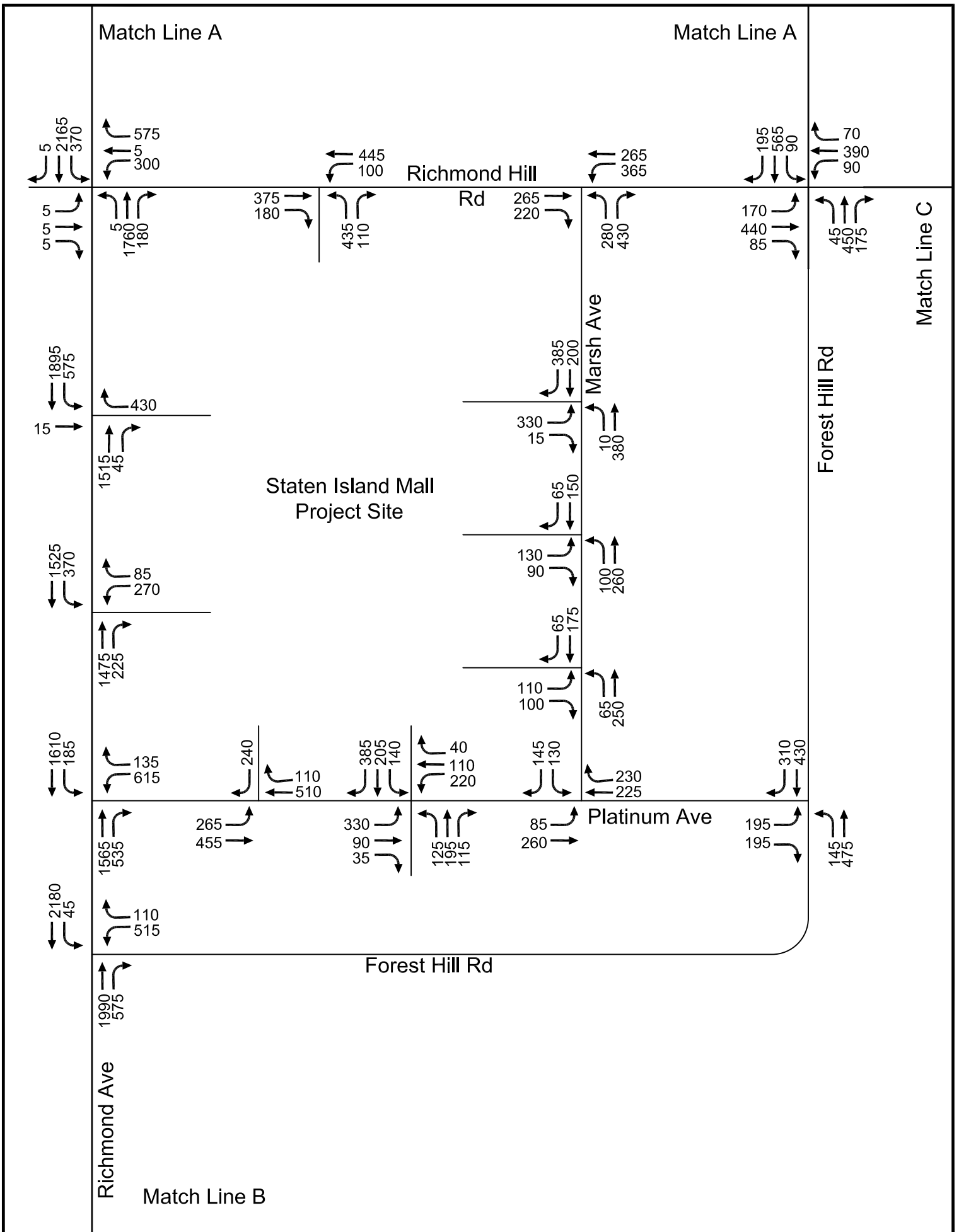


Figure 10-5a
2012 Existing Saturday Midday Balanced Network

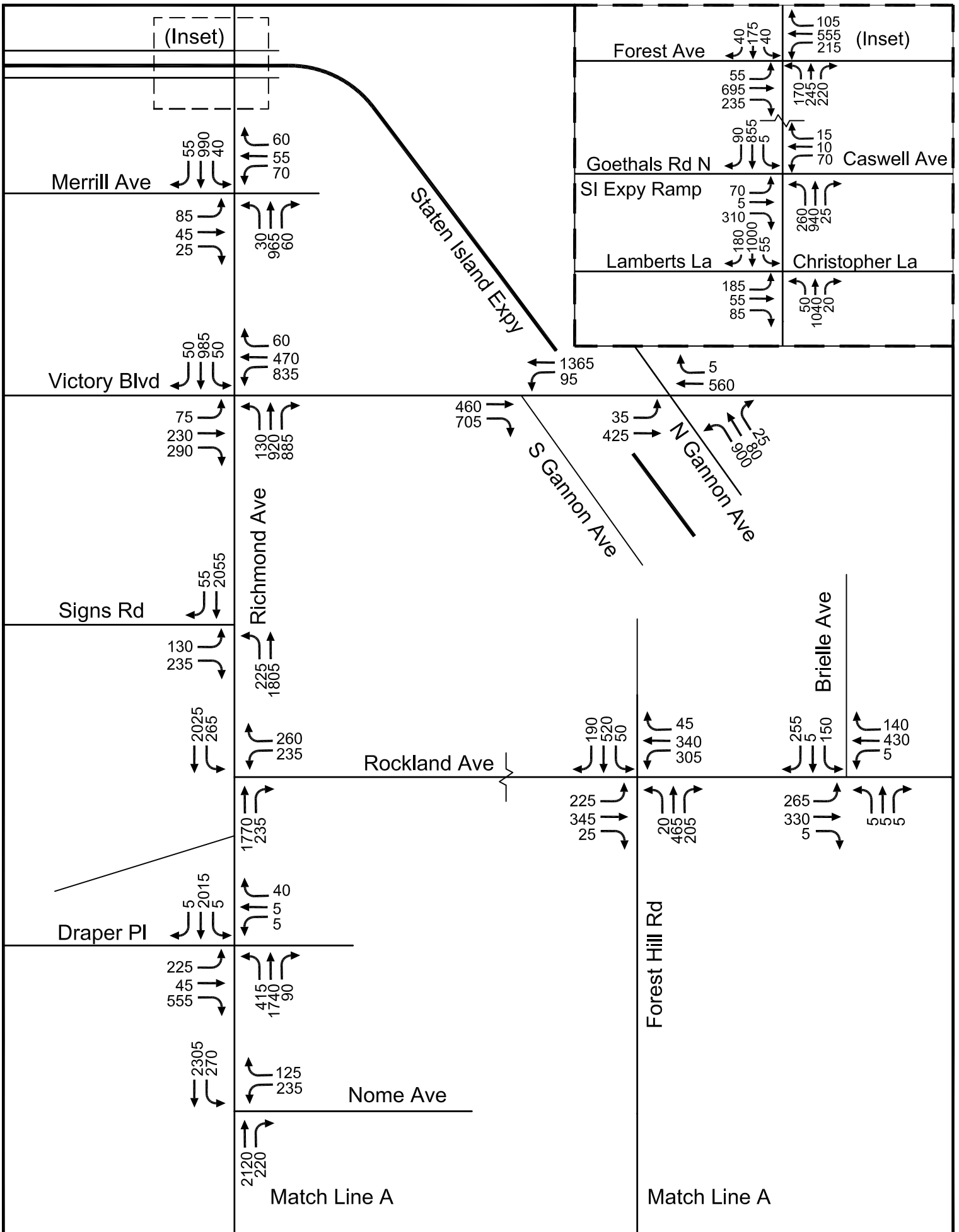


Figure 10-5b
2012 Existing Saturday Midday Balanced Network

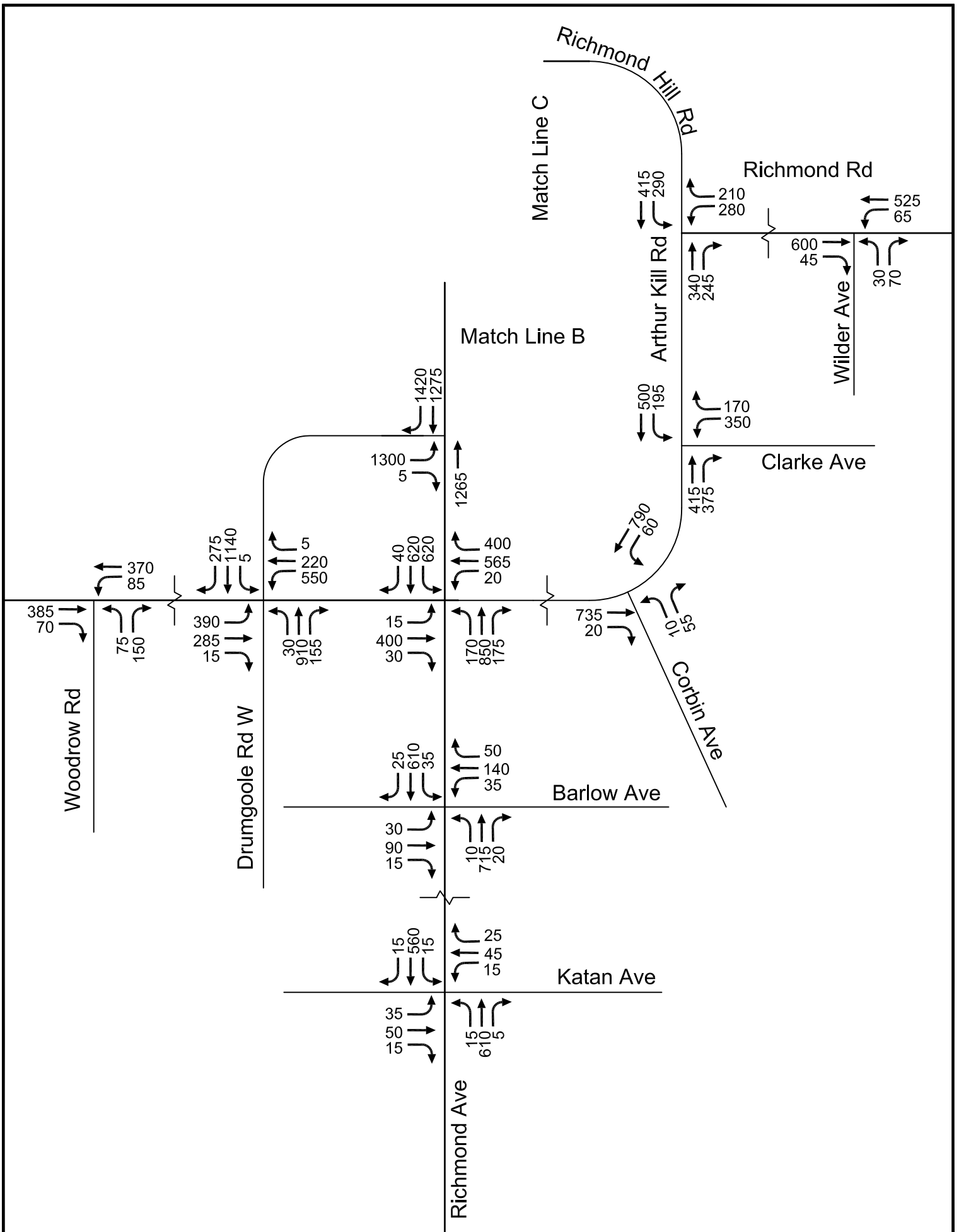


Figure 10-5c
2012 Existing Saturday Midday Balanced Network

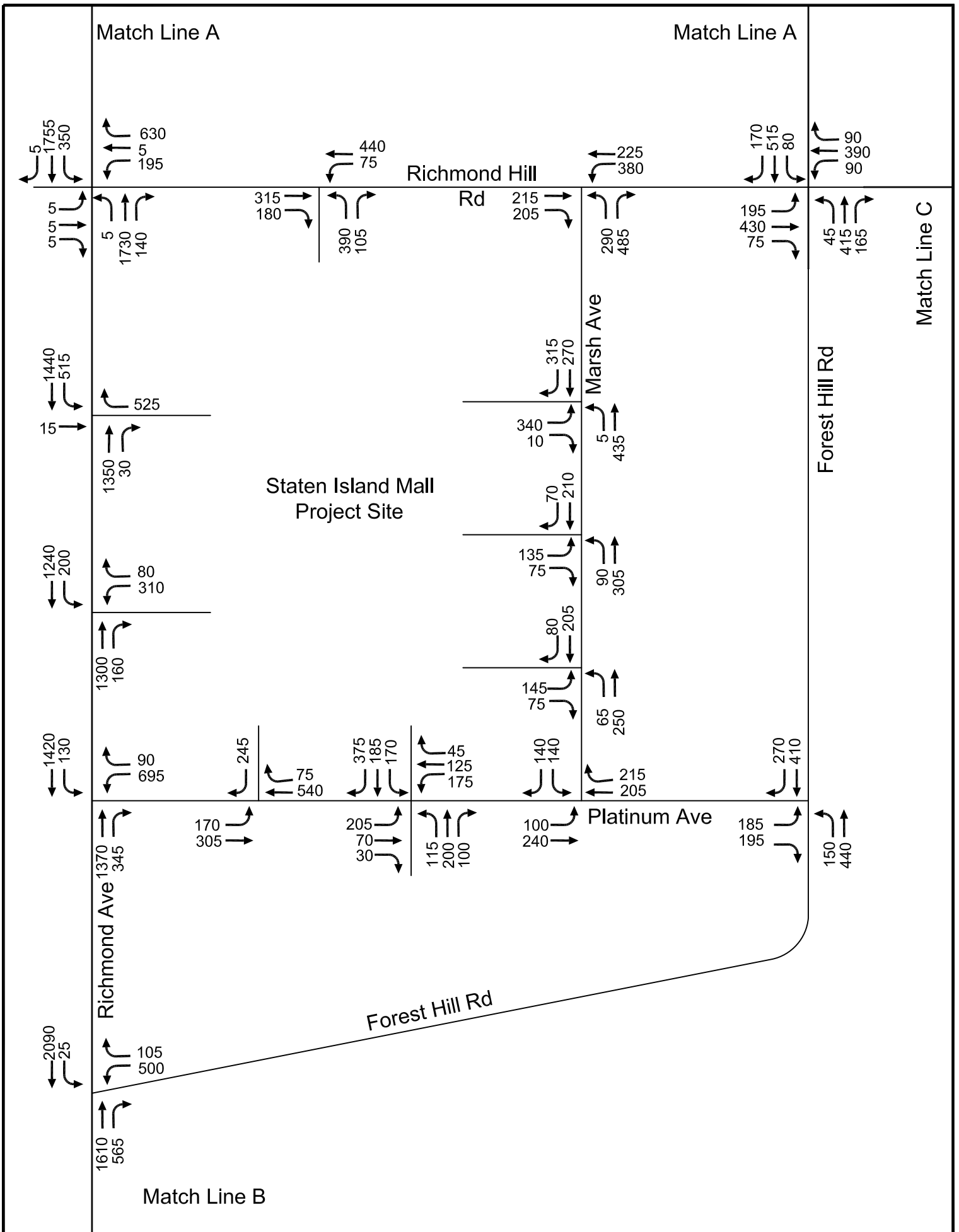


Figure 10-6a
2012 Existing Saturday PM Balanced Network

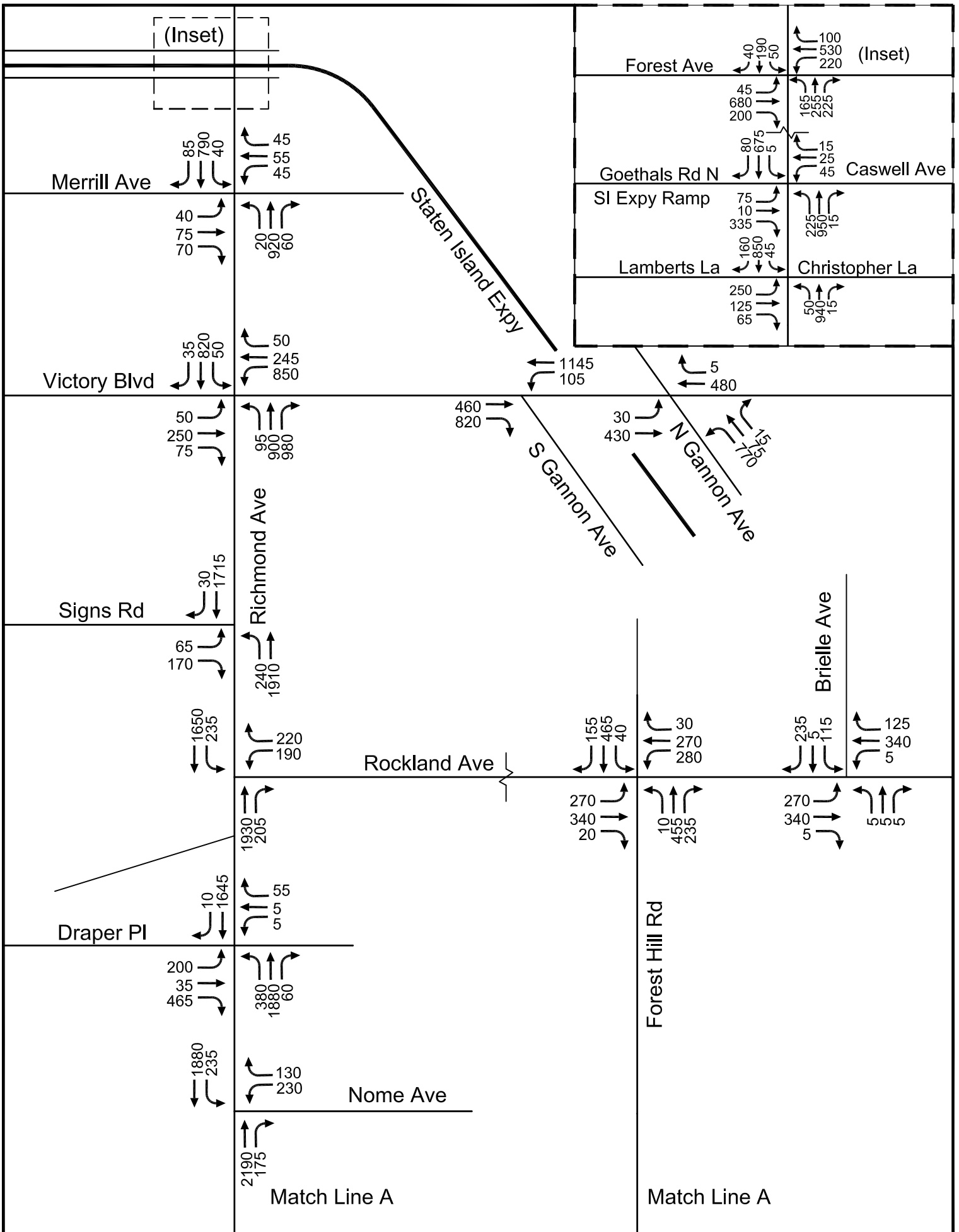


Figure 10-6b
2012 Existing Saturday PM Balanced Network

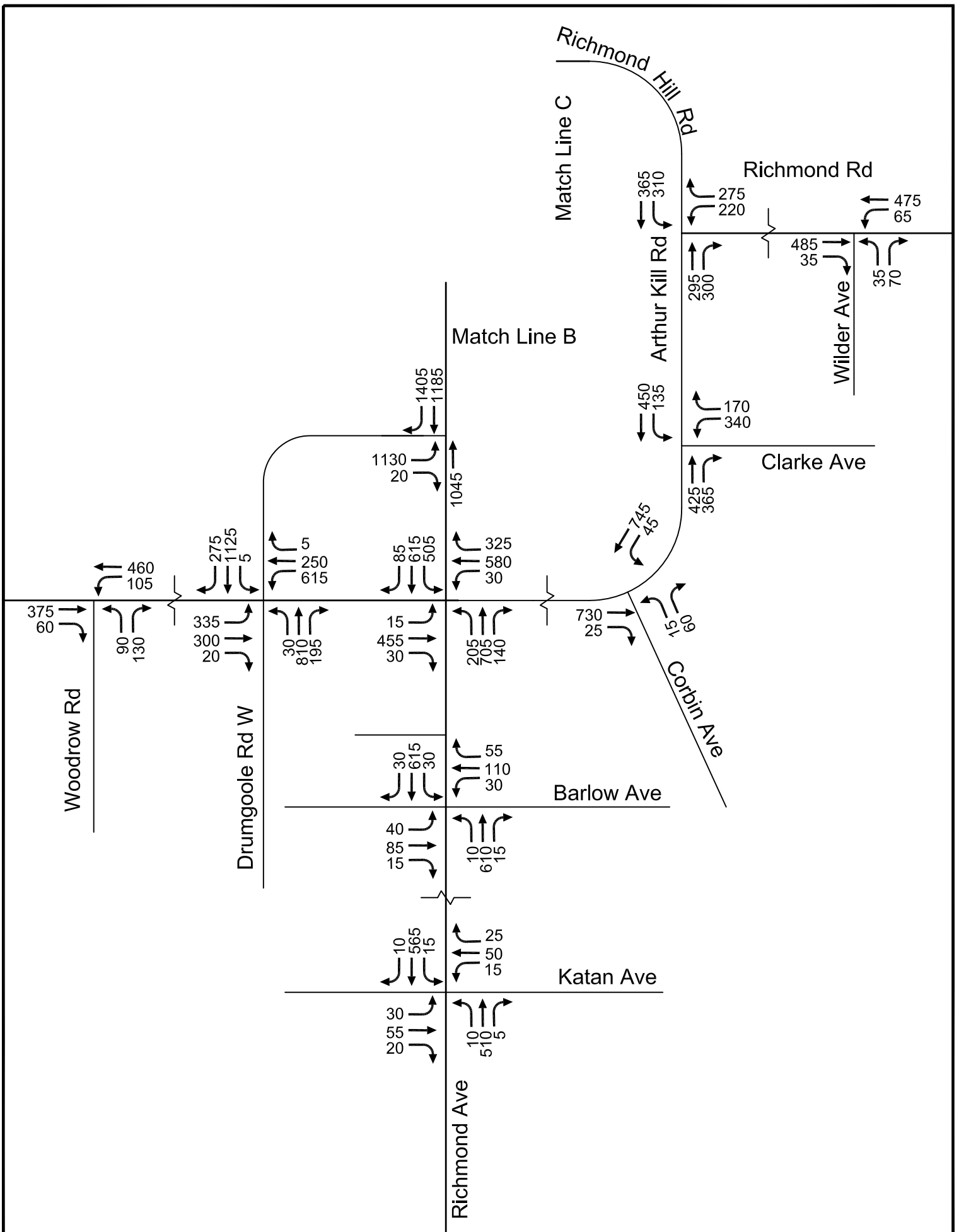


Figure 10-6c
2012 Existing Saturday PM Balanced Network

between Marsh Avenue and Forest Hill Road, and one travel lane in each direction between Forest Hill Road and Richmond Road. The NYCT S89, and X17 local bus routes operate along Richmond Hill Road between Richmond and Marsh Avenues, and the S61, S91, and X31 buses operate along Richmond Hill Road between Merrymount Street and Marsh Avenue. Parking is permitted on both sides of the street west of Forest Hill Road. There is one access/egress point to/from the mall's north side along Richmond Hill Road.

Forest Hill Road is a likely route for traffic approaching the Mall from the northeast. It runs north-south between Richmond Avenue and Willowbrook Road, where it transitions into Woolley Avenue. It has one travel lane in each direction for most of its length, but at some major intersections the street is widened to create turn bays. In the vicinity of the Mall, two-way traffic volumes along Forest Hill Road vary from 1,100 to 1,500 vph, with the highest volume occurring during the Saturday midday peak hour. Forest Hill Road is a local truck route north of Richmond Hill Road, and the S61, S91, and X31 buses operate along Forest Hill Road north of Travis Avenue. Parking is generally prohibited along Forest Hill Road.

Victory Boulevard is a major east-west thoroughfare across the entire length of Staten Island, extending from Bay Street in the northeast near the Staten Island Ferry to the West Shore Expressway and Arthur Kill. It has one travel lane in each direction for most of its length, although it widens to two lanes in each direction with a hatched median and turn bays within the study area between North Gannon Avenue and Richmond Avenue. Within the study area, the volumes vary from approximately 1,900 to 2,300 vph, with the highest volumes occurring during the weekday PM and Saturday midday peak hours. It is a local truck route for its entire length, and the S62, S92, S93, X10, and X11 run along the portion of Victory Boulevard that travels through the study area.

Arthur Kill Road is a major east-west thoroughfare connecting central Staten Island to the southwest. It runs from a dead end in the Tottenville section of Staten Island to Richmond Road in the study area, where it transitions into Richmond Hill Road. It provides the most direct link between the study area and the West Shore Expressway, although most trips between the Mall and southwestern Staten Island use the Korean War Veterans Parkway. It generally consists of one travel lane in each direction, occasionally widening for turn bays. Two-way volumes along Arthur Kill Road in the study area vary from 1,150 to 1,600 vph with the highest volumes occurring during the weekday PM peak hour. Arthur Kill Road is a local truck route through the study area. The Eltingville Transit Center sits on the southwest corner of Arthur Kill Road and Richmond Avenue. Within the study area, the S54, S56, S74, S84, X7, X8, X15, and X23 run along all or part of Arthur Kill Road.

Richmond Road is a major east-west thoroughfare connecting east and southeast Staten Island to central Staten Island. It runs from Richmond Hill Road/Arthur Kill Road to Van Duzer Street, where it transitions into Vanderbilt Avenue. It has one lane in each direction within the study area and is a local truck route as well. Two-way traffic volumes within the study area vary from 900 to 1,300 vph with the highest volumes occurring during the weekday PM peak hour. The S54, S74, S84, and X15 buses run along Richmond Road within the study area.

In addition to the main arterials, there are two collector roadways that are used for access to local streets near the Mall as well as the Mall itself. Marsh Avenue runs along the east side of the Mall and has 1-2 travel lanes in each direction between Platinum Avenue and Richmond Hill Road. Volumes vary from approximately 1,000 to 1,350 vph with the highest volumes occurring during the Saturday PM Peak hour. The S61, S89, S91, X17, and X31 buses run along the entire length of Marsh Avenue, while the S55 and S56 buses terminate along Marsh Avenue. Parking

Staten Island Mall Enlargement

regulations vary along Marsh Avenue, particularly due to the presence of a school at the north end. There are three major access/egress points to the Mall—one at the northeast corner, one at its southeast corner, and one at the midpoint of Marsh Avenue. There is also a small exit from the convenience center onto Marsh Avenue as well as a one-way truck loading facility from the convenience center near the southeast corner. Platinum Avenue is an east west collector road between Richmond Avenue and Forest Hill Road along the south side of the Mall. There are two lanes in each direction with no parking between Richmond and Marsh Avenues with the street narrowing to one lane in each direction with parking east of Marsh Avenue. Two-way volumes vary from 650 to 850 vph with the highest volumes occurring during the Saturday midday peak hour. The S55, S56, S61, S89, S91, X17, and X31 buses run along Platinum Avenue south of the Mall. There are two major access/egress points along Platinum Avenue—one at the southwest corner of the Mall and one at the south end that also provides access to the strip mall on the south side of Platinum Avenue. There is also a minor access/egress to the convenience center at the southeast corner of the Mall.

The overall traffic study area analyzed in this Environmental Impact Statement encompasses 38 intersections branching out from the Mall along Richmond Avenue, Arthur Kill Road, Richmond Road, Forest Hill Road, and Victory Boulevard.

INTERSECTION CAPACITY ANALYSIS

Table 10-9 shows the existing overall intersection levels of service during the weekday midday and PM, and Saturday midday and PM peak hours. All intersections in all peak hours operate at LOS D or better. There are eight intersections which operate at LOS D in one or more peak hours, including Richmond Hill Road at Richmond Avenue, Richmond Hill Road at Forest Hill Road, Platinum Avenue at Staten Island Mall Drive, Victory Boulevard at Richmond Avenue, Arthur Kill Road at Richmond Avenue, Arthur Kill Road at Drumgoole Road West, Arthur Kill Road at Woodrow Road, and Rockland Avenue at Forest Hill Road.

Table 10-9
Existing Intersection Level of Service Summary

| | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Midday Peak Hour | Saturday PM Peak Hour |
|---|---------------------------------|-----------------------------|----------------------------------|------------------------------|
| Number of Intersections Operating at LOS A/B/C | 36 | 32 | 33 | 34 |
| Number of Intersections Operating at LOS D | 2 | 6 | 5 | 4 |
| Number of Intersections Operating at LOS E | 0 | 0 | 0 | 0 |
| Number of Intersections Operating at LOS F | 0 | 0 | 0 | 0 |
| Number of Lane Groups Operating at LOS E/F out of Approximately 200 Lane Groups | 13 | 10 | 16 | 11 |

Table 10-10 shows the detailed volume-to-capacity ratios, delays and levels of service by lane group at each of the 38 analyzed intersections in each peak hour, and identifies those lane groups that are considered congested in one or more peak hours (i.e., lane groups operating at LOS E or F and/or with a high v/c ratio – 0.90 and above). The congested lane groups are discussed in more detail in **Table 10-11**. As shown in **Table 10-11**, there are totals of 17, 31, 31, and 17 congested lane groups during the weekday midday and PM and Saturday midday and PM peak hours respectively.

Table 10-10
2012 Existing Traffic Levels of Service

| | LANE GROUP | WEEKDAY MD PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MD PEAK HOUR | | | SATURDAY PM PEAK HOUR | | |
|---|------------|----------------------|--------|------|----------------------|--------|------|-----------------------|--------|------|-----------------------|--------|-----|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.04 | 24.7 | C | 0.05 | 24.7 | C | 0.04 | 24.7 | C | 0.04 | 24.7 | C |
| | WB - L | 0.37 | 29.6 | C | 0.37 | 28.6 | C | 0.48 | 30.4 | C | 0.35 | 27.7 | C |
| | WB - LT | 0.40 | 30.3 | C | 0.39 | 29.0 | C | 0.51 | 31.2 | C | 0.37 | 28.0 | C |
| | WB - R | 0.62 | 20.3 | C | 0.91 | 29.4 | C * | 0.92 | 33.1 | C * | 1.05 | 55.8 | E * |
| | NB - L | 0.02 | 31.5 | C | 0.02 | 27.4 | C | 0.02 | 31.4 | C | 0.02 | 31.4 | C |
| | NB - TR | 0.72 | 24.6 | C | 0.73 | 27.8 | C | 0.80 | 25.8 | C | 0.79 | 25.6 | C |
| | SB - L | 1.05 | 101.1 | F * | 0.72 | 41.9 | D | 1.05 | 92.4 | F * | 1.05 | 93.5 | F * |
| | SB - TR | 0.70 | 24.6 | C | 1.02 | 51.6 | D * | 0.91 | 31.3 | C * | 0.74 | 25.2 | C |
| 2. St Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.7 | C | 0.03 | 23.8 | C |
| | NB - TR | 0.55 | 22.7 | C | 0.54 | 22.6 | C | 0.72 | 27.0 | C | 0.67 | 26.3 | C |
| | SB - L | 0.89 | 51.6 | D | 0.71 | 37.1 | D | 1.03 | 67.0 | E * | 0.89 | 47.2 | D |
| | SB - T | 0.37 | 9.0 | A | 0.53 | 10.2 | B | 0.50 | 10.0 | A | 0.38 | 9.0 | A |
| 3. St Mall East Driveway (E-W) @ Richmond Avenue (N-S) | WB - L | 0.24 | 21.7 | C | 0.16 | 20.9 | C | 0.32 | 22.7 | C | 0.35 | 23.0 | C |
| | NB - T | 0.40 | 12.8 | B | 0.38 | 12.6 | B | 0.49 | 13.6 | B | 0.41 | 12.8 | B |
| | SB - L | 0.13 | 20.5 | C | 0.27 | 21.8 | C | 0.35 | 22.8 | C | 0.19 | 21.1 | C |
| | SB - T | 0.38 | 12.6 | B | 0.50 | 13.8 | B | 0.47 | 13.4 | B | 0.36 | 12.4 | B |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.55 | 31.6 | C | 0.74 | 36.7 | D | 0.79 | 38.1 | D | 0.86 | 42.5 | D |
| | WB - R | 0.56 | 35.0 | C | 0.22 | 27.8 | C | 0.39 | 30.6 | C | 0.27 | 28.4 | C |
| | NB - T | 0.56 | 19.5 | B | 0.62 | 19.0 | B | 0.76 | 25.5 | C | 0.67 | 21.0 | C |
| | NB - R | 0.32 | 17.2 | B | 0.30 | 15.7 | B | 0.40 | 18.0 | B | 0.25 | 16.2 | B |
| | SB - L | 0.70 | 48.5 | D | 0.69 | 52.1 | D | 0.52 | 42.7 | D | 0.42 | 40.5 | D |
| | SB - T | 0.34 | 8.4 | A | 0.42 | 9.0 | A | 0.41 | 8.9 | A | 0.36 | 8.5 | A |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - L | 0.54 | 30.4 | C | 0.81 | 35.2 | D | 0.62 | 30.3 | C | 0.59 | 30.2 | C |
| | WB - LR | 0.66 | 34.0 | C | 0.94 | 45.5 | D * | 0.97 | 53.5 | D * | 0.92 | 47.2 | D * |
| | NB - T | 0.78 | 23.2 | C | 0.75 | 22.3 | C | 0.99 | 34.9 | C * | 0.80 | 23.3 | C |
| | NB - R | 0.32 | 17.0 | B | 0.40 | 17.9 | B | 0.45 | 18.1 | B | 0.44 | 18.4 | B |
| | SB - L | 0.30 | 45.0 | D | 0.46 | 47.1 | D | 0.51 | 49.2 | D | 0.28 | 43.7 | D |
| | SB - T | 0.66 | 13.9 | B | 0.82 | 16.7 | B | 0.80 | 16.3 | B | 0.76 | 15.5 | B |
| 6. Richmond Hill Road (E-W) @ St Mall North Driveway (N-S) | EB - TR | 0.27 | 11.3 | B | 0.30 | 11.6 | B | 0.31 | 11.7 | B | 0.26 | 11.3 | B |
| | WB - LT | 0.37 | 12.5 | B | 0.46 | 13.3 | B | 0.45 | 13.4 | B | 0.38 | 12.5 | B |
| | NB - L | 0.41 | 24.5 | C | 0.51 | 26.4 | C | 0.77 | 35.2 | D | 0.71 | 32.4 | C |
| | NB - R | 0.12 | 20.6 | C | 0.24 | 22.1 | C | 0.24 | 22.2 | C | 0.23 | 22.0 | C |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | EB - T | 0.43 | 24.7 | C | 0.38 | 23.7 | C | 0.44 | 24.7 | C | 0.38 | 23.9 | C |
| | EB - R | 0.42 | 25.4 | C | 0.72 | 34.0 | C | 0.54 | 28.0 | C | 0.57 | 28.8 | C |
| | WB - L | 0.46 | 7.9 | A | 0.46 | 7.7 | A | 0.52 | 8.7 | A | 0.53 | 8.6 | A |
| | WB - T | 0.22 | 5.1 | A | 0.31 | 5.8 | A | 0.23 | 5.2 | A | 0.19 | 5.0 | A |
| | NB - L | 0.64 | 40.0 | D | 0.76 | 44.8 | D | 0.91 | 56.3 | E * | 0.88 | 51.4 | D |
| | NB - R | 0.54 | 15.1 | B | 0.52 | 14.7 | B | 0.57 | 15.3 | B | 0.65 | 16.8 | B |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | EB - L | 0.43 | 23.3 | C | 0.48 | 24.9 | C | 0.45 | 23.8 | C | 0.52 | 25.4 | C |
| | EB - TR | 0.59 | 27.3 | C | 0.51 | 24.3 | C | 0.63 | 27.0 | C | 0.59 | 26.0 | C |
| | WB - LTR | 1.05 | 67.1 | E * | 1.05 | 65.8 | E * | 1.05 | 64.1 | E * | 1.05 | 64.7 | E * |
| | NB - L | 0.17 | 46.8 | D | 0.29 | 48.7 | D | 0.23 | 47.5 | D | 0.23 | 47.7 | D |
| | NB - TR | 0.90 | 44.4 | D * | 0.96 | 49.9 | D * | 1.05 | 65.8 | E * | 1.01 | 57.0 | E * |
| | SB - L | 0.51 | 44.5 | D | 0.77 | 51.5 | D | 0.52 | 50.2 | D | 0.44 | 48.0 | D |
| SB - TR | 1.05 | 67.6 | E * | 1.05 | 64.3 | E * | 1.05 | 64.3 | E * | 1.05 | 65.8 | E * | |
| 9. Platinum Avenue (E-W) @ St Mall Southwest Driveway (N-S) | EB - DefL | 0.22 | 1.0 | A | 0.19 | 0.7 | A | 0.26 | 1.4 | A | 0.17 | 1.1 | A |
| | EB - T | 0.25 | 0.3 | A | 0.21 | 0.2 | A | 0.27 | 0.3 | A | 0.18 | 0.2 | A |
| | WB - TR | 0.31 | 11.6 | B | 0.27 | 11.2 | B | 0.35 | 11.8 | B | 0.35 | 11.9 | B |
| | SB - R | 0.38 | 24.1 | C | 0.35 | 23.7 | C | 0.44 | 25.0 | C | 0.44 | 25.2 | C |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L | 0.57 | 20.2 | C | 0.46 | 17.5 | B | 0.66 | 23.0 | C | 0.49 | 18.0 | B |
| | EB - TR | 0.10 | 12.0 | B | 0.10 | 12.0 | B | 0.09 | 11.9 | B | 0.07 | 11.8 | B |
| | WB - L | 0.33 | 15.1 | B | 0.30 | 14.9 | B | 0.44 | 16.9 | B | 0.33 | 15.0 | B |
| | WB - TR | 0.12 | 12.1 | B | 0.13 | 12.2 | B | 0.11 | 12.0 | B | 0.13 | 12.2 | B |
| | NB - LTR | 0.96 | 62.7 | E * | 0.84 | 40.8 | D | 1.05 | 85.0 | F * | 1.05 | 84.5 | F * |
| | SB - LTR | 0.51 | 22.7 | C | 0.39 | 20.8 | C | 0.70 | 27.0 | C | 0.73 | 28.0 | C |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | EB - LT | 0.44 | 24.5 | C | 0.40 | 24.0 | C | 0.55 | 26.0 | C | 0.56 | 26.2 | C |
| | WB - T | 0.31 | 22.7 | C | 0.22 | 21.6 | C | 0.37 | 23.5 | C | 0.30 | 22.6 | C |
| | SB - L | 0.51 | 43.3 | D | 0.66 | 49.6 | D | 0.60 | 45.8 | D | 0.61 | 46.3 | D |
| | SB - R | 0.15 | 10.6 | B | 0.20 | 11.0 | B | 0.21 | 11.1 | B | 0.19 | 10.9 | B |
| 12. Platinum Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.31 | 23.0 | C | 0.35 | 27.1 | C | 0.39 | 24.1 | C | 0.35 | 23.5 | C |
| | NB - L | 0.39 | 14.6 | B | 0.39 | 12.1 | B | 0.41 | 15.0 | B | 0.43 | 15.3 | B |
| | NB - T | 0.41 | 13.2 | B | 0.47 | 11.3 | B | 0.51 | 14.5 | B | 0.52 | 14.7 | B |
| | SB - T | 0.43 | 13.5 | B | 0.49 | 11.6 | B | 0.45 | 13.7 | B | 0.45 | 13.6 | B |
| | SB - R | 0.14 | 10.4 | B | 0.12 | 8.0 | A | 0.21 | 11.1 | B | 0.19 | 10.8 | B |
| 13. St Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.18 | 14.1 | B | 0.28 | 18.3 | C | 0.40 | 21.4 | C | 0.45 | 25.2 | D |
| | EB - R | 0.08 | 9.7 | A | 0.10 | 10.2 | B | 0.12 | 9.8 | A | 0.11 | 10.0 | B |
| | NB - L | 0.05 | 7.9 | A | 0.06 | 8.2 | A | 0.09 | 8.0 | A | 0.09 | 8.1 | A |

Table 10-10
2012 Existing Traffic Levels of Service

| | LANE GROUP | WEEKDAY MD PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MD PEAK HOUR | | | SATURDAY PM PEAK HOUR | | |
|---|---|----------------------|--------|------|----------------------|--------|------|-----------------------|--------|------|-----------------------|--------|------|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | 0.61 | 29.2 | C | 0.55 | 27.4 | C | 0.60 | 28.8 | C | 0.61 | 29.1 | C |
| | EB - R | 0.04 | 19.7 | B | 0.05 | 19.9 | B | 0.04 | 19.7 | B | 0.02 | 19.6 | B |
| | NB - L | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.03 | 9.6 | A | 0.02 | 9.5 | A |
| | NB - T | 0.27 | 11.6 | B | 0.39 | 13.0 | B | 0.48 | 14.2 | B | 0.50 | 14.4 | B |
| | SB - TR | 0.61 | 16.3 | B | 0.66 | 17.6 | B | 0.53 | 15.0 | B | 0.58 | 15.7 | B |
| 15. Staten Island Mall Drive (E-W) @ Marsh Avenue (N-S) | EB - L | 0.19 | 25.6 | C | 0.24 | 26.2 | C | 0.20 | 21.4 | C | 0.25 | 22.0 | C |
| | EB - R | 0.12 | 24.8 | C | 0.08 | 24.4 | C | 0.20 | 21.6 | C | 0.15 | 20.9 | C |
| | NB - L | 0.21 | 8.6 | A | 0.10 | 7.6 | A | 0.15 | 10.8 | B | 0.17 | 11.0 | B |
| | NB - T | 0.14 | 7.7 | A | 0.22 | 8.4 | A | 0.28 | 11.7 | B | 0.27 | 11.7 | B |
| | SB - TR | 0.18 | 8.0 | A | 0.29 | 8.9 | A | 0.22 | 11.1 | B | 0.25 | 11.3 | B |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.29 | 37.4 | D | 0.38 | 39.2 | D | 0.34 | 38.3 | D | 0.41 | 39.9 | D |
| | WB - LTR | 0.51 | 44.9 | D | 0.61 | 49.0 | D | 0.54 | 45.9 | D | 0.52 | 45.2 | D |
| | NB - L | 0.51 | 15.3 | B | 0.63 | 24.3 | C | 0.69 | 27.5 | C | 0.57 | 15.8 | B |
| | NB - TR | 0.48 | 14.1 | B | 0.54 | 14.8 | B | 0.54 | 14.8 | B | 0.57 | 15.1 | B |
| | SB - L | 0.03 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.3 | C | 0.04 | 20.5 | C |
| | SB - TR | 0.81 | 30.8 | C | 0.90 | 33.3 | C | 0.96 | 35.0 | D | 0.75 | 29.5 | C |
| 17. Lamberts Lane/ Christopher Lane (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.47 | 25.5 | C | 0.66 | 29.3 | C | 0.44 | 24.9 | C | 0.75 | 31.6 | C |
| | EB - R | 0.17 | 21.3 | C | 0.20 | 21.5 | C | 0.21 | 21.8 | C | 0.16 | 21.0 | C |
| | NB - L | 0.25 | 13.9 | B | 0.27 | 15.4 | B | 0.38 | 18.3 | B | 0.28 | 14.5 | B |
| | NB - TR | 0.42 | 13.2 | B | 0.47 | 13.8 | B | 0.51 | 14.3 | B | 0.49 | 14.0 | B |
| | SB - L | 0.22 | 12.9 | B | 0.32 | 14.8 | B | 0.39 | 17.4 | B | 0.28 | 14.7 | B |
| | SB - TR | 0.47 | 13.8 | B | 0.60 | 15.5 | B | 0.57 | 15.0 | B | 0.49 | 14.1 | B |
| 18. Merrill Avenue/Morani Street (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.35 | 24.1 | C | 0.70 | 32.8 | C | 0.46 | 26.2 | C | 0.46 | 25.9 | C |
| | WB - LTR | 0.40 | 24.8 | C | 0.41 | 24.9 | C | 0.47 | 25.8 | C | 0.34 | 23.6 | C |
| | NB - L | 0.28 | 14.1 | B | 0.23 | 13.5 | B | 0.20 | 12.9 | B | 0.11 | 11.2 | B |
| | NB - TR | 0.52 | 14.6 | B | 0.53 | 14.6 | B | 0.64 | 16.2 | B | 0.61 | 15.8 | B |
| | SB - L | 0.12 | 11.3 | B | 0.22 | 12.7 | B | 0.29 | 14.7 | B | 0.26 | 14.2 | B |
| | SB - TR | 0.54 | 14.8 | B | 0.62 | 16.0 | B | 0.64 | 16.2 | B | 0.56 | 15.1 | B |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | 0.25 | 26.7 | C | 0.34 | 28.8 | C | 0.48 | 32.0 | C | 0.23 | 26.1 | C |
| | EB - T | 0.56 | 31.2 | C | 0.63 | 32.1 | C | 0.46 | 28.3 | C | 0.54 | 30.4 | C |
| | EB - R | 0.28 | 26.5 | C | 0.64 | 34.4 | C | 0.88 | 49.0 | D | 0.22 | 25.6 | C |
| | WB - L | 0.98 | 50.1 | D | 1.01 | 34.3 | C | 1.05 | 73.9 | E | 1.04 | 64.1 | E |
| | WB - TR | 0.49 | 18.2 | B | 0.74 | 20.1 | C | 0.69 | 20.9 | C | 0.42 | 17.1 | B |
| | NB - L | 0.50 | 36.0 | D | 0.53 | 37.2 | D | 0.52 | 36.5 | D | 0.40 | 32.9 | C |
| | NB - T | 0.81 | 33.2 | C | 0.89 | 38.2 | D | 0.91 | 36.1 | D | 0.89 | 35.6 | D |
| | SB - L | 0.30 | 29.6 | C | 0.21 | 29.3 | C | 0.22 | 30.2 | C | 0.21 | 30.2 | C |
| | SB - TR | 0.78 | 31.9 | C | 0.94 | 39.8 | D | 0.95 | 36.9 | D | 0.75 | 31.4 | C |
| | 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.05 | 66.9 | E | 1.05 | 66.5 | E | 1.05 | 66.9 | E | 0.79 | 43.3 |
| NB - L | | 0.88 | 63.3 | E | 0.98 | 75.1 | E | 0.87 | 59.5 | E | 0.93 | 64.9 | E |
| NB - T | | 0.53 | 8.3 | A | 0.52 | 8.0 | A | 0.59 | 8.8 | A | 0.63 | 9.2 | A |
| SB - TR | | 0.74 | 22.1 | C | 1.04 | 44.4 | D | 0.98 | 28.4 | C | 0.85 | 24.2 | C |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.61 | 35.8 | D | 0.64 | 36.7 | D | 0.58 | 34.6 | C | 0.47 | 32.1 | C |
| | WB - R | 0.48 | 18.9 | B | 0.38 | 14.3 | B | 0.49 | 18.9 | B | 0.42 | 17.9 | B |
| | NB - TR | 0.68 | 22.6 | C | 0.78 | 27.4 | C | 0.73 | 23.5 | C | 0.81 | 24.8 | C |
| | SB - L | 0.88 | 64.0 | E | 0.94 | 59.5 | E | 1.05 | 94.2 | F | 0.95 | 73.9 | E |
| | SB - T | 0.51 | 9.0 | A | 0.70 | 11.2 | B | 0.69 | 11.0 | B | 0.57 | 9.6 | A |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.05 | 95.7 | F | 1.05 | 63.0 | E | 0.97 | 46.6 | D | 0.78 | 40.0 | D |
| | WB - LTR | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.17 | 26.2 | C |
| | NB - L | 1.05 | 85.7 | F | 1.03 | 77.8 | E | 1.05 | 76.3 | E | 1.04 | 72.7 | E |
| | NB - TR | 0.40 | 9.2 | A | 0.41 | 9.3 | A | 0.47 | 9.7 | A | 0.51 | 10.0 | B |
| | SB - TR | 0.71 | 28.8 | C | 0.84 | 28.9 | C | 0.98 | 35.0 | C | 0.83 | 30.6 | C |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.79 | 45.0 | D | 0.76 | 42.5 | D | 0.98 | 72.3 | E | 0.81 | 46.2 | D |
| | NB - TR | 0.70 | 22.5 | C | 0.85 | 30.5 | C | 0.86 | 26.4 | C | 0.88 | 27.7 | C |
| | SB - L | 1.00 | 93.3 | F | 0.84 | 51.2 | D | 1.05 | 100.9 | F | 1.05 | 103.3 | F |
| | SB - T | 0.40 | 7.9 | A | 0.53 | 9.0 | A | 0.54 | 9.1 | A | 0.45 | 8.3 | A |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | 0.66 | 22.7 | C | 0.69 | 24.0 | C | 0.88 | 27.3 | C | 0.74 | 24.1 | C |
| | EB - LR | 0.71 | 24.1 | C | 0.74 | 25.7 | C | 0.93 | 31.5 | C | 0.81 | 27.1 | C |
| | NB - T | 0.71 | 23.3 | C | 0.76 | 23.5 | C | 0.87 | 27.9 | C | 0.72 | 23.4 | C |
| | SB - T | 0.77 | 23.9 | C | 0.90 | 26.3 | C | 0.89 | 26.5 | C | 0.84 | 25.4 | C |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | EB - L | 0.13 | 22.0 | C | 0.31 | 25.6 | C | 0.23 | 25.8 | C | 0.21 | 24.7 | C |
| | EB - TR | 0.41 | 23.8 | C | 0.45 | 22.8 | C | 0.38 | 23.5 | C | 0.46 | 24.3 | C |
| | WB - L | 0.18 | 22.4 | C | 0.11 | 20.0 | B | 0.10 | 21.1 | C | 0.15 | 22.0 | C |
| | WB - T | 0.76 | 33.6 | C | 0.99 | 53.3 | D | 0.95 | 46.8 | D | 0.95 | 48.1 | D |
| | WB - R | 0.42 | 12.8 | B | 0.40 | 11.2 | B | 0.51 | 13.7 | B | 0.43 | 12.6 | B |
| | NB - L | 0.32 | 34.0 | C | 0.50 | 35.4 | D | 0.33 | 33.5 | C | 0.43 | 34.9 | C |
| | NB - TR | 0.79 | 31.8 | C | 0.97 | 43.8 | D | 1.02 | 49.1 | D | 0.88 | 34.3 | C |
| | SB - L | 0.97 | 60.1 | E | 1.01 | 62.0 | E | 1.05 | 71.2 | E | 0.93 | 50.1 | D |
| | SB - TR | 0.59 | 26.8 | C | 0.82 | 31.7 | C | 0.60 | 26.4 | C | 0.68 | 28.0 | C |
| | 26. Barlow Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.19 | 21.4 | C | 0.39 | 28.1 | C | 0.29 | 22.8 | C | 0.28 | 22.8 |
| WB - LTR | | 0.34 | 23.5 | C | 0.62 | 34.0 | C | 0.45 | 25.5 | C | 0.43 | 25.0 | C |
| NB - LTR | | 0.46 | 13.9 | B | 0.49 | 11.6 | B | 0.52 | 14.6 | B | 0.45 | 13.7 | B |
| SB - LTR | | 0.46 | 13.9 | B | 0.51 | 11.9 | B | 0.47 | 14.0 | B | 0.46 | 13.8 | B |

Table 10-10
2012 Existing Traffic Levels of Service

| | LANE GROUP | WEEKDAY MD PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MD PEAK HOUR | | | SATURDAY PM PEAK HOUR | | |
|---|------------|----------------------|--------|-----|----------------------|--------|-----|-----------------------|--------|-----|-----------------------|--------|-----|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.22 | 22.0 | C | 0.35 | 27.4 | C | 0.23 | 22.0 | C | 0.24 | 22.1 | C |
| | WB - LTR | 0.17 | 21.2 | C | 0.33 | 27.2 | C | 0.20 | 21.6 | C | 0.21 | 21.8 | C |
| | NB - LTR | 0.38 | 13.0 | B | 0.43 | 11.0 | B | 0.42 | 13.4 | B | 0.36 | 12.7 | B |
| | SB - LTR | 0.79 | 21.5 | C | 0.85 | 20.2 | C | 0.82 | 22.2 | C | 0.85 | 22.8 | C |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.75 | 30.5 | C | 0.91 | 35.1 | D * | 0.87 | 33.4 | C | 0.89 | 34.6 | C |
| | NB - T | 0.66 | 28.8 | C | 0.66 | 27.3 | C | 0.60 | 27.2 | C | 0.54 | 25.9 | C |
| | NB - R | 0.26 | 3.8 | A | 0.30 | 3.8 | A | 0.27 | 3.8 | A | 0.31 | 4.0 | A |
| | SB - L | 0.60 | 15.8 | B | 0.58 | 15.5 | B | 0.62 | 15.6 | B | 0.57 | 14.2 | B |
| | SB - T | 0.43 | 14.1 | B | 0.46 | 14.6 | B | 0.56 | 16.1 | B | 0.49 | 14.9 | B |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | 0.60 | 24.7 | C | 0.95 | 34.2 | C * | 0.74 | 27.6 | C | 0.77 | 28.2 | C |
| | NB - T | 0.75 | 33.1 | C | 0.83 | 37.1 | D | 0.72 | 31.8 | C | 0.71 | 31.3 | C |
| | NB - R | 0.33 | 3.4 | A | 0.39 | 3.6 | A | 0.37 | 3.6 | A | 0.35 | 3.5 | A |
| | SB - L | 0.45 | 15.5 | B | 0.50 | 17.2 | B | 0.54 | 16.3 | B | 0.37 | 14.0 | B |
| | SB - T | 0.56 | 18.0 | B | 0.67 | 20.1 | C | 0.62 | 18.6 | B | 0.62 | 19.0 | B |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | WB - LT | 0.08 | 10.5 | B | 0.08 | 10.9 | B | 0.10 | 10.5 | B | 0.07 | 10.2 | B |
| | NB - LR | 0.40 | 40.3 | E * | 0.50 | 48.6 | E * | 0.36 | 31.8 | D | 0.41 | 33.8 | D |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L | 0.57 | 19.2 | B | 0.64 | 20.9 | C | 0.76 | 23.1 | C | 0.70 | 21.3 | C |
| | EB - TR | 0.76 | 41.5 | D | 0.91 | 49.9 | D * | 0.70 | 37.8 | D | 0.80 | 41.6 | D |
| | WB - L | 0.53 | 18.3 | B | 0.69 | 21.8 | C | 0.62 | 18.8 | B | 0.72 | 20.7 | C |
| | WB - TR | 0.28 | 29.7 | C | 0.43 | 30.8 | C | 0.35 | 30.1 | C | 0.37 | 30.4 | C |
| | NB - L | 0.15 | 20.0 | B | 0.39 | 30.3 | C | 0.41 | 32.6 | C | 0.46 | 36.1 | D |
| | NB - TR | 0.67 | 23.5 | C | 0.68 | 22.4 | C | 0.78 | 26.8 | C | 0.76 | 26.0 | C |
| | SB - LTR | 0.89 | 27.5 | C | 1.05 | 50.0 | D * | 1.05 | 52.6 | D * | 1.05 | 52.8 | D * |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | 0.69 | 20.0 | C | 0.86 | 29.6 | C | 0.69 | 19.8 | B | 0.68 | 19.6 | B |
| | WB - LT | 0.59 | 16.4 | B | 1.05 | 48.9 | D * | 0.63 | 16.9 | B | 0.90 | 24.1 | C * |
| | NB - L | 0.09 | 20.3 | C | 0.16 | 21.1 | C | 0.13 | 20.7 | C | 0.19 | 21.4 | C |
| | NB - R | 0.26 | 22.6 | C | 0.33 | 23.9 | C | 0.40 | 25.0 | C | 0.33 | 23.7 | C |
| 33. Victory Boulevard (E-W) @ South Gannon Avenue (SB) (Unsignalized) | WB - L | 0.13 | 9.4 | A | 0.15 | 9.2 | A | 0.11 | 8.7 | A | 0.11 | 8.8 | A |
| | SB - L | 0.19 | 11.9 | B | 0.23 | 12.2 | B | 0.18 | 11.9 | B | 0.20 | 12.9 | B |
| 34. Victory Boulevard (E-W) @ North Gannon Avenue (NB) | EB - L | 0.18 | 26.8 | C | 0.28 | 30.3 | C | 0.20 | 27.6 | C | 0.15 | 26.2 | C |
| | EB - T | 0.46 | 29.4 | C | 0.38 | 28.1 | C | 0.34 | 27.6 | C | 0.36 | 27.7 | C |
| | WB - TR | 0.44 | 29.0 | C | 0.57 | 31.3 | C | 0.49 | 29.8 | C | 0.40 | 28.5 | C |
| | NB - L | 0.42 | 17.1 | B | 0.56 | 19.3 | B | 0.56 | 19.3 | B | 0.49 | 18.0 | B |
| | NB - TR | 0.10 | 13.6 | B | 0.15 | 14.0 | B | 0.14 | 13.9 | B | 0.12 | 13.7 | B |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.92 | 53.1 | D * | 0.94 | 47.4 | D * | 0.74 | 29.0 | C | 0.80 | 37.5 | D |
| | EB - TR | 0.44 | 25.2 | C | 0.51 | 29.5 | C | 0.38 | 24.5 | C | 0.38 | 24.5 | C |
| | WB - L | 0.75 | 29.8 | C | 0.72 | 20.6 | C | 0.82 | 33.0 | C | 0.72 | 29.3 | C |
| | WB - TR | 0.74 | 32.1 | C | 0.92 | 45.6 | D * | 0.74 | 31.7 | C | 0.61 | 29.0 | C |
| | NB - L | 0.09 | 16.3 | B | 0.14 | 16.8 | B | 0.14 | 16.7 | B | 0.05 | 16.0 | B |
| | NB - TR | 1.05 | 53.6 | D * | 1.05 | 53.8 | D * | 1.05 | 54.1 | D * | 1.05 | 54.3 | D * |
| | SB - L | 0.77 | 65.0 | E * | 0.89 | 69.6 | E * | 0.74 | 56.2 | E * | 0.63 | 47.0 | D |
| | SB - T | 0.68 | 25.8 | C | 0.88 | 32.3 | C | 0.78 | 28.8 | C | 0.66 | 25.1 | C |
| | SB - R | 0.37 | 19.8 | B | 0.69 | 25.2 | C | 0.35 | 19.4 | B | 0.31 | 18.9 | B |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L | 0.70 | 21.7 | C | 0.70 | 20.6 | C | 0.78 | 26.5 | C | 0.72 | 22.1 | C |
| | EB - TR | 0.45 | 15.6 | B | 0.41 | 15.0 | B | 0.36 | 14.5 | B | 0.38 | 14.6 | B |
| | WB - LTR | 0.83 | 32.1 | C | 0.77 | 30.3 | C | 0.88 | 33.5 | C | 0.74 | 29.6 | C |
| | NB - LTR | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B |
| | SB - LTR | 0.71 | 28.0 | C | 0.97 | 36.5 | D * | 0.69 | 27.2 | C | 0.61 | 25.4 | C |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | EB - TR | 0.66 | 17.6 | B | 0.65 | 17.8 | B | 0.83 | 21.6 | C | 0.68 | 17.8 | B |
| | WB - LT | 0.48 | 14.2 | B | 0.99 | 32.5 | C * | 0.75 | 19.2 | B | 0.66 | 17.2 | B |
| | NB - LR | 0.28 | 22.8 | C | 0.37 | 34.7 | C | 0.23 | 22.1 | C | 0.27 | 22.6 | C |
| 38. Forest Avenue (E-W) @ Richmond Avenue-Morningstar Road (N-S) | EB - L | 0.33 | 23.5 | C | 0.32 | 23.5 | C | 0.33 | 23.2 | C | 0.25 | 21.9 | C |
| | EB - TR | 0.77 | 28.8 | C | 0.76 | 28.5 | C | 0.84 | 30.6 | C | 0.79 | 29.1 | C |
| | WB - L | 0.71 | 26.1 | C | 0.92 | 48.8 | D * | 0.82 | 40.4 | D | 0.79 | 35.3 | D |
| | WB - TR | 0.37 | 12.2 | B | 0.42 | 12.7 | B | 0.40 | 12.5 | B | 0.38 | 12.3 | B |
| | NB - L | 0.74 | 41.0 | D | 0.59 | 34.7 | C | 0.72 | 39.5 | D | 0.81 | 47.6 | D |
| | NB - T | 0.43 | 25.5 | C | 0.49 | 26.6 | C | 0.50 | 26.6 | C | 0.50 | 26.5 | C |
| | NB - R | 0.33 | 12.9 | B | 0.28 | 12.3 | B | 0.30 | 12.5 | B | 0.30 | 12.4 | B |
| | SB - LTR | 0.60 | 29.1 | C | 0.80 | 34.6 | C | 0.67 | 31.2 | C | 0.84 | 36.4 | D |

Notes:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound
L-Left, T-Through, R-Right, DefL-Analysis considers a default left lane on this approach
V/C Ratio - Volume to Capacity Ratio, sec. - Seconds
LOS - Level of Service
* - Denotes a congested movement (LOS E or F, or V/C ratio greater than or equal to 0.9)
Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 10-11
2012 Existing Congested Lane Groups

| | LANE GROUP | MD PEAK HOUR | | | PM PEAK HOUR | | | SAT MD PEAK HOUR | | | SAT PM PEAK HOUR | | |
|--|------------|--------------|--------------|-----|--------------|--------------|-----|------------------|--------------|-----|------------------|--------------|-----|
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R | | | | 0.91 | 29.4 | C | 0.92 | 33.1 | C | 1.05 | 55.8 | E |
| | SB - L | 1.05 | 101.1 | F | | | | 1.05 | 92.4 | F | 1.05 | 93.5 | F |
| | SB - TR | | | | 1.02 | 51.6 | D | 0.91 | 31.3 | C | | | |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | | | | | | | 1.03 | 67.0 | E | | | |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | 0.94 | 45.5 | D | 0.97 | 53.5 | D | 0.92 | 47.2 | D |
| | NB - T | | | | | | | 0.99 | 34.9 | C | | | |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | | | | | | | 0.91 | 56.3 | E | | | |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR | 1.05 | 67.1 | E | 1.05 | 65.8 | E | 1.05 | 64.1 | E | 1.05 | 64.7 | E |
| | NB - TR | 0.90 | 44.4 | D | 0.96 | 49.9 | D | 1.05 | 65.8 | E | 1.01 | 57.0 | E |
| | SB - TR | 1.05 | 67.6 | E | 1.05 | 64.3 | E | 1.05 | 64.3 | E | 1.05 | 65.8 | E |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | NB - LTR | 0.96 | 62.7 | E | | | | 1.05 | 85.0 | F | 1.05 | 84.5 | F |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 0.90 | 33.3 | C | 0.96 | 35.0 | D | | | |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | WB - L | 0.98 | 50.1 | D | 1.01 | 34.3 | C | 1.05 | 73.9 | E | 1.04 | 64.1 | E |
| | NB - T | | | | | | | 0.91 | 36.1 | D | | | |
| | SB - TR | | | | 0.94 | 39.8 | D | 0.95 | 36.9 | D | | | |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.05 | 66.9 | E | 1.05 | 66.5 | E | 1.05 | 66.9 | E | | | |
| | NB - L | 0.88 | 63.3 | E | 0.98 | 75.1 | E | 0.87 | 59.5 | E | 0.93 | 64.9 | E |
| | SB - TR | | | | 1.04 | 44.4 | D | 0.98 | 28.4 | C | | | |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | SB - L | 0.88 | 64.0 | E | 0.94 | 59.5 | E | 1.05 | 94.2 | F | 0.95 | 73.9 | E |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.05 | 95.7 | F | 1.05 | 63.0 | E | 0.97 | 46.6 | D | | | |
| | NB - L | 1.05 | 85.7 | F | 1.03 | 77.8 | E | 1.05 | 76.3 | E | 1.04 | 72.7 | E |
| | SB - TR | | | | | | | 0.98 | 35.0 | C | | | |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | | | | 0.98 | 72.3 | E | | | |
| | SB - L | 1.00 | 93.3 | F | | | | 1.05 | 100.9 | F | 1.05 | 103.3 | F |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - LR | | | | | | | 0.93 | 31.5 | C | | | |
| | SB - T | | | | 0.90 | 26.3 | C | | | | | | |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | WB - T | | | | 0.99 | 53.3 | D | 0.95 | 46.8 | D | 0.95 | 48.1 | D |
| | NB - TR | | | | 0.97 | 43.8 | D | 1.02 | 49.1 | D | | | |
| | SB - L | 0.97 | 60.1 | E | 1.01 | 62.0 | E | 1.05 | 71.2 | E | 0.93 | 50.1 | D |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | | | | 0.91 | 35.1 | D | | | | | | |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | EB - L | | | | 0.95 | 34.2 | C | | | | | | |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.40 | 40.3 | E | 0.5 | 48.6 | E | | | | | | |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | SB - LTR | | | | 1.05 | 50.0 | D | 1.05 | 52.6 | D | 1.05 | 52.8 | D |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | | | | 1.05 | 48.9 | D | | | | 0.9 | 24.1 | C |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.92 | 53.1 | D | 0.94 | 47.4 | D | | | | | | |
| | WB - TR | | | | 0.92 | 45.6 | D | | | | | | |
| | NB - TR | 1.05 | 53.6 | D | 1.05 | 53.8 | D | 1.05 | 54.1 | D | 1.05 | 54.3 | D |
| | SB - L | 0.77 | 65.0 | E | 0.89 | 69.6 | E | 0.74 | 56.2 | E | | | |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | SB - LTR | | | | 0.97 | 36.5 | D | | | | | | |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | WB - LT | | | | 0.99 | 32.5 | C | | | | | | |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | WB - L | | | | 0.92 | 48.8 | D | | | | | | |

FUTURE WITHOUT THE PROPOSED PROJECT (NO ACTION)

Between 2012 and 2019, it is expected that traffic demand in the study area would increase due to general background growth and demand from two No Action developments within a ¼ mile radius of the project site—a Target store (bounded by Richmond Avenue, Yukon Avenue, Forest Hill Road, and Independence Avenue), and Lamberts Path (northwest of Richmond Avenue along Lamberts Lane). The Target store is a 53,300 square foot expansion of a retail complex and Lamberts Path is a residential development, which includes 128 units of market-rate housing, including 84 single family townhouses and 22 two family townhouses.⁴ Total No Action condition traffic volumes were developed by applying the annual background growth rates recommended in the 2014 CEQR Technical Manual to existing volumes and assigning the trips generated by the two identified No Action developments and by the residential units and retail space. An annual compounded background growth rate of 1.00 percent per year for the first five years and 0.50 percent for subsequent years for years 2012 through 2019 was applied to existing travel demand as specified in the 2014 CEQR Technical Manual. This background growth rate is applied to account for smaller projects and general increases in travel demand not attributable to specific development projects in proximity to the study area.

CHANGES TO THE STUDY AREA NETWORK

The 2012 to 2019 period will likely see the implementation of a number of physical and operational changes to the study area approved by NYCDOT. These improvements are discussed below: In addition, NYCDOT has proposed to install

Merrill Avenue/Morani Street at Richmond Avenue

The southbound left turn at this intersection will be banned.

Victory Boulevard at Richmond Avenue

The cycle length of the traffic signal at this intersection will be extended to 120 seconds in all peak hours. The four phases at this signal will include a 34-second leading westbound-only phase, a 30-second eastbound-westbound phase, a 45-second northbound-southbound phase, and an 11-second northbound-southbound lagging left-turn only phase. In addition, the westbound permitted left turn would be eliminated and thus the westbound left turn would be protected only. It should be noted that this signal timing change would cause the eastbound left, eastbound through, and northbound left lane groups to become congested in one or more peak hours.

Victory Boulevard at North Gannon Avenue

One second of green time would be transferred from the eastbound-westbound phase to the northbound phase in all peak hours.

Forest Avenue at Richmond Avenue-Morningstar Road

a ~~A~~ new 12-second northbound leading phase at ~~the intersection of Forest Avenue and Richmond Avenue-Morningstar Road~~ this intersection would be installed. The phase will receive two seconds of green time from the westbound leading phase, four seconds of green time from the eastbound-westbound main phase, and six seconds of green time from the northbound-southbound main phase in

⁴ Both of these developments have been built. However, since they were not yet built in 2012 (when traffic data was collected), they are considered No Action developments for the purposes of this analysis.

Staten Island Mall Enlargement

all analysis periods. In addition, the eastbound approach would be restriped as one 10-foot left turn bay and two 11-foot travel lanes, while the northbound left turn bay would be narrowed to 9.5 feet. This would cause additional congestion to the eastbound through-right lane group.

INTERSECTION CAPACITY ANALYSIS

Figures 10-7a-7c, 10-8a-8c, 10-9a-9c, and 10-10a-10c show the expected No Action weekday midday and PM and Saturday midday and PM peak hour traffic volumes, respectively, at analyzed intersections within the study area, while **Table 10-12** below shows a summary comparison of the individual intersection levels of service for existing and future No Action conditions. As shown in **Table 10-12**, all analyzed intersections would operate at LOS D or better during the all peak hours with the following exceptions:

- Richmond Hill Road at Forest Hill Road would operate at LOS E during the weekday midday and PM peak hours and at LOS F during the Saturday midday and PM peak hours.
- Victory Boulevard at Richmond Avenue would operate at LOS E during the weekday PM, Saturday midday, and Saturday PM peak hours.
- Arthur Kill Road at Woodrow Road would operate at LOS E during the weekday PM Peak hour.

Intersections that would deteriorate to LOS D in the No Action condition compared to existing conditions in one or more peak hours include Forest Hill Road at Richmond Avenue, Signs Road at Richmond Avenue, Draper Place at Richmond Avenue, Drumgoole Road West at Richmond Avenue, Rockland Avenue at Brielle Avenue, Richmond Road at Wilder Avenue, and Forest Avenue at Richmond Avenue-Morningstar Road. All intersections which operated at LOS D in the existing condition except for the aforementioned exceptions would continue to do so in the No Action condition.

Table 10-12
Existing versus No Action Intersection Level of Service Summary

| | 2012 Existing Conditions | | | | 2019 No Action Conditions | | | |
|---|--------------------------|----------------------|---------------------------|-----------------------|---------------------------|----------------------|---------------------------|-----------------------|
| | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Midday Peak Hour | Saturday PM Peak Hour | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Midday Peak Hour | Saturday PM Peak Hour |
| Number of Intersections Operating at LOS A/B/C | 36 | 32 | 33 | 34 | 32 | 27 | 25 | 34 30 |
| Number of Intersections Operating at LOS D | 2 | 6 | 5 | 4 | 5 | 9 8 | 11 | 6 |
| Number of Intersections Operating at LOS E | 0 | 0 | 0 | 0 | 1 | 2 3 | 1 | 0 1 |
| Number of Intersections Operating at LOS F | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Number of Lane Groups Operating at LOS E/F out of Approximately 200 Lane Groups | 13 | 10 | 16 | 11 | 49 21 | 29 32 | 29 30 | 29 21 |

Table 10-13 shows the detailed volume-to-capacity ratios, delays and levels of service by lane group at each analyzed intersection in each peak hour in the No Action condition and identifies those lane groups that are considered congested in one or more peak hours. The congested lane groups are presented in more detail in **Table 10-14**. As shown in **Table 10-14**, some lane groups that were congested under existing conditions would worsen during one or more of the analyzed peak hours by 2019 under No Action conditions. **Table 10-14** shows that there are totals of ~~21~~ 23, ~~44~~ 45, ~~43~~ 45, and ~~32~~ 33 congested lane groups during the weekday midday and PM and Saturday midday and PM peak hours, respectively.

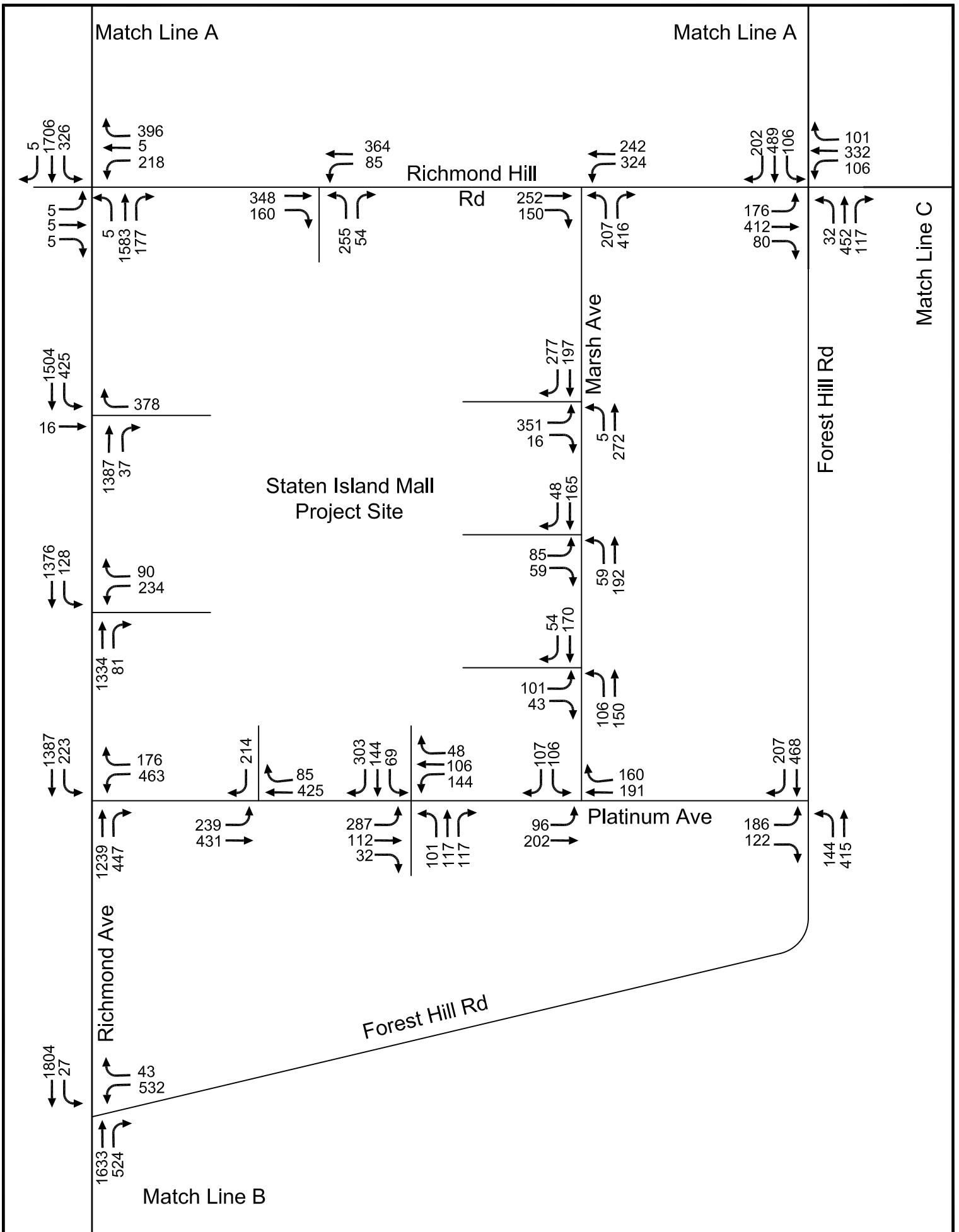


Figure 10-7a
2019 No-Action Weekday Midday Traffic Volumes

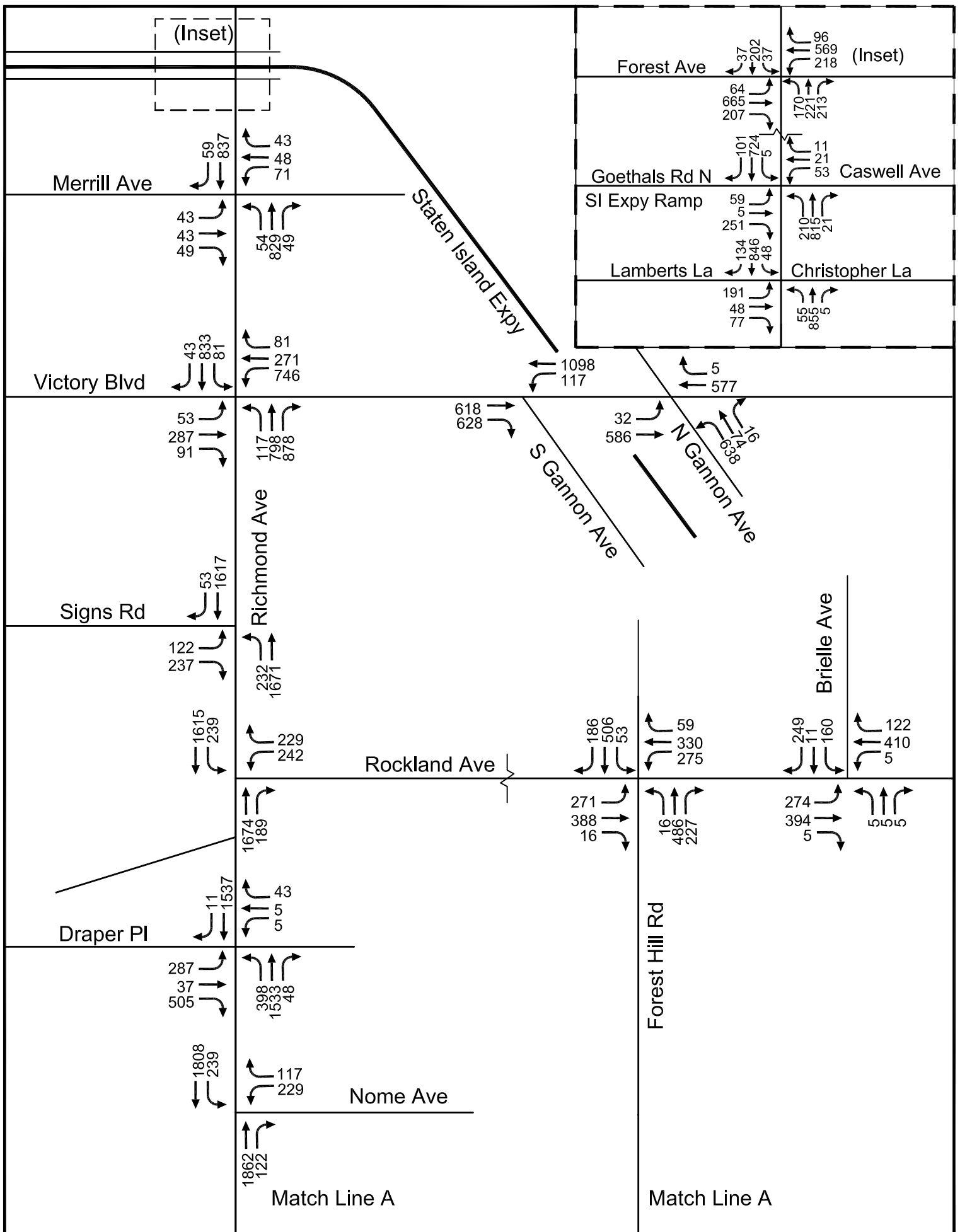


Figure 10-7b
2019 No-Action Weekday Midday Traffic Volumes

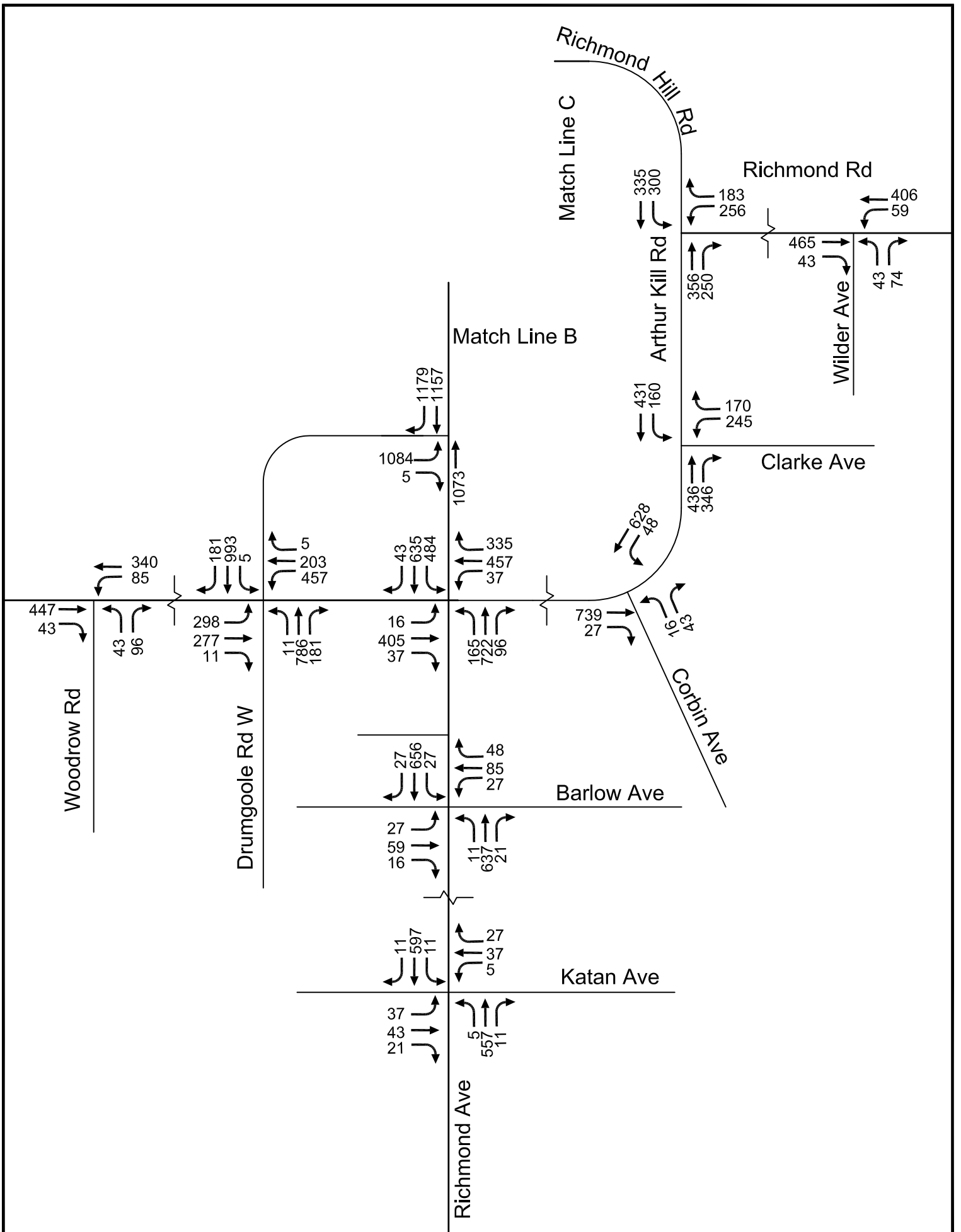


Figure 10-7c
2019 No-Action Weekday Midday Traffic Volumes

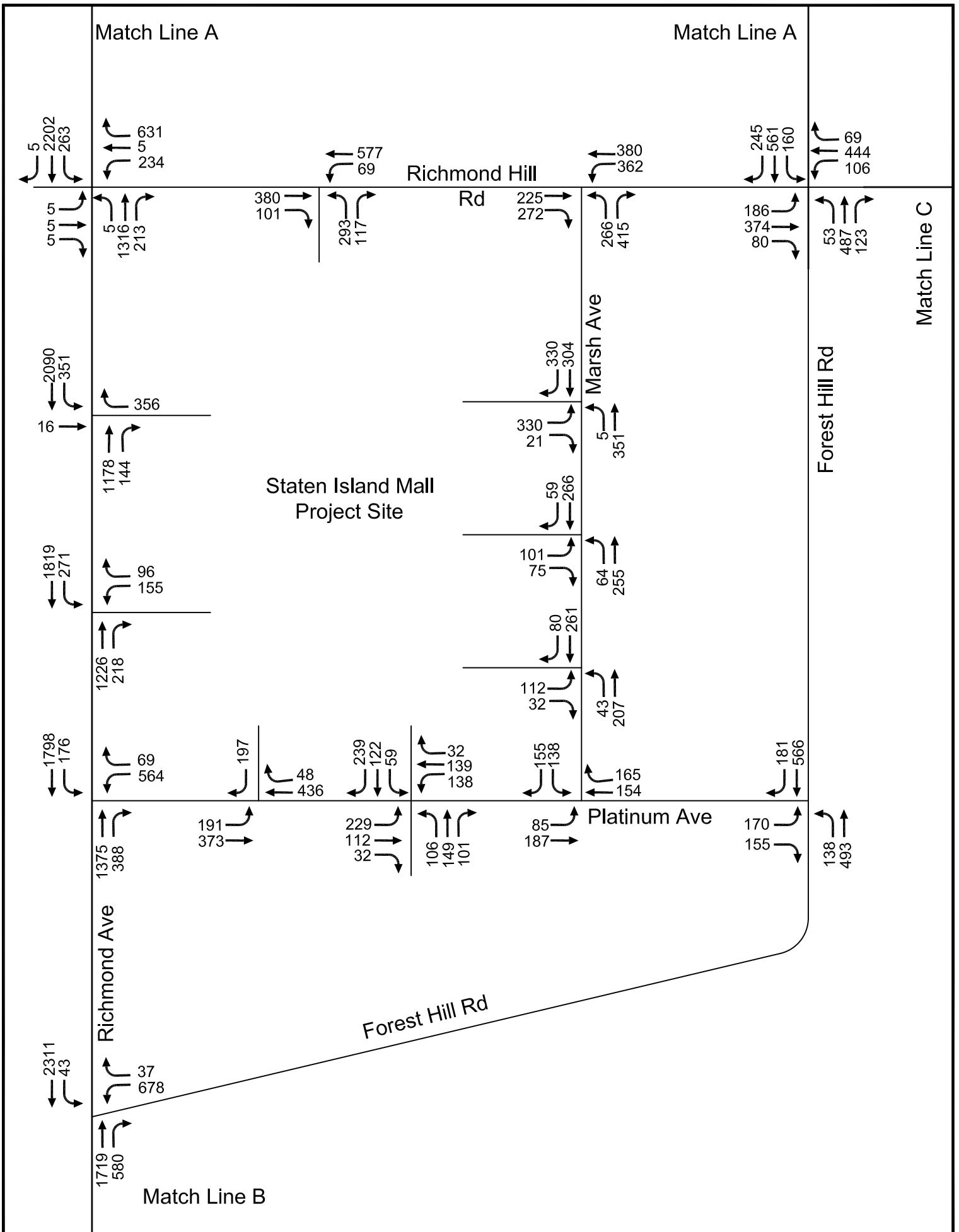


Figure 10-8a
2019 No-Action Weekday PM Traffic Volumes

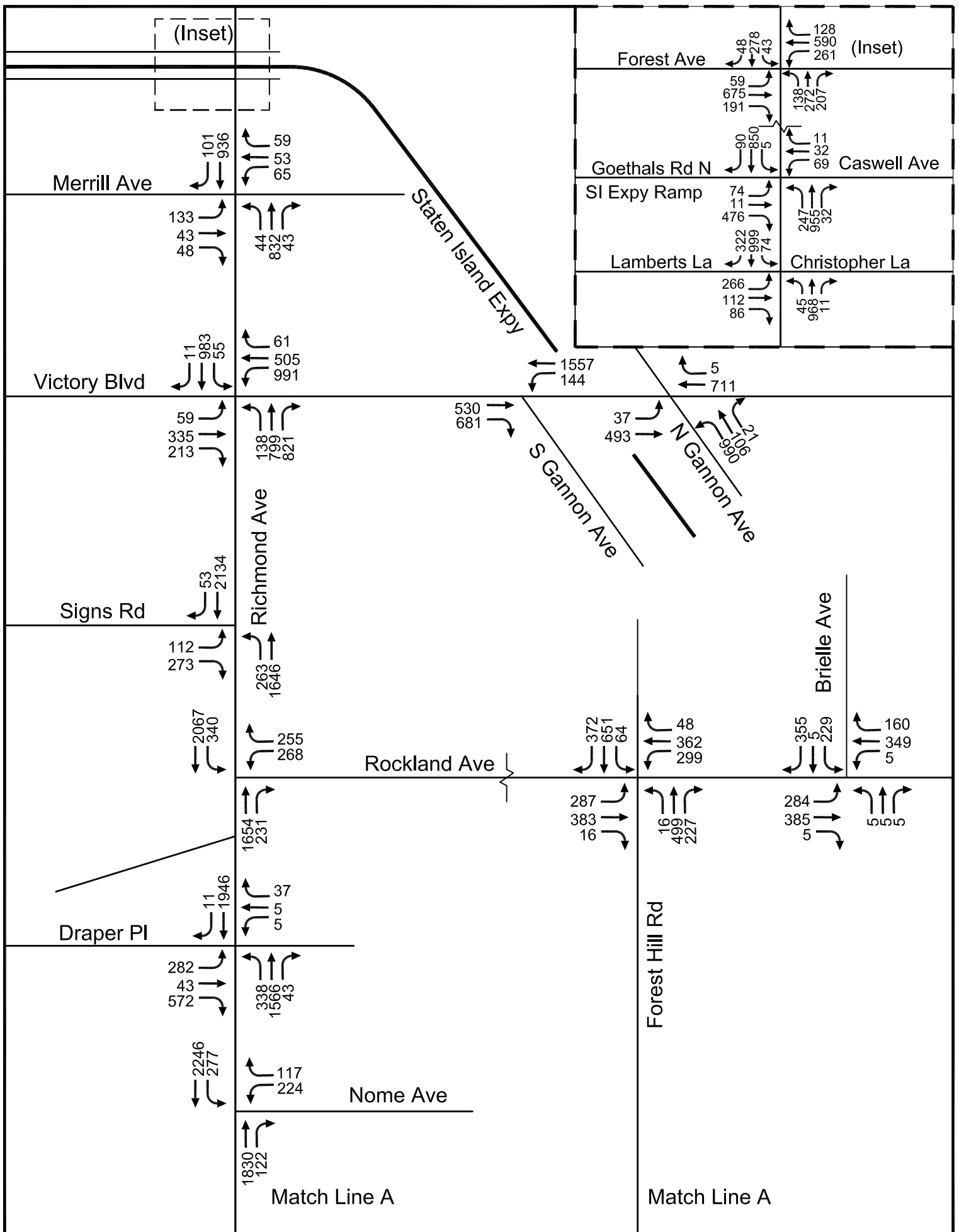


Figure 10-8b
2019 No-Action Weekday PM Traffic Volumes

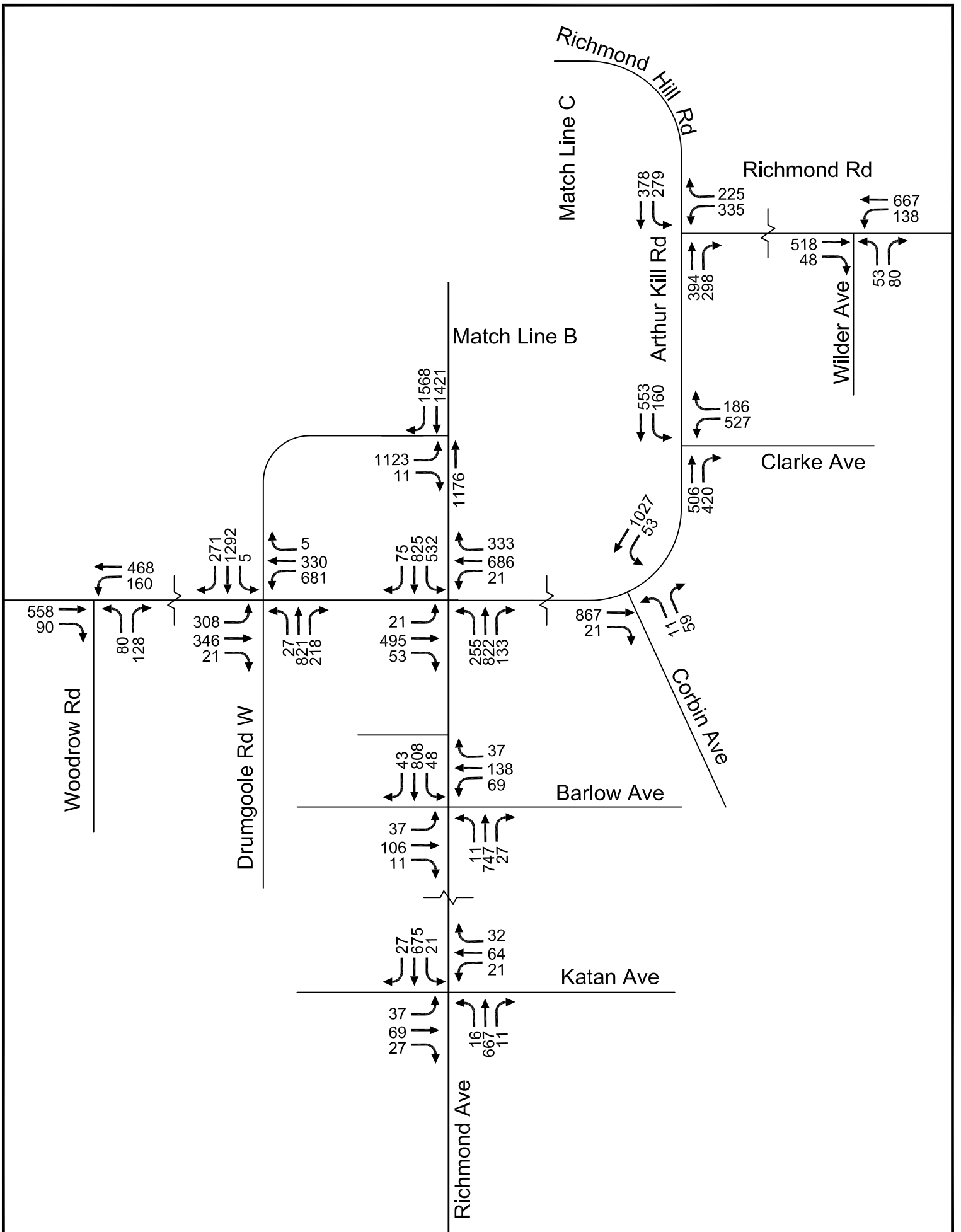


Figure 10-8c
2019 No-Action Weekday PM Traffic Volumes

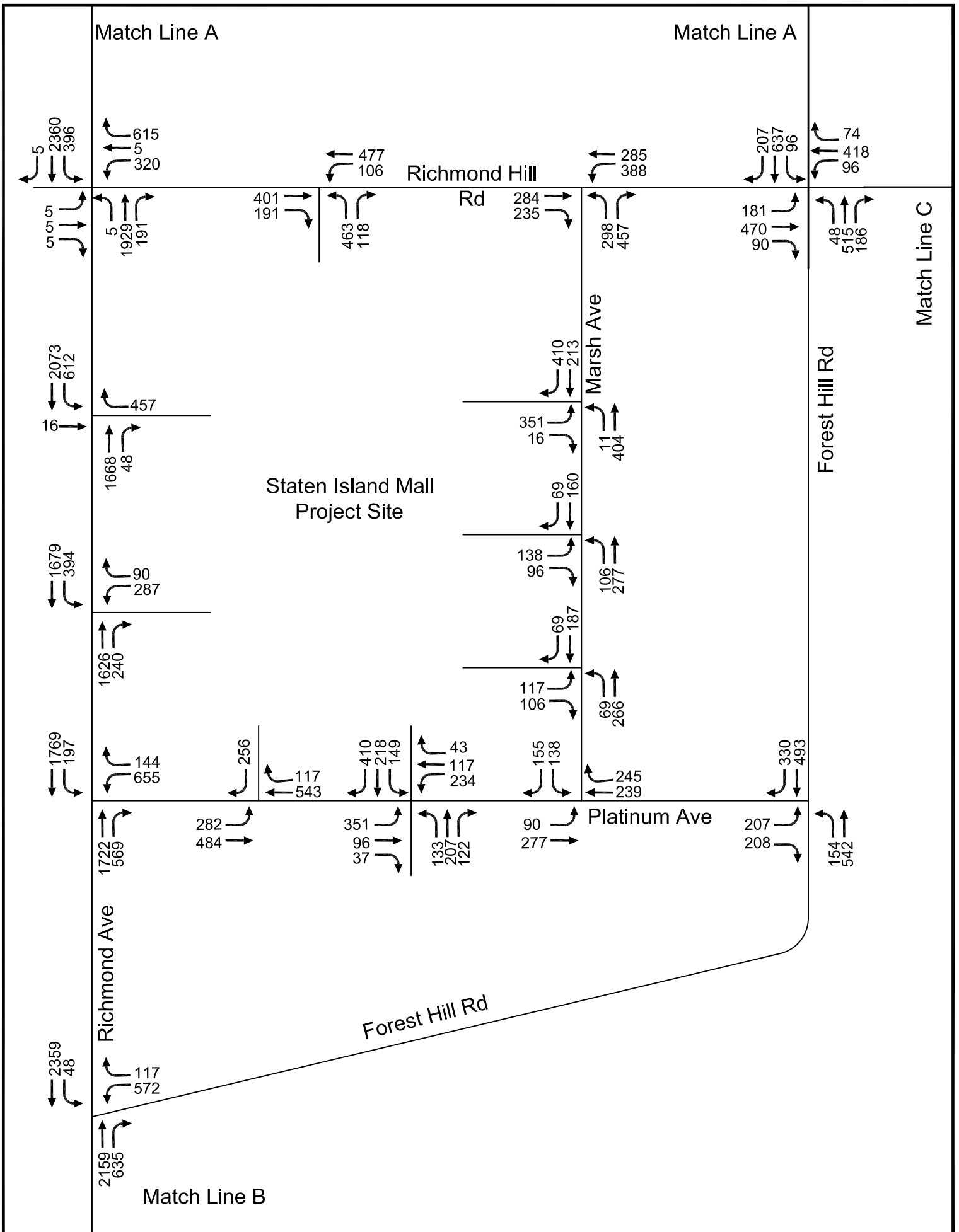


Figure 10-9a
2019 No-Action Saturday Midday Traffic Volumes

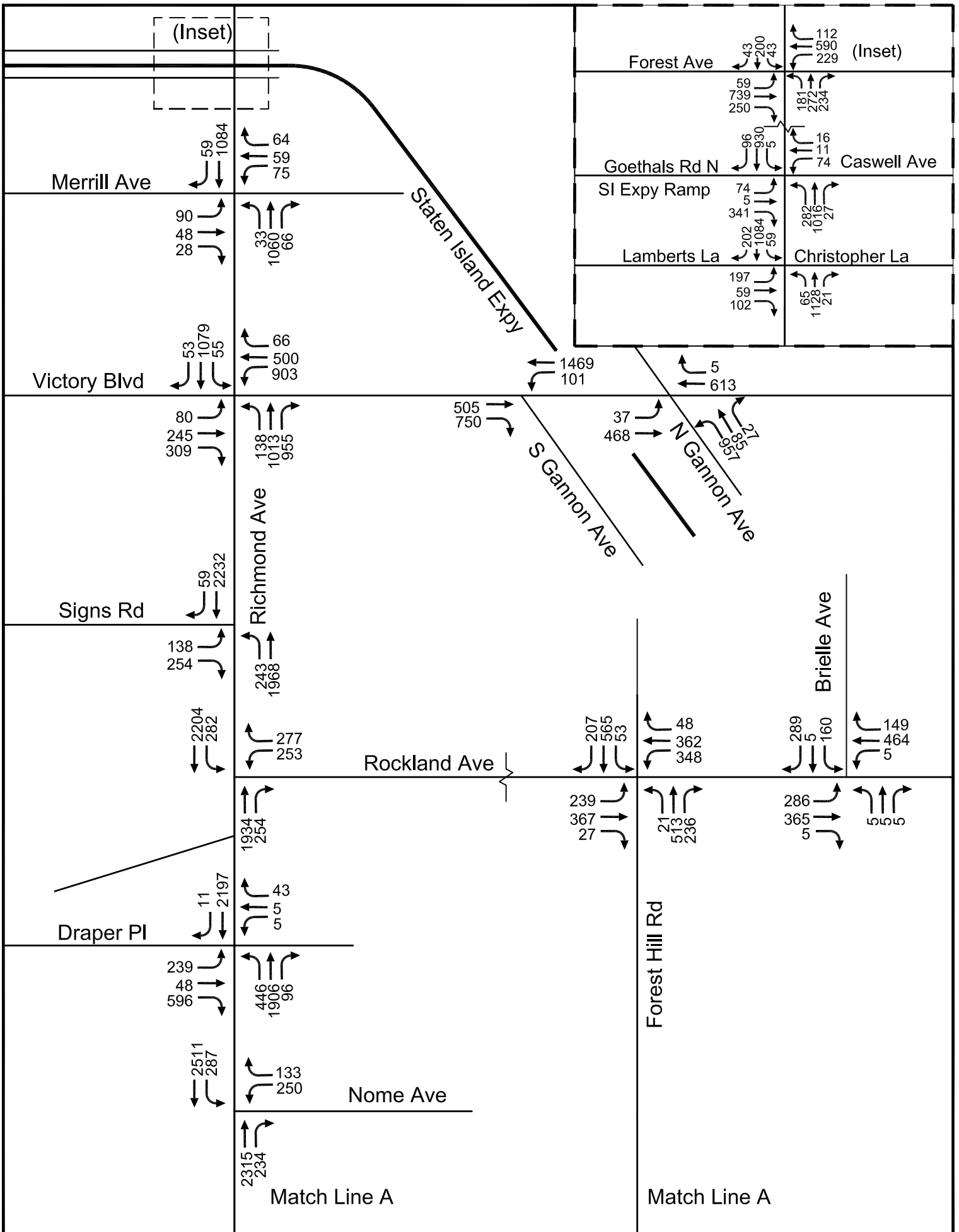


Figure 10-9b
2019 No-Action Saturday Midday Traffic Volumes

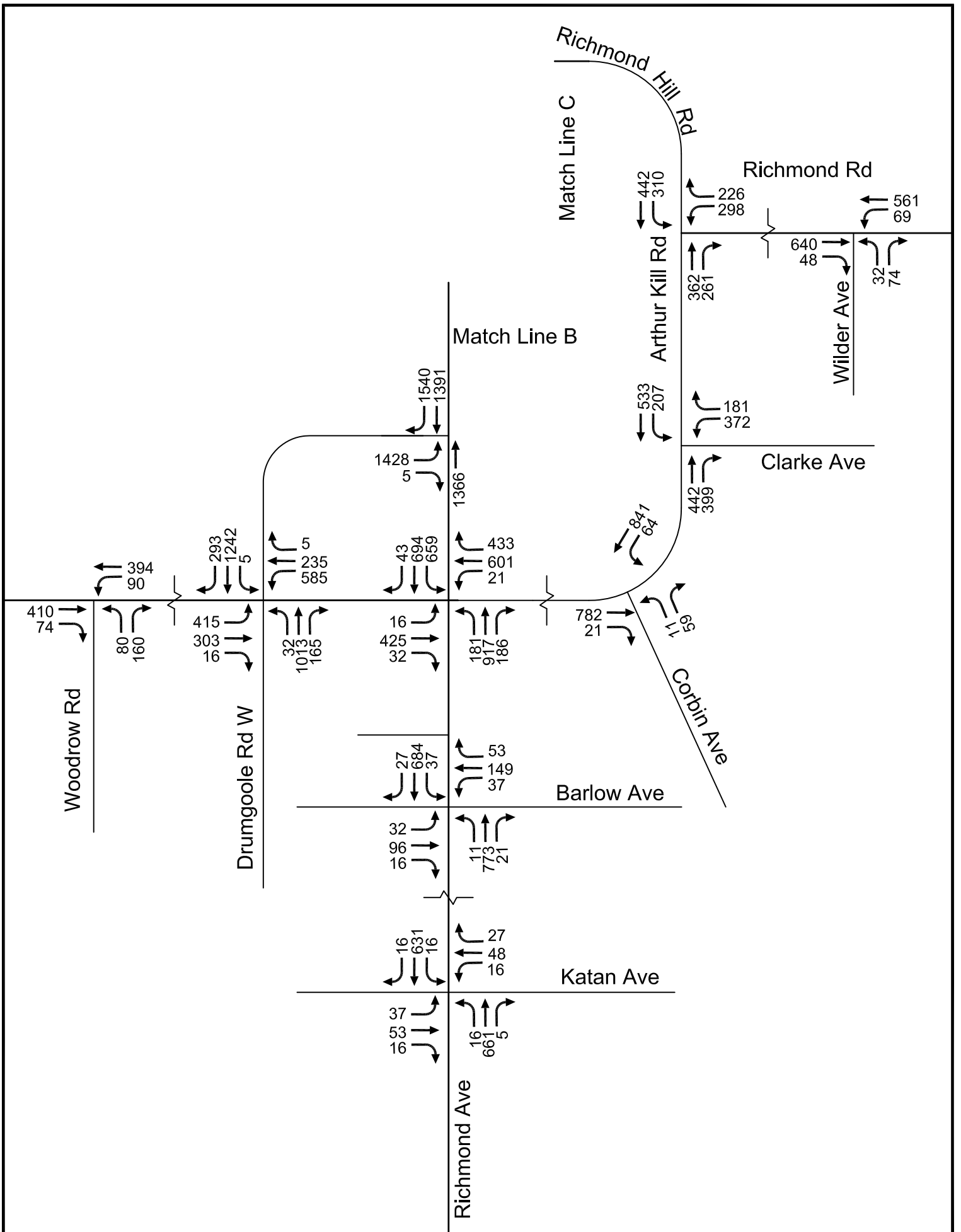


Figure 10-9c
2019 No-Action Saturday Midday Traffic Volumes

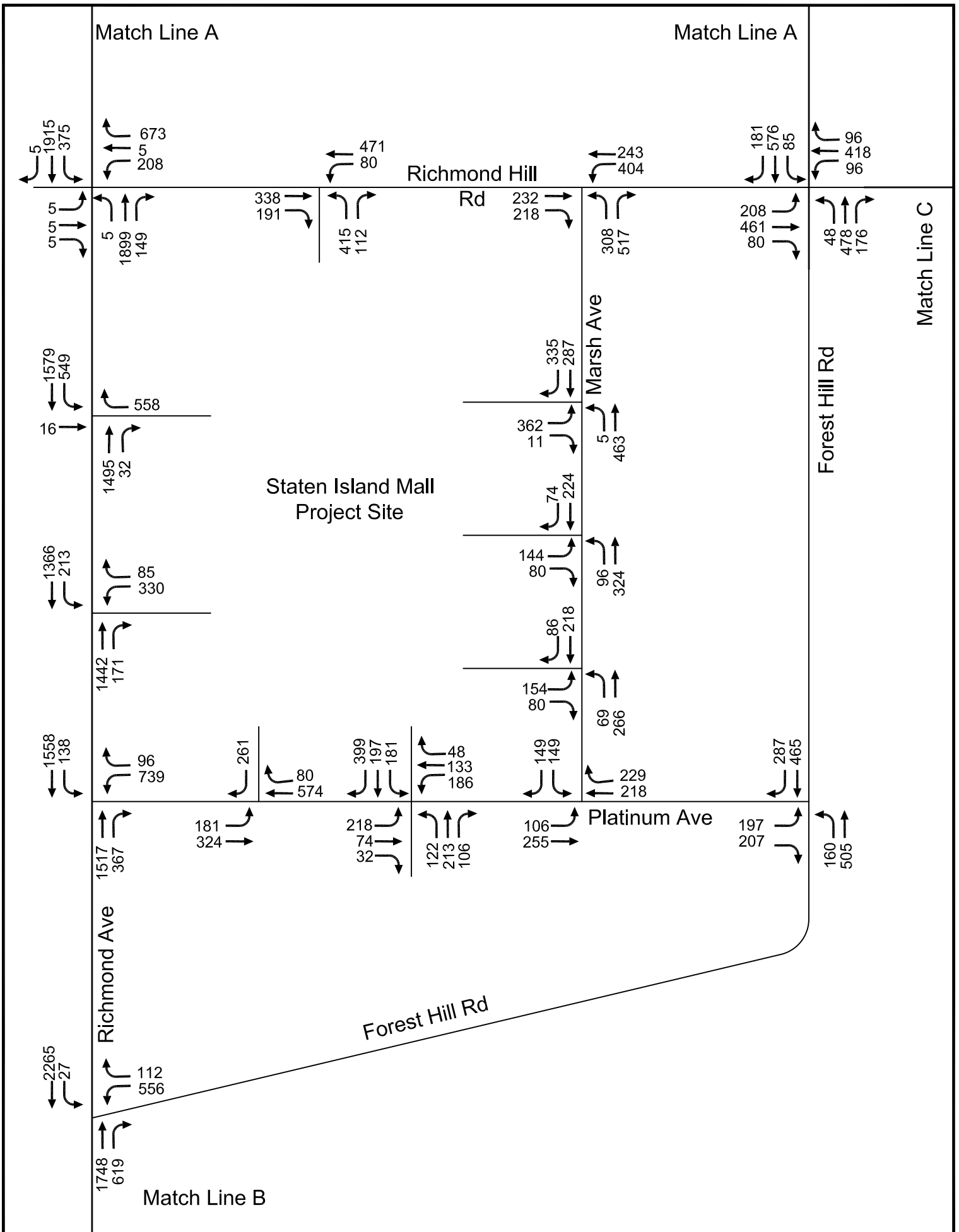


Figure 10-10a
2019 No-Action Saturday PM Traffic Volumes

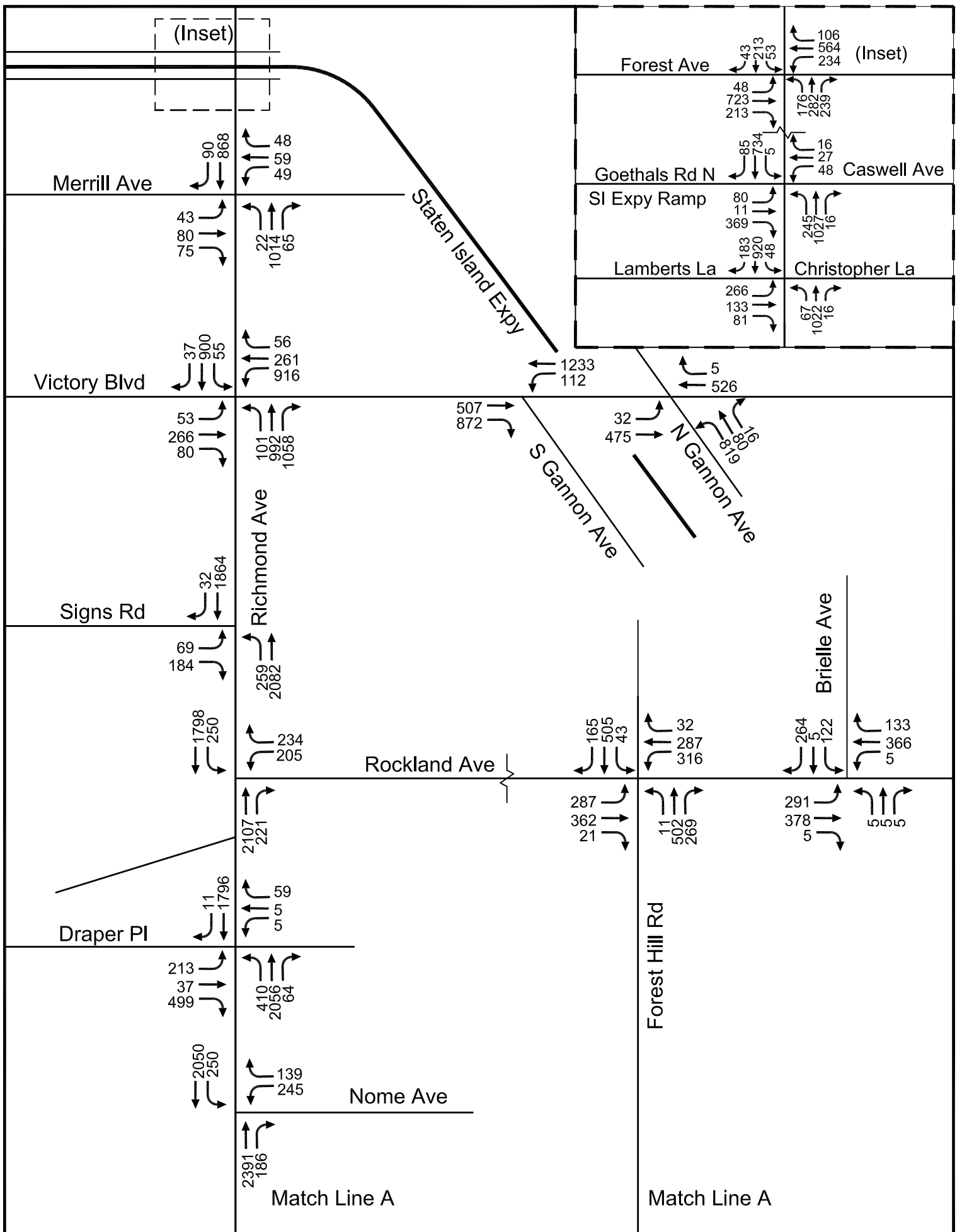


Figure 10-10b
2019 No-Action Saturday PM Traffic Volumes

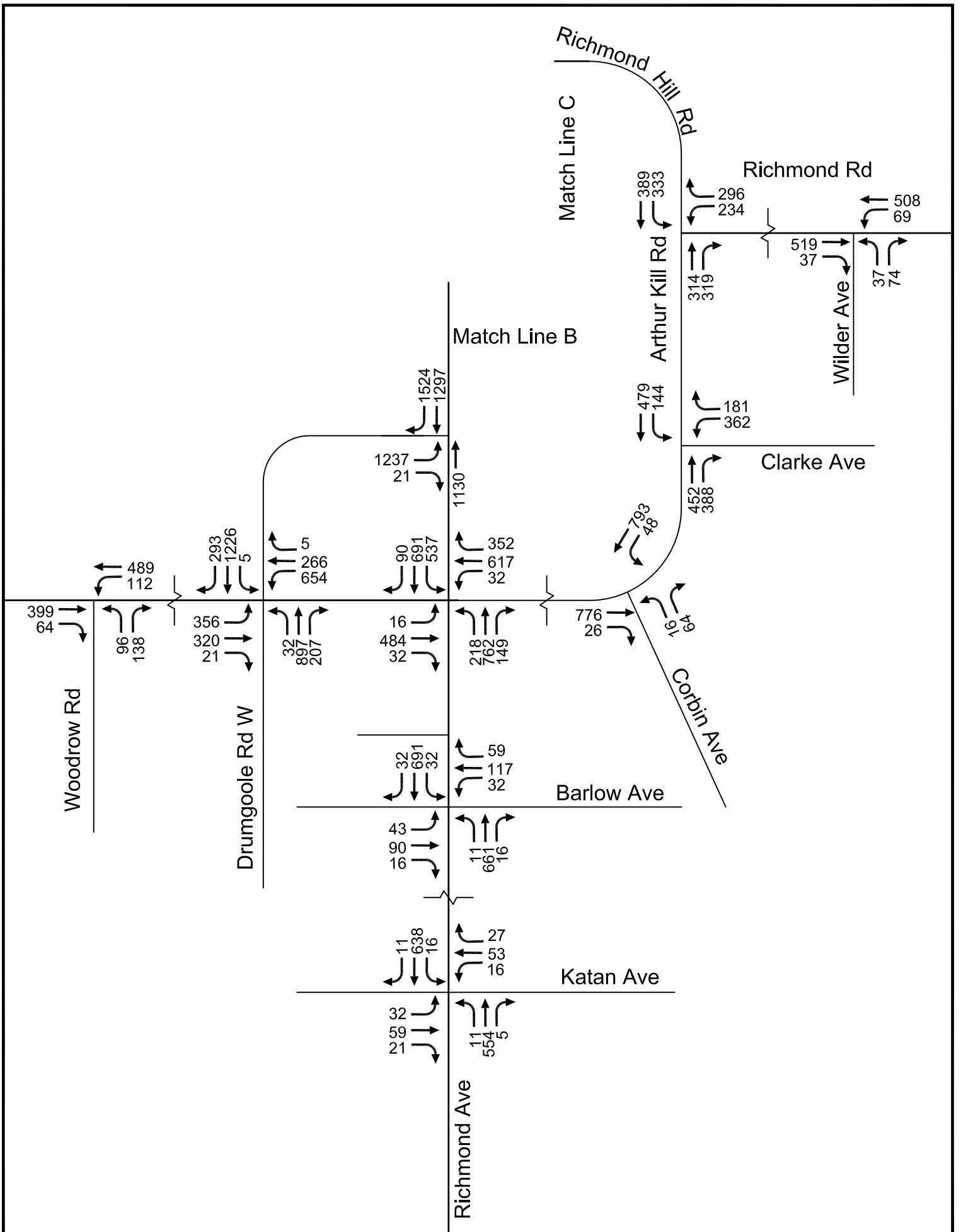


Figure 10-10c
2019 No-Action Saturday PM Traffic Volumes

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | |
|--|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-----------|--------------|-----|------|------|---|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.04 | 24.7 | C | 0.04 | 24.7 | C | 0.05 | 24.7 | C | 0.05 | 24.7 | C | 0.04 | 24.7 | C | 0.04 | 24.7 | C | | | |
| | WB - L | 0.37 | 29.6 | C | 0.40 | 30.0 | C | 0.37 | 28.6 | C | 0.39 | 28.9 | C | 0.48 | 30.4 | C | 0.51 | 31.1 | C | 0.35 | 27.7 | C |
| | WB - LT | 0.40 | 30.3 | C | 0.43 | 30.8 | C | 0.39 | 29.0 | C | 0.42 | 29.4 | C | 0.51 | 31.2 | C | 0.55 | 31.9 | C | 0.37 | 28.0 | C |
| | WB - R | 0.62 | 20.3 | C | 0.66 | 21.5 | C | 0.91 | 29.4 | C | 0.98 | 39.3 | D | 0.92 | 33.1 | C | 0.98 | 43.6 | D | 1.05 | 55.8 | E |
| | NB - L | 0.02 | 31.5 | C | 0.02 | 31.5 | C | 0.02 | 27.4 | C | 0.02 | 27.4 | C | 0.02 | 31.4 | C | 0.02 | 31.4 | C | 0.02 | 31.4 | C |
| | NB - TR | 0.72 | 24.6 | C | 0.79 | 25.9 | C | 0.73 | 27.8 | C | 0.79 | 29.1 | C | 0.80 | 25.8 | C | 0.87 | 27.7 | C | 0.79 | 25.6 | C |
| | SB - L | 1.05 | 101.1 | F | 1.13 | 125.0 | F | 0.72 | 41.9 | D | 0.77 | 45.0 | D | 1.05 | 92.4 | F | 1.13 | 118.1 | F | 1.05 | 93.5 | F |
| | SB - TR | 0.70 | 24.6 | C | 0.77 | 26.1 | C | 1.02 | 51.6 | D | 1.10 | 80.1 | F | 0.91 | 31.3 | C | 1.00 | 42.6 | D | 0.74 | 25.2 | C |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C |
| | NB - TR | 0.55 | 22.7 | C | 0.60 | 23.5 | C | 0.54 | 22.6 | C | 0.59 | 23.3 | C | 0.72 | 27.0 | C | 0.79 | 28.4 | C | 0.67 | 26.3 | C |
| | SB - L | 0.89 | 51.6 | D | 0.95 | 58.9 | E | 0.71 | 37.1 | D | 0.76 | 37.8 | D | 1.03 | 67.0 | E | 1.10 | 90.4 | F | 0.89 | 47.2 | D |
| | SB - T | 0.37 | 9.0 | A | 0.41 | 9.3 | A | 0.53 | 10.2 | B | 0.58 | 10.6 | B | 0.50 | 10.0 | A | 0.55 | 10.4 | B | 0.38 | 9.0 | A |
| 3. SI Mall East Driveway (E-W) @ Richmond Avenue (N-S) | WB - L | 0.24 | 21.7 | C | 0.26 | 21.9 | C | 0.16 | 20.9 | C | 0.17 | 21.0 | C | 0.32 | 22.7 | C | 0.34 | 22.9 | C | 0.35 | 23.0 | C |
| | NB - T | 0.40 | 12.8 | B | 0.44 | 13.2 | B | 0.38 | 12.6 | B | 0.42 | 12.9 | B | 0.49 | 13.6 | B | 0.54 | 14.2 | B | 0.41 | 12.8 | B |
| | SB - L | 0.13 | 20.5 | C | 0.14 | 20.6 | C | 0.27 | 21.8 | C | 0.28 | 21.9 | C | 0.35 | 22.8 | C | 0.38 | 23.0 | C | 0.19 | 21.1 | C |
| | SB - T | 0.38 | 12.6 | B | 0.41 | 12.9 | B | 0.50 | 13.8 | B | 0.54 | 14.2 | B | 0.47 | 13.4 | B | 0.51 | 13.9 | B | 0.36 | 12.4 | B |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.55 | 31.6 | C | 0.59 | 32.3 | C | 0.74 | 36.7 | D | 0.79 | 38.8 | D | 0.79 | 38.1 | D | 0.84 | 40.9 | D | 0.86 | 42.5 | D |
| | WB - R | 0.56 | 35.0 | C | 0.60 | 36.3 | D | 0.22 | 27.8 | C | 0.24 | 28.0 | C | 0.39 | 30.6 | C | 0.42 | 31.1 | C | 0.27 | 28.4 | C |
| | NB - T | 0.56 | 19.5 | B | 0.62 | 20.4 | C | 0.62 | 19.0 | B | 0.67 | 20.0 | B | 0.76 | 25.5 | C | 0.83 | 24.6 | C | 0.67 | 21.0 | C |
| | NB - R | 0.32 | 17.2 | B | 0.34 | 17.5 | B | 0.30 | 15.7 | B | 0.32 | 15.9 | B | 0.40 | 18.0 | B | 0.42 | 18.3 | B | 0.25 | 16.2 | B |
| | SB - L | 0.70 | 48.5 | D | 0.74 | 50.8 | D | 0.69 | 52.1 | D | 0.74 | 55.0 | D | 0.52 | 42.7 | D | 0.55 | 43.5 | D | 0.42 | 40.5 | D |
| | SB - T | 0.34 | 8.4 | A | 0.38 | 8.6 | A | 0.42 | 9.0 | A | 0.46 | 9.3 | A | 0.41 | 8.9 | A | 0.45 | 9.3 | A | 0.36 | 8.5 | A |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - L | 0.54 | 30.4 | C | 0.59 | 31.6 | C | 0.81 | 35.2 | D | 0.88 | 39.1 | D | 0.62 | 30.3 | C | 0.69 | 31.9 | C | 0.59 | 30.2 | C |
| | WB - LR | 0.66 | 34.0 | C | 0.73 | 36.4 | D | 0.94 | 45.5 | D | 1.02 | 61.6 | E | 0.97 | 53.5 | D | 1.06 | 77.5 | E | 0.92 | 47.2 | D |
| | NB - T | 0.78 | 23.2 | C | 0.85 | 25.2 | C | 0.75 | 22.3 | C | 0.81 | 23.7 | C | 0.99 | 34.9 | C | 1.08 | 64.1 | E | 0.80 | 23.3 | C |
| | NB - R | 0.32 | 17.0 | B | 0.37 | 17.6 | B | 0.40 | 17.9 | B | 0.43 | 18.4 | B | 0.45 | 18.1 | B | 0.46 | 18.2 | B | 0.44 | 18.4 | B |
| | SB - L | 0.30 | 45.0 | D | 0.32 | 45.8 | D | 0.46 | 47.1 | D | 0.50 | 48.3 | D | 0.51 | 49.2 | D | 0.55 | 50.5 | D | 0.28 | 43.7 | D |
| | SB - T | 0.66 | 13.9 | B | 0.72 | 14.9 | B | 0.82 | 16.7 | B | 0.88 | 18.6 | B | 0.80 | 16.3 | B | 0.87 | 18.2 | B | 0.76 | 15.5 | B |
| 6. Richmond Hill Road (E-W) @ SI Mall North Driveway (N-S) | EB - TR | 0.27 | 11.3 | B | 0.29 | 11.5 | B | 0.30 | 11.6 | B | 0.32 | 11.8 | B | 0.31 | 11.7 | B | 0.34 | 12.0 | B | 0.26 | 11.3 | B |
| | WB - LT | 0.37 | 12.5 | B | 0.40 | 12.8 | B | 0.46 | 13.3 | B | 0.49 | 13.8 | B | 0.45 | 13.4 | B | 0.50 | 14.1 | B | 0.38 | 12.5 | B |
| | NB - L | 0.41 | 24.5 | C | 0.43 | 24.9 | C | 0.51 | 26.4 | C | 0.54 | 27.1 | C | 0.77 | 35.2 | D | 0.82 | 38.3 | D | 0.71 | 32.4 | C |
| | NB - R | 0.12 | 20.6 | C | 0.13 | 20.7 | C | 0.24 | 22.1 | C | 0.25 | 22.3 | C | 0.24 | 22.2 | C | 0.26 | 22.5 | C | 0.23 | 22.0 | C |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | EB - T | 0.43 | 24.7 | C | 0.46 | 25.3 | C | 0.38 | 23.7 | C | 0.40 | 24.1 | C | 0.44 | 24.7 | C | 0.47 | 25.3 | C | 0.38 | 23.9 | C |
| | EB - R | 0.42 | 25.4 | C | 0.45 | 26.1 | C | 0.72 | 34.0 | C | 0.77 | 36.6 | D | 0.54 | 28.0 | C | 0.58 | 29.0 | C | 0.57 | 28.8 | C |
| | WB - L | 0.46 | 7.9 | A | 0.50 | 8.6 | A | 0.46 | 7.7 | A | 0.50 | 8.3 | A | 0.52 | 8.7 | A | 0.56 | 9.6 | A | 0.53 | 8.6 | A |
| | WB - T | 0.22 | 5.1 | A | 0.23 | 5.3 | A | 0.31 | 5.8 | A | 0.33 | 6.0 | A | 0.23 | 5.2 | A | 0.25 | 5.3 | A | 0.19 | 5.0 | A |
| | NB - L | 0.64 | 40.0 | D | 0.68 | 41.3 | D | 0.76 | 44.8 | D | 0.81 | 47.8 | D | 0.91 | 56.3 | E | 0.97 | 66.4 | E | 0.88 | 51.4 | D |
| | NB - R | 0.54 | 15.1 | B | 0.57 | 15.8 | B | 0.52 | 14.7 | B | 0.55 | 15.3 | B | 0.57 | 15.3 | B | 0.60 | 16.0 | B | 0.65 | 16.8 | B |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | EB - L | 0.43 | 23.3 | C | 0.47 | 24.4 | C | 0.48 | 24.9 | C | 0.52 | 26.3 | C | 0.45 | 23.8 | C | 0.50 | 25.1 | C | 0.52 | 25.4 | C |
| | EB - TR | 0.59 | 27.3 | C | 0.63 | 28.4 | C | 0.51 | 24.3 | C | 0.55 | 25.1 | C | 0.63 | 27.0 | C | 0.67 | 28.2 | C | 0.59 | 26.0 | C |
| | WB - LTR | 1.05 | 67.1 | E | 1.18 | 122.2 | F | 1.05 | 65.8 | E | 1.17 | 118.2 | F | 1.05 | 64.1 | E | 1.19 | 123.5 | F | 1.05 | 64.7 | E |
| | NB - L | 0.17 | 46.8 | D | 0.19 | 47.8 | D | 0.29 | 48.7 | D | 0.31 | 48.9 | D | 0.23 | 47.5 | D | 0.24 | 47.6 | D | 0.23 | 47.7 | D |
| | NB - TR | 0.90 | 44.4 | D | 1.00 | 61.1 | E | 0.96 | 49.9 | D | 1.06 | 76.0 | E | 1.05 | 65.8 | E | 1.17 | 117.6 | F | 1.01 | 57.0 | E |
| | SB - L | 0.51 | 44.5 | D | 0.64 | 51.1 | D | 0.77 | 51.5 | D | 0.85 | 55.5 | E | 0.52 | 50.2 | D | 0.56 | 50.8 | D | 0.44 | 48.0 | D |
| | SB - TR | 1.05 | 67.6 | E | 1.17 | 116.4 | F | 1.05 | 64.3 | E | 1.14 | 102.6 | F | 1.05 | 64.3 | E | 1.16 | 112.2 | F | 1.05 | 65.8 | E |

Table 10-13

2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|---|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-----------|--------------|-----|------|------|-----|------|-------|-----|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 9. Platinum Avenue (E-W) @ SI Mall Southwest Driveway (N-S) | EB - Defl | 0.22 | 1.0 | A | 0.24 | 1.1 | A | 0.19 | 0.7 | A | 0.21 | 0.8 | A | 0.26 | 1.4 | A | 0.29 | 1.7 | A | 0.17 | 1.1 | A | 0.18 | 1.3 | A |
| | EB - T | 0.25 | 0.3 | A | 0.26 | 0.3 | A | 0.21 | 0.2 | A | 0.23 | 0.3 | A | 0.27 | 0.3 | A | 0.29 | 0.4 | A | 0.18 | 0.2 | A | 0.19 | 0.2 | A |
| | WB - TR | 0.31 | 11.6 | B | 0.33 | 11.8 | B | 0.27 | 11.2 | B | 0.28 | 11.4 | B | 0.35 | 11.8 | B | 0.36 | 12.0 | B | 0.35 | 11.9 | B | 0.37 | 12.1 | B |
| | SB - R | 0.38 | 24.1 | C | 0.41 | 24.6 | C | 0.35 | 23.7 | C | 0.38 | 24.0 | C | 0.44 | 25.0 | C | 0.47 | 25.6 | C | 0.44 | 25.2 | C | 0.47 | 25.8 | C |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L | 0.57 | 20.2 | C | 0.62 | 21.5 | C | 0.46 | 17.5 | B | 0.50 | 18.4 | B | 0.66 | 23.0 | C | 0.72 | 25.3 | C | 0.49 | 18.0 | B | 0.52 | 18.9 | B |
| | EB - TR | 0.10 | 12.0 | B | 0.11 | 12.0 | B | 0.10 | 12.0 | B | 0.11 | 12.0 | B | 0.09 | 11.9 | B | 0.10 | 11.9 | B | 0.07 | 11.8 | B | 0.08 | 11.8 | B |
| | WB - L | 0.33 | 15.1 | B | 0.35 | 15.6 | B | 0.30 | 14.9 | B | 0.33 | 15.2 | B | 0.44 | 16.9 | B | 0.48 | 17.6 | B | 0.33 | 15.0 | B | 0.36 | 15.4 | B |
| | WB - TR | 0.12 | 12.1 | B | 0.12 | 12.1 | B | 0.13 | 12.2 | B | 0.14 | 12.3 | B | 0.11 | 12.0 | B | 0.12 | 12.1 | B | 0.13 | 12.2 | B | 0.14 | 12.2 | B |
| | NB - LTR | 0.96 | 62.7 | E | 1.07 | 93.4 | F * | 0.84 | 40.8 | D | 0.92 | 52.2 | D * | 1.05 | 85.0 | F * | 1.21 | 141.2 | F * | 1.05 | 84.5 | F * | 1.21 | 142.0 | F * |
| | SB - LTR | 0.51 | 22.7 | C | 0.55 | 23.3 | C | 0.39 | 20.8 | C | 0.42 | 21.2 | C | 0.70 | 27.0 | C | 0.75 | 28.7 | C | 0.73 | 28.0 | C | 0.78 | 30.1 | C |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | EB - LT | 0.44 | 24.5 | C | 0.47 | 24.9 | C | 0.40 | 24.0 | C | 0.43 | 24.5 | C | 0.55 | 26.0 | C | 0.58 | 26.7 | C | 0.56 | 26.2 | C | 0.60 | 27.0 | C |
| | WB - T | 0.31 | 22.7 | C | 0.33 | 23.0 | C | 0.22 | 21.6 | C | 0.24 | 21.8 | C | 0.37 | 23.5 | C | 0.39 | 23.9 | C | 0.30 | 22.6 | C | 0.32 | 22.9 | C |
| | SB - L | 0.51 | 43.3 | D | 0.54 | 44.3 | D | 0.66 | 49.6 | D | 0.70 | 52.2 | D | 0.60 | 45.8 | D | 0.63 | 47.5 | D | 0.61 | 46.3 | D | 0.65 | 48.1 | D |
| | SB - R | 0.15 | 10.6 | B | 0.16 | 10.7 | B | 0.20 | 11.0 | B | 0.21 | 11.2 | B | 0.21 | 11.1 | B | 0.23 | 11.3 | B | 0.19 | 10.9 | B | 0.20 | 11.0 | B |
| 12. Platinum Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.31 | 23.0 | C | 0.33 | 23.2 | C | 0.35 | 27.1 | C | 0.37 | 27.5 | C | 0.39 | 24.1 | C | 0.42 | 24.5 | C | 0.35 | 23.5 | C | 0.37 | 23.8 | C |
| | NB - L | 0.39 | 14.6 | B | 0.47 | 16.9 | B | 0.39 | 12.1 | B | 0.46 | 14.0 | B | 0.41 | 15.0 | B | 0.51 | 17.7 | B | 0.43 | 15.3 | B | 0.52 | 18.0 | B |
| | NB - T | 0.41 | 13.2 | B | 0.47 | 14.1 | B | 0.47 | 11.3 | B | 0.52 | 12.0 | B | 0.51 | 14.5 | B | 0.58 | 15.7 | B | 0.52 | 14.7 | B | 0.59 | 16.0 | B |
| | SB - T | 0.43 | 13.5 | B | 0.50 | 14.4 | B | 0.49 | 11.6 | B | 0.54 | 12.3 | B | 0.45 | 13.7 | B | 0.52 | 14.7 | B | 0.45 | 13.6 | B | 0.50 | 14.5 | B |
| | SB - R | 0.14 | 10.4 | B | 0.15 | 10.5 | B | 0.12 | 8.0 | A | 0.13 | 8.1 | A | 0.21 | 11.1 | B | 0.22 | 11.2 | B | 0.19 | 10.8 | B | 0.20 | 11.0 | B |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.18 | 14.1 | B | 0.21 | 14.8 | B | 0.28 | 18.3 | C | 0.31 | 20.1 | C | 0.40 | 21.4 | C | 0.46 | 24.3 | C | 0.45 | 25.2 | D | 0.53 | 30.1 | D |
| | EB - R | 0.08 | 9.7 | A | 0.09 | 9.8 | A | 0.10 | 10.2 | B | 0.11 | 10.3 | B | 0.12 | 9.8 | A | 0.13 | 10.0 | A | 0.11 | 10.0 | B | 0.12 | 10.2 | B |
| | NB - L | 0.05 | 7.9 | A | 0.05 | 7.9 | A | 0.06 | 8.2 | A | 0.07 | 8.2 | A | 0.09 | 8.0 | A | 0.09 | 8.1 | A | 0.09 | 8.1 | A | 0.10 | 8.2 | A |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | 0.61 | 29.2 | C | 0.65 | 30.4 | C | 0.55 | 27.4 | C | 0.58 | 28.3 | C | 0.60 | 28.8 | C | 0.64 | 30.0 | C | 0.61 | 29.1 | C | 0.65 | 30.3 | C |
| | EB - R | 0.04 | 19.7 | B | 0.04 | 19.8 | B | 0.05 | 19.9 | B | 0.05 | 19.9 | B | 0.04 | 19.7 | B | 0.04 | 19.8 | B | 0.02 | 19.6 | B | 0.03 | 19.6 | B |
| | NB - L | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.03 | 9.6 | A | 0.04 | 9.7 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A |
| | NB - T | 0.27 | 11.6 | B | 0.29 | 11.8 | B | 0.39 | 13.0 | B | 0.42 | 13.4 | B | 0.48 | 14.2 | B | 0.51 | 14.6 | B | 0.50 | 14.4 | B | 0.53 | 15.0 | B |
| | SB - TR | 0.61 | 16.3 | B | 0.64 | 17.2 | B | 0.66 | 17.6 | B | 0.70 | 18.7 | B | 0.53 | 15.0 | B | 0.56 | 15.6 | B | 0.58 | 15.7 | B | 0.61 | 16.5 | B |
| 15. Staten Island Mall Drive (E-W) @ Marsh Avenue (N-S) | EB - L | 0.19 | 25.6 | C | 0.21 | 25.8 | C | 0.24 | 26.2 | C | 0.26 | 26.4 | C | 0.20 | 21.4 | C | 0.21 | 21.6 | C | 0.25 | 22.0 | C | 0.26 | 22.2 | C |
| | EB - R | 0.12 | 24.8 | C | 0.13 | 24.9 | C | 0.08 | 24.4 | C | 0.09 | 24.5 | C | 0.20 | 21.6 | C | 0.21 | 21.7 | C | 0.15 | 20.9 | C | 0.16 | 21.0 | C |
| | NB - L | 0.21 | 8.6 | A | 0.23 | 8.8 | A | 0.10 | 7.6 | A | 0.11 | 7.7 | A | 0.15 | 10.8 | B | 0.17 | 11.0 | B | 0.17 | 11.0 | B | 0.18 | 11.2 | B |
| | NB - T | 0.14 | 7.7 | A | 0.15 | 7.8 | A | 0.22 | 8.4 | A | 0.24 | 8.5 | A | 0.28 | 11.7 | B | 0.29 | 11.9 | B | 0.27 | 11.7 | B | 0.29 | 11.8 | B |
| | SB - TR | 0.18 | 8.0 | A | 0.19 | 8.1 | A | 0.29 | 8.9 | A | 0.31 | 9.0 | A | 0.22 | 11.1 | B | 0.24 | 11.2 | B | 0.25 | 11.3 | B | 0.26 | 11.5 | B |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.29 | 37.4 | D | 0.31 | 37.8 | D | 0.38 | 39.2 | D | 0.41 | 39.8 | D | 0.34 | 38.3 | D | 0.36 | 38.7 | D | 0.41 | 39.9 | D | 0.44 | 40.6 | D |
| | WB - LTR | 0.51 | 44.9 | D | 0.54 | 46.2 | D | 0.61 | 49.0 | D | 0.65 | 51.6 | D | 0.54 | 45.9 | D | 0.58 | 47.6 | D | 0.52 | 45.2 | D | 0.56 | 46.9 | D |
| | NB - L | 0.51 | 15.3 | B | 0.57 | 19.0 | B | 0.63 | 24.3 | C | 0.68 | 27.2 | C | 0.69 | 27.5 | C | 0.75 | 31.2 | C | 0.57 | 15.8 | B | 0.66 | 20.8 | C |
| | NB - TR | 0.48 | 14.1 | B | 0.52 | 14.6 | B | 0.54 | 14.8 | B | 0.58 | 15.4 | B | 0.54 | 14.8 | B | 0.59 | 15.4 | B | 0.57 | 15.1 | B | 0.61 | 15.8 | B |
| | SB - L | 0.03 | 20.4 | C | 0.03 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.3 | C | 0.04 | 20.4 | C | 0.04 | 20.5 | C | 0.04 | 20.6 | C |
| | SB - TR | 0.81 | 30.8 | C | 0.88 | 33.8 | C | 0.90 | 33.3 | C | 0.97 | 39.9 | D * | 0.96 | 35.0 | D | 1.04 | 53.8 | D * | 0.75 | 29.5 | C | 0.81 | 31.4 | C |
| 17. Lamberts Lane/ Christopher Lane (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.47 | 25.5 | C | 0.50 | 26.1 | C | 0.66 | 29.3 | C | 0.70 | 30.6 | C | 0.44 | 24.9 | C | 0.47 | 25.4 | C | 0.75 | 31.6 | C | 0.79 | 33.7 | C |
| | EB - R | 0.17 | 21.3 | C | 0.20 | 21.7 | C | 0.20 | 21.5 | C | 0.24 | 22.1 | C | 0.21 | 21.8 | C | 0.25 | 22.4 | C | 0.16 | 21.0 | C | 0.20 | 21.4 | C |
| | NB - L | 0.25 | 13.9 | B | 0.36 | 16.8 | B | 0.27 | 15.4 | B | 0.41 | 21.3 | C | 0.38 | 18.3 | B | 0.60 | 31.1 | C | 0.28 | 14.5 | B | 0.44 | 19.6 | B |
| | NB - TR | 0.42 | 13.2 | B | 0.45 | 13.6 | B | 0.47 | 13.8 | B | 0.51 | 14.3 | B | 0.51 | 14.3 | B | 0.56 | 14.9 | B | 0.49 | 14.0 | B | 0.53 | 14.5 | B |
| | SB - L | 0.22 | 12.9 | B | 0.26 | 13.9 | B | 0.32 | 14.8 | B | 0.38 | 16.7 | B | 0.39 | 17.4 | B | 0.49 | 22.2 | C | 0.28 | 14.7 | B | 0.35 | 17.0 | B |
| | SB - TR | 0.47 | 13.8 | B | 0.51 | 14.3 | B | 0.60 | 15.5 | B | 0.65 | 16.3 | B | 0.57 | 15.0 | B | 0.62 | 15.7 | B | 0.49 | 14.1 | B | 0.54 | 14.6 | B |

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|---|---------------|--------------------------|-----------------|-----|----------------------|-----------------|-----|---------------------------|-----------------|-----|-----------------------|-----------------|-----|--------------|-----------------|-----|--------------|-----------------|-----|------|-------|---|-------------|--------------|-----|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 18. Merrill Avenue/Morani Street (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.35 | 24.1 | C | 0.38 | 24.7 | C | 0.70 | 32.8 | C | 0.76 | 35.9 | D | 0.46 | 26.2 | C | 0.50 | 27.4 | C | 0.46 | 25.9 | C | 0.50 | 26.7 | C |
| | WB - LTR | 0.40 | 24.8 | C | 0.43 | 25.4 | C | 0.41 | 24.9 | C | 0.44 | 25.6 | C | 0.47 | 25.8 | C | 0.51 | 26.7 | C | 0.34 | 23.6 | C | 0.37 | 24.1 | C |
| | NB - L | 0.28 | 14.1 | B | 0.34 | 16.0 | B | 0.23 | 13.5 | B | 0.30 | 15.4 | B | 0.20 | 12.9 | B | 0.27 | 14.8 | B | 0.11 | 11.2 | B | 0.14 | 11.8 | B |
| | NB - TR | 0.52 | 14.6 | B | 0.57 | 15.3 | B | 0.53 | 14.6 | B | 0.57 | 15.3 | B | 0.64 | 16.2 | B | 0.70 | 17.5 | B | 0.61 | 15.8 | B | 0.68 | 17.0 | B |
| | SB - L | 0.12 | 11.3 | B | - | - | - | 0.22 | 12.7 | B | - | - | - | 0.29 | 14.7 | B | - | - | - | 0.26 | 14.2 | B | - | - | - |
| | SB - TR | 0.54 | 14.8 | B | 0.59 | 15.6 | B | 0.62 | 16.0 | B | 0.67 | 17.1 | B | 0.64 | 16.2 | B | 0.69 | 17.3 | B | 0.56 | 15.1 | B | 0.61 | 15.9 | B |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | 0.25 | 26.7 | C | <u>0.39</u> | <u>46.7</u> | D | 0.34 | 28.8 | C | <u>0.50</u> | <u>51.2</u> | D | 0.48 | 32.0 | C | <u>0.66</u> | <u>57.9</u> | E * | 0.23 | 26.1 | C | <u>0.35</u> | <u>45.2</u> | D |
| | EB - T | 0.56 | 31.2 | C | <u>0.83</u> | <u>63.2</u> | E * | 0.63 | 32.1 | C | <u>0.92</u> | <u>71.9</u> | E * | 0.46 | 28.3 | C | <u>0.68</u> | <u>50.5</u> | D | 0.54 | 30.4 | C | <u>0.79</u> | <u>59.0</u> | E * |
| | EB - R | 0.28 | 26.5 | C | <u>0.42</u> | <u>45.8</u> | D | 0.64 | 34.4 | C | <u>0.97</u> | <u>88.8</u> | F * | 0.88 | 49.0 | D | <u>1.33</u> | <u>213.0</u> | F * | 0.22 | 25.6 | C | <u>0.33</u> | <u>43.5</u> | D |
| | WB - L | 0.98 | 50.1 | D | <u>1.09</u> | <u>95.9</u> | F * | 1.01 | 34.3 | C | <u>1.29</u> | <u>177.0</u> | F * | 1.05 | 73.9 | E | <u>1.15</u> | <u>117.4</u> | F * | 1.04 | 64.1 | E | <u>1.15</u> | <u>119.9</u> | F * |
| | WB - TR | 0.49 | 18.2 | B | <u>0.48</u> | <u>21.2</u> | C | 0.74 | 20.1 | C | <u>0.78</u> | <u>27.4</u> | C | 0.69 | 20.9 | C | <u>0.69</u> | <u>24.7</u> | C | 0.42 | 17.1 | B | <u>0.42</u> | <u>20.1</u> | C |
| | NB - L | 0.50 | 36.0 | D | <u>0.71</u> | <u>60.1</u> | E * | 0.53 | 37.2 | D | <u>0.75</u> | <u>60.1</u> | E * | 0.52 | 36.5 | D | <u>0.73</u> | <u>55.4</u> | E * | 0.40 | 32.9 | C | <u>0.57</u> | <u>52.0</u> | D |
| | NB - T | 0.81 | 33.2 | C | <u>0.82</u> | <u>41.2</u> | D | 0.89 | 38.2 | D | <u>0.80</u> | <u>39.7</u> | D | 0.91 | 36.1 | D | <u>0.92</u> | <u>45.4</u> | D * | 0.89 | 35.6 | D | <u>0.91</u> | <u>44.7</u> | D |
| | SB - L | 0.30 | 29.6 | C | <u>0.42</u> | <u>46.1</u> | D | 0.21 | 29.3 | C | <u>0.28</u> | <u>40.0</u> | D | 0.22 | 30.2 | C | <u>0.32</u> | <u>46.6</u> | D | 0.21 | 30.2 | C | <u>0.31</u> | <u>47.3</u> | D |
| | SB - TR | 0.78 | 31.9 | C | <u>0.79</u> | <u>39.8</u> | D | 0.94 | 39.8 | D | <u>0.84</u> | <u>40.1</u> | D | 0.95 | 36.9 | D | <u>0.95</u> | <u>46.1</u> | D * | 0.75 | 31.4 | C | <u>0.76</u> | <u>39.0</u> | D |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.05 | 66.9 | E | 1.13 | 97.2 | F * | 1.05 | 66.5 | E | 1.13 | 96.2 | F * | 1.05 | 66.9 | E | 1.13 | 98.4 | F * | 0.79 | 43.3 | D | 0.85 | 47.3 | D |
| | NB - L | 0.88 | 63.3 | E | 0.95 | 75.1 | E * | 0.98 | 75.1 | E | 1.05 | 94.4 | F * | 0.87 | 59.5 | E | 0.94 | 70.2 | E * | 0.93 | 64.9 | E | 1.00 | 80.1 | F * |
| | NB - T | 0.53 | 8.3 | A | 0.58 | 8.7 | A | 0.52 | 8.0 | A | 0.56 | 8.4 | A | 0.59 | 8.8 | A | 0.64 | 9.4 | A | 0.63 | 9.2 | A | 0.68 | 9.9 | A |
| | SB - TR | 0.74 | 22.1 | C | 0.80 | 23.6 | C | 1.04 | 44.4 | D | 1.12 | 78.2 | E * | 0.98 | 28.4 | C | 1.06 | 54.9 | D * | 0.85 | 24.2 | C | 0.92 | 27.2 | C * |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.61 | 35.8 | D | 0.66 | 37.4 | D | 0.64 | 36.7 | D | 0.69 | 38.5 | D | 0.58 | 34.6 | C | 0.62 | 35.8 | D | 0.47 | 32.1 | C | 0.50 | 32.9 | C |
| | WB - R | 0.48 | 18.9 | B | 0.51 | 19.5 | B | 0.38 | 14.3 | B | 0.41 | 14.6 | B | 0.49 | 18.9 | B | 0.52 | 19.5 | B | 0.42 | 17.9 | B | 0.45 | 18.3 | B |
| | NB - TR | 0.68 | 22.6 | C | 0.73 | 23.7 | C | 0.78 | 27.4 | C | 0.84 | 29.0 | C | 0.73 | 23.5 | C | 0.80 | 24.9 | C | 0.81 | 24.8 | C | 0.89 | 27.3 | C |
| | SB - L | 0.88 | 64.0 | E | 0.94 | 72.9 | E * | 0.94 | 59.5 | E | 1.00 | 72.1 | E * | 1.05 | 94.2 | F | 1.12 | 116.3 | F * | 0.95 | 73.9 | E | 1.01 | 88.9 | F * |
| | SB - T | 0.51 | 9.0 | A | 0.56 | 9.5 | A | 0.70 | 11.2 | B | 0.75 | 12.2 | B | 0.69 | 11.0 | B | 0.75 | 12.1 | B | 0.57 | 9.6 | A | 0.62 | 10.2 | B |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.05 | 95.7 | F | 1.12 | 119.7 | F * | 1.05 | 63.0 | E | 1.12 | 92.8 | F * | 0.97 | 46.6 | D | 1.03 | 62.1 | E * | 0.78 | 40.0 | D | 0.83 | 43.3 | D |
| | WB - LTR | 0.13 | 25.7 | C | 0.14 | 25.9 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.14 | 25.8 | C | 0.17 | 26.2 | C | 0.18 | 26.3 | C |
| | NB - L | 1.05 | 85.7 | F | 1.13 | 112.2 | F * | 1.03 | 77.8 | E | 1.11 | 102.8 | F * | 1.05 | 76.3 | E | 1.13 | 105.4 | F * | 1.04 | 72.7 | E | 1.12 | 102.1 | F * |
| | NB - TR | 0.40 | 9.2 | A | 0.43 | 9.5 | A | 0.41 | 9.3 | A | 0.45 | 9.5 | A | 0.47 | 9.7 | A | 0.52 | 10.1 | B | 0.51 | 10.0 | B | 0.56 | 10.5 | B |
| | SB - TR | 0.71 | 28.8 | C | 0.78 | 30.2 | C | 0.84 | 28.9 | C | 0.91 | 31.2 | C | 0.98 | 35.0 | C | 1.07 | 64.7 | E * | 0.83 | 30.6 | C | 0.91 | 33.2 | C * |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.79 | 45.0 | D | 0.84 | 49.3 | D | 0.76 | 42.5 | D | 0.81 | 45.9 | D | 0.98 | 72.3 | E | 1.05 | 88.6 | F * | 0.81 | 46.2 | D | 0.86 | 51.4 | D |
| | NB - TR | 0.70 | 22.5 | C | 0.76 | 23.8 | C | 0.85 | 30.5 | C | 0.92 | 34.5 | C * | 0.86 | 26.4 | C | 0.93 | 30.5 | C * | 0.88 | 27.7 | C | 0.96 | 34.4 | C * |
| | SB - L | 1.00 | 93.3 | F | 1.07 | 110.9 | F * | 0.84 | 51.2 | D | 0.90 | 58.2 | E * | 1.05 | 100.9 | F | 1.12 | 122.9 | F * | 1.05 | 103.3 | F | 1.12 | 124.6 | F * |
| | SB - T | 0.40 | 7.9 | A | 0.44 | 8.2 | A | 0.53 | 9.0 | A | 0.57 | 9.4 | A | 0.54 | 9.1 | A | 0.59 | 9.6 | A | 0.45 | 8.3 | A | 0.49 | 8.6 | A |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | 0.66 | 22.7 | C | 0.73 | 24.7 | C | 0.69 | 24.0 | C | 0.75 | 25.8 | C | 0.88 | 27.3 | C | 0.96 | 35.2 | D * | 0.74 | 24.1 | C | 0.81 | 26.6 | C |
| | EB - LR | 0.71 | 24.1 | C | 0.78 | 26.6 | C | 0.74 | 25.7 | C | 0.81 | 28.4 | C | 0.93 | 31.5 | C | 1.02 | 48.5 | D * | 0.81 | 27.1 | C | 0.89 | 31.9 | C |
| | NB - T | 0.71 | 23.3 | C | 0.76 | 24.9 | C | 0.76 | 23.5 | C | 0.82 | 25.3 | C | 0.87 | 27.9 | C | 0.94 | 33.1 | C * | 0.72 | 23.4 | C | 0.78 | 25.0 | C |
| | SB - T | 0.77 | 23.9 | C | 0.84 | 26.0 | C | 0.90 | 26.3 | C | 0.98 | 32.8 | C * | 0.89 | 26.5 | C | 0.97 | 32.9 | C * | 0.84 | 25.4 | C | 0.92 | 29.4 | C * |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | EB - L | 0.13 | 22.0 | C | 0.16 | 22.8 | C | 0.31 | 25.6 | C | 0.32 | 25.9 | C | 0.23 | 25.8 | C | 0.25 | 26.1 | C | 0.21 | 24.7 | C | 0.22 | 25.0 | C |
| | EB - TR | 0.41 | 23.8 | C | 0.43 | 24.1 | C | 0.45 | 22.8 | C | 0.48 | 23.2 | C | 0.38 | 23.5 | C | 0.41 | 23.8 | C | 0.46 | 24.3 | C | 0.49 | 24.6 | C |
| | WB - L | 0.18 | 22.4 | C | 0.19 | 22.8 | C | 0.11 | 20.0 | B | 0.12 | 20.2 | C | 0.10 | 21.1 | C | 0.11 | 21.2 | C | 0.15 | 22.0 | C | 0.17 | 22.3 | C |
| | WB - T | 0.76 | 33.6 | C | 0.81 | 36.1 | D | 0.99 | 53.3 | D | 1.06 | 71.1 | E * | 0.95 | 46.8 | D | 1.01 | 59.8 | E * | 0.95 | 48.1 | D | 1.01 | 61.7 | E * |
| | NB - R | 0.42 | 12.8 | B | 0.45 | 13.3 | B | 0.40 | 11.2 | B | 0.43 | 11.5 | B | 0.51 | 13.7 | B | 0.56 | 14.4 | B | 0.43 | 12.6 | B | 0.46 | 13.0 | B |
| | NB - L | 0.32 | 34.0 | C | 0.34 | 34.2 | C | 0.50 | 35.4 | D | 0.54 | 35.8 | D | 0.33 | 33.5 | C | 0.35 | 33.7 | C | 0.43 | 34.9 | C | 0.45 | 35.2 | D |
| | NB - TR | 0.79 | 31.8 | C | 0.85 | 34.4 | C | 0.97 | 43.8 | D | 1.04 | 61.5 | E * | 1.02 | 49.1 | D | 1.09 | 77.1 | E * | 0.88 | 34.3 | C | 0.94 | 39.9 | D * |
| | SB - L | 0.97 | 60.1 | E | 1.03 | 75.2 | E * | 1.01 | 62.0 | E | 1.08 | 83.4 | F * | 1.05 | 71.2 | E | 1.11 | 95.9 | F * | 0.93 | 50.1 | D | 0.99 | 60.1 | E * |
| | SB - TR | 0.59 | 26.8 | C | 0.65 | 27.8 | C | 0.82 | 31.7 | C | 0.90 | 34.5 | C * | 0.60 | 26.4 | C | 0.67 | 27.4 | C | 0.68 | 28.0 | C | 0.76 | 29.5 | C |

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|---|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-----------|--------------|-----|------|------|---|------|------|---|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 26. Barlow Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.19 | 21.4 | C | 0.21 | 21.7 | C | 0.39 | 28.1 | C | 0.42 | 28.8 | C | 0.29 | 22.8 | C | 0.31 | 23.2 | C | 0.28 | 22.8 | C | 0.30 | 23.1 | C |
| | WB - LTR | 0.34 | 23.5 | C | 0.36 | 23.9 | C | 0.62 | 34.0 | C | 0.67 | 36.0 | D | 0.45 | 25.5 | C | 0.48 | 26.1 | C | 0.43 | 25.0 | C | 0.46 | 25.6 | C |
| | NB - LTR | 0.46 | 13.9 | B | 0.50 | 14.5 | B | 0.49 | 11.6 | B | 0.53 | 12.2 | B | 0.52 | 14.6 | B | 0.56 | 15.2 | B | 0.45 | 13.7 | B | 0.49 | 14.2 | B |
| | SB - LTR | 0.46 | 13.9 | B | 0.52 | 14.6 | B | 0.51 | 11.9 | B | 0.57 | 12.6 | B | 0.47 | 14.0 | B | 0.53 | 14.9 | B | 0.46 | 13.8 | B | 0.51 | 14.6 | B |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.22 | 22.0 | C | 0.26 | 22.5 | C | 0.35 | 27.4 | C | 0.37 | 28.0 | C | 0.23 | 22.0 | C | 0.24 | 22.2 | C | 0.24 | 22.1 | C | 0.25 | 22.3 | C |
| | WB - LTR | 0.17 | 21.2 | C | 0.17 | 21.3 | C | 0.33 | 27.2 | C | 0.35 | 27.6 | C | 0.20 | 21.6 | C | 0.21 | 21.8 | C | 0.21 | 21.8 | C | 0.23 | 22.0 | C |
| | NB - LTR | 0.38 | 13.0 | B | 0.42 | 13.4 | B | 0.43 | 11.0 | B | 0.47 | 11.3 | B | 0.42 | 13.4 | B | 0.45 | 13.8 | B | 0.36 | 12.7 | B | 0.39 | 13.1 | B |
| | SB - LTR | 0.79 | 21.5 | C | 0.88 | 26.4 | C | 0.85 | 20.2 | C | 0.94 | 26.9 | C | 0.82 | 22.2 | C | 0.92 | 29.4 | C | 0.85 | 22.8 | C | 0.95 | 32.1 | C |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.75 | 30.5 | C | 0.81 | 32.8 | C | 0.91 | 35.1 | D | 0.97 | 43.0 | D | 0.87 | 33.4 | C | 0.93 | 38.4 | D | 0.89 | 34.6 | C | 0.96 | 41.5 | D |
| | NB - T | 0.66 | 28.8 | C | 0.70 | 30.0 | C | 0.66 | 27.3 | C | 0.70 | 28.3 | C | 0.60 | 27.2 | C | 0.64 | 28.1 | C | 0.54 | 25.9 | C | 0.57 | 26.6 | C |
| | NB - R | 0.26 | 3.8 | A | 0.28 | 3.9 | A | 0.30 | 3.8 | A | 0.32 | 3.9 | A | 0.27 | 3.8 | A | 0.29 | 3.9 | A | 0.31 | 4.0 | A | 0.33 | 4.1 | A |
| | SB - L | 0.60 | 15.8 | B | 0.67 | 17.9 | B | 0.58 | 15.5 | B | 0.65 | 17.6 | B | 0.62 | 15.6 | B | 0.69 | 17.7 | B | 0.57 | 14.2 | B | 0.63 | 15.7 | B |
| | SB - T | 0.43 | 14.1 | B | 0.46 | 14.5 | B | 0.46 | 14.6 | B | 0.49 | 15.0 | B | 0.56 | 16.1 | B | 0.6 | 16.9 | B | 0.49 | 14.9 | B | 0.52 | 15.5 | B |
| | WB - LR | 0.60 | 24.7 | C | 0.64 | 25.7 | C | 0.95 | 34.2 | C | 1.01 | 46.2 | D | 0.74 | 27.6 | C | 0.79 | 29.3 | C | 0.77 | 28.2 | C | 0.82 | 30.2 | C |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | NB - T | 0.75 | 33.1 | C | 0.8 | 35.6 | D | 0.83 | 37.1 | D | 0.89 | 41.9 | D | 0.72 | 31.8 | C | 0.77 | 33.8 | C | 0.71 | 31.3 | C | 0.76 | 33.3 | C |
| | NB - R | 0.33 | 3.4 | A | 0.35 | 3.5 | A | 0.39 | 3.6 | A | 0.41 | 3.8 | A | 0.37 | 3.6 | A | 0.40 | 3.8 | A | 0.35 | 3.5 | A | 0.37 | 3.6 | A |
| | SB - L | 0.45 | 15.5 | B | 0.51 | 17.0 | B | 0.50 | 17.2 | B | 0.57 | 19.5 | B | 0.54 | 16.3 | B | 0.60 | 18.1 | B | 0.37 | 14.0 | B | 0.41 | 15.0 | B |
| | SB - T | 0.56 | 18.0 | B | 0.60 | 18.7 | B | 0.67 | 20.1 | C | 0.72 | 21.3 | C | 0.62 | 18.6 | B | 0.66 | 19.6 | B | 0.62 | 19.0 | B | 0.67 | 20.0 | B |
| | WB - LT | 0.08 | 10.5 | B | 0.09 | 10.9 | B | 0.08 | 10.9 | B | 0.09 | 11.3 | B | 0.10 | 10.5 | B | 0.11 | 10.8 | B | 0.07 | 10.2 | B | 0.08 | 10.4 | B |
| | NB - LR | 0.40 | 40.3 | E | 0.48 | 50.5 | F | 0.50 | 48.6 | E | 0.63 | 68.6 | F | 0.36 | 31.8 | D | 0.44 | 39.4 | E | 0.41 | 33.8 | D | 0.49 | 40.9 | E |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L | 0.57 | 19.2 | B | 0.62 | 20.1 | C | 0.64 | 20.9 | C | 0.70 | 22.2 | C | 0.76 | 23.1 | C | 0.82 | 25.8 | C | 0.70 | 21.3 | C | 0.76 | 23.1 | C |
| | EB - TR | 0.76 | 41.5 | D | 0.83 | 46.1 | D | 0.91 | 49.9 | D | 0.97 | 58.9 | E | 0.70 | 37.8 | D | 0.75 | 39.4 | D | 0.80 | 41.6 | D | 0.85 | 44.9 | D |
| | WB - L | 0.53 | 18.3 | B | 0.54 | 18.8 | B | 0.69 | 21.8 | C | 0.71 | 22.0 | C | 0.62 | 18.8 | B | 0.64 | 19.4 | B | 0.72 | 20.7 | C | 0.74 | 21.5 | C |
| | WB - TR | 0.28 | 29.7 | C | 0.30 | 29.9 | C | 0.43 | 30.8 | C | 0.46 | 31.1 | C | 0.35 | 30.1 | C | 0.37 | 30.4 | C | 0.37 | 30.4 | C | 0.39 | 30.6 | C |
| | NB - L | 0.15 | 20.0 | B | 0.16 | 20.3 | C | 0.39 | 30.3 | C | 0.41 | 31.5 | C | 0.41 | 32.6 | C | 0.43 | 34.3 | C | 0.46 | 36.1 | D | 0.49 | 38.9 | D |
| | NB - TR | 0.67 | 23.5 | C | 0.74 | 25.4 | C | 0.68 | 22.4 | C | 0.73 | 23.9 | C | 0.78 | 26.8 | C | 0.86 | 30.9 | C | 0.76 | 26.0 | C | 0.83 | 29.0 | C |
| | SB - LTR | 0.89 | 27.5 | C | 0.96 | 33.3 | C | 1.05 | 50.0 | D | 1.13 | 83.6 | F | 1.05 | 52.6 | D | 1.14 | 90.9 | F | 1.05 | 52.8 | D | 1.14 | 91.1 | F |
| | WB - LR | 0.69 | 20.0 | C | 0.74 | 21.8 | C | 0.86 | 29.6 | C | 0.92 | 35.8 | D | 0.69 | 19.8 | B | 0.73 | 21.4 | C | 0.68 | 19.6 | B | 0.73 | 21.2 | C |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | 0.59 | 16.4 | B | 0.66 | 18.2 | B | 1.05 | 48.9 | D | 1.20 | 110.8 | F | 0.63 | 16.9 | B | 0.70 | 18.9 | B | 0.90 | 24.1 | C | 1.00 | 39.1 | D |
| | NB - L | 0.09 | 20.3 | C | 0.10 | 20.3 | C | 0.16 | 21.1 | C | 0.17 | 21.2 | C | 0.13 | 20.7 | C | 0.14 | 20.8 | C | 0.19 | 21.4 | C | 0.20 | 21.5 | C |
| | NB - R | 0.26 | 22.6 | C | 0.28 | 22.9 | C | 0.33 | 23.9 | C | 0.36 | 24.3 | C | 0.40 | 25.0 | C | 0.43 | 25.6 | C | 0.33 | 23.7 | C | 0.35 | 24.0 | C |
| | WB - L | 0.13 | 9.4 | A | 0.14 | 9.7 | A | 0.15 | 9.2 | A | 0.17 | 9.5 | A | 0.11 | 8.7 | A | 0.12 | 8.9 | A | 0.11 | 8.8 | A | 0.12 | 9.0 | A |
| 33. Victory Boulevard (E-W) @ South Gannon Avenue (SB) (Unsignalized) | SB - L | 0.19 | 11.9 | B | 0.21 | 12.3 | B | 0.23 | 12.2 | B | 0.26 | 12.6 | B | 0.18 | 11.9 | B | 0.20 | 12.3 | B | 0.20 | 12.9 | B | 0.23 | 13.4 | B |
| | WB - L | 0.18 | 26.8 | C | 0.20 | 26.8 | C | 0.28 | 30.3 | C | 0.32 | 31.6 | C | 0.20 | 27.6 | C | 0.23 | 27.9 | C | 0.15 | 26.2 | C | 0.18 | 26.2 | C |
| 34. Victory Boulevard (E-W) @ North Gannon Avenue (NB) | EB - T | 0.46 | 29.4 | C | 0.49 | 29.3 | C | 0.38 | 28.1 | C | 0.40 | 27.8 | C | 0.34 | 27.6 | C | 0.37 | 27.3 | C | 0.36 | 27.7 | C | 0.38 | 27.5 | C |
| | WB - TR | 0.44 | 29.0 | C | 0.46 | 28.8 | C | 0.57 | 31.3 | C | 0.60 | 31.3 | C | 0.49 | 29.8 | C | 0.52 | 29.8 | C | 0.40 | 28.5 | C | 0.43 | 28.3 | C |
| | NB - L | 0.42 | 17.1 | B | 0.46 | 18.1 | B | 0.56 | 19.3 | B | 0.61 | 20.8 | C | 0.56 | 19.3 | B | 0.61 | 20.7 | C | 0.49 | 18.0 | B | 0.53 | 19.2 | B |
| | NB - TR | 0.10 | 13.6 | B | 0.11 | 14.1 | B | 0.15 | 14.0 | B | 0.16 | 14.6 | B | 0.14 | 13.9 | B | 0.15 | 14.5 | B | 0.12 | 13.7 | B | 0.13 | 14.3 | B |

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|--|------------|--------------------------|--------------|-----|----------------------|--------------|------------|---------------------------|--------------|-----|-----------------------|--------------|------------|-----------|--------------|-----|-------------|--------------|------------|------|------|---|-------------|-------------|------------|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.92 | 53.1 | D | 1.03 | 81.4 | F * | 0.94 | 47.4 | D | 1.05 | 77.1 | E * | 0.74 | 29.0 | C | 0.83 | 43.9 | D | 0.80 | 37.5 | D | 0.89 | 48.9 | D |
| | EB - TR | 0.44 | 25.2 | C | 0.47 | 25.5 | C | 0.51 | 29.5 | C | 0.54 | 30.0 | C | 0.38 | 24.5 | C | 0.41 | 24.8 | C | 0.38 | 24.5 | C | 0.41 | 24.8 | C |
| | WB - L | 0.75 | 29.8 | C | 0.88 | 41.8 | D | 0.72 | 20.6 | C | 0.81 | 24.0 | C | 0.82 | 33.0 | C | 0.96 | 51.5 | D | 0.72 | 29.3 | C | 0.84 | 38.4 | D |
| | WB - TR | 0.74 | 32.1 | C | 0.78 | 34.0 | C | 0.92 | 45.6 | D | 0.98 | 55.2 | E * | 0.74 | 31.7 | C | 0.79 | 33.4 | C | 0.61 | 29.0 | C | 0.65 | 30.0 | C |
| | NB - L | 0.09 | 16.3 | B | 0.11 | 16.4 | B | 0.14 | 16.8 | B | 0.20 | 17.5 | B | 0.14 | 16.7 | B | 0.18 | 17.2 | B | 0.05 | 16.0 | B | 0.07 | 16.1 | B |
| | NB - TR | 1.05 | 53.6 | D | 1.16 | 101.6 | F * | 1.05 | 53.8 | D | 1.15 | 95.0 | F * | 1.05 | 54.1 | D | 1.18 | 108.5 | F * | 1.05 | 54.3 | D | 1.18 | 107.9 | F * |
| | SB - L | 0.77 | 65.0 | E | 0.82 | 73.5 | E * | 0.89 | 69.6 | E | 0.95 | 83.2 | F * | 0.74 | 56.2 | E | 0.77 | 61.5 | E * | 0.63 | 47.0 | D | 0.68 | 52.4 | D |
| | SB - T | 0.68 | 25.8 | C | 0.74 | 27.9 | C | 0.88 | 32.3 | C | 0.95 | 39.4 | D * | 0.78 | 28.8 | C | 0.85 | 32.6 | C | 0.66 | 25.1 | C | 0.71 | 26.9 | C |
| | SB - R | 0.37 | 19.8 | B | 0.39 | 20.2 | C | 0.69 | 25.2 | C | 0.74 | 26.5 | C | 0.35 | 19.4 | B | 0.38 | 19.8 | B | 0.31 | 18.9 | B | 0.33 | 19.2 | B |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L | 0.70 | 21.7 | C | 0.78 | 26.2 | C | 0.70 | 20.6 | C | 0.78 | 24.2 | C | 0.78 | 26.5 | C | 0.87 | 36.0 | D | 0.72 | 22.1 | C | 0.80 | 26.8 | C |
| | EB - TR | 0.45 | 15.6 | B | 0.48 | 16.1 | B | 0.41 | 15.0 | B | 0.45 | 15.4 | B | 0.36 | 14.5 | B | 0.40 | 15.0 | B | 0.38 | 14.6 | B | 0.42 | 15.2 | B |
| | WB - LTR | 0.83 | 32.1 | C | 0.89 | 36.0 | D | 0.77 | 30.3 | C | 0.82 | 32.6 | C | 0.88 | 33.5 | C | 0.95 | 39.3 | D * | 0.74 | 29.6 | C | 0.79 | 31.6 | C |
| | NB - LTR | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B |
| | SB - LTR | 0.71 | 28.0 | C | 0.78 | 30.9 | C | 0.97 | 36.5 | D | 1.05 | 57.7 | E | 0.69 | 27.2 | C | 0.77 | 29.9 | C | 0.61 | 25.4 | C | 0.68 | 27.1 | C |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | EB - TR | 0.66 | 17.6 | B | 0.71 | 18.9 | B | 0.65 | 17.8 | B | 0.69 | 19.1 | B | 0.83 | 21.6 | C | 0.89 | 24.8 | C | 0.68 | 17.8 | B | 0.72 | 19.2 | B |
| | WB - LT | 0.48 | 14.2 | B | 0.54 | 15.2 | B | 0.99 | 32.5 | C | 1.10 | 72.8 | E * | 0.75 | 19.2 | B | 0.84 | 23.3 | C | 0.66 | 17.2 | B | 0.74 | 19.4 | B |
| | NB - LR | 0.28 | 22.8 | C | 0.30 | 23.1 | C | 0.37 | 34.7 | C | 0.39 | 35.3 | D | 0.23 | 22.1 | C | 0.25 | 22.4 | C | 0.27 | 22.6 | C | 0.28 | 22.8 | C |
| 38. Forest Avenue (E-W) @ Richmond Avenue-Morningstar Road (N-S) | EB - L | 0.33 | 23.5 | C | <u>0.40</u> | <u>28.2</u> | <u>C</u> | 0.32 | 23.5 | C | <u>0.40</u> | <u>28.2</u> | <u>C</u> | 0.33 | 23.2 | C | <u>0.41</u> | <u>27.7</u> | <u>C</u> | 0.25 | 21.9 | C | <u>0.30</u> | <u>25.8</u> | <u>C</u> |
| | EB - TR | 0.77 | 28.8 | C | <u>0.97</u> | <u>46.4</u> | <u>D</u> * | 0.76 | 28.5 | C | <u>0.96</u> | <u>44.8</u> | <u>D</u> * | 0.84 | 30.6 | C | <u>1.06</u> | <u>70.8</u> | <u>E</u> * | 0.79 | 29.1 | C | <u>1.00</u> | <u>51.1</u> | <u>D</u> * |
| | WB - L | 0.71 | 26.1 | C | 0.91 | 56.9 | E * | 0.92 | 48.8 | D | 1.20 | 138.7 | F * | 0.82 | 40.4 | D | 1.00 | 75.3 | E * | 0.79 | 35.3 | D | 0.98 | 70.4 | E * |
| | WB - TR | 0.37 | 12.2 | B | 0.45 | 16.5 | B | 0.42 | 12.7 | B | 0.51 | 17.2 | B | 0.40 | 12.5 | B | 0.49 | 16.9 | B | 0.38 | 12.3 | B | 0.46 | 16.5 | B |
| | NB - L | 0.74 | 41.0 | D | <u>0.55</u> | <u>21.6</u> | <u>C</u> | 0.59 | 34.7 | C | <u>0.41</u> | <u>19.9</u> | <u>B</u> | 0.72 | 39.5 | D | <u>0.53</u> | <u>21.3</u> | <u>C</u> | 0.81 | 47.6 | D | <u>0.57</u> | <u>22.6</u> | <u>C</u> |
| | NB - T | 0.43 | 25.5 | C | 0.40 | 20.8 | C | 0.49 | 26.6 | C | 0.44 | 21.6 | C | 0.50 | 26.6 | C | 0.46 | 21.7 | C | 0.50 | 26.5 | C | 0.46 | 21.6 | C |
| | NB - R | 0.33 | 12.9 | B | 0.32 | 10.7 | B | 0.28 | 12.3 | B | 0.27 | 10.2 | B | 0.30 | 12.5 | B | 0.29 | 10.4 | B | 0.30 | 12.4 | B | 0.29 | 10.3 | B |
| | SB - LTR | 0.60 | 29.1 | C | 0.80 | 43.4 | D | 0.80 | 34.6 | C | 1.00 | 64.3 | E * | 0.67 | 31.2 | C | 0.86 | 47.0 | D | 0.84 | 36.4 | D | 0.98 | 58.2 | E * |

Notes:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, Df-Analysis considers a Defacto Left Lane on this approach

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS of E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

DEIS VERSION

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | |
|--|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-----------|--------------|-----|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.04 | 24.7 | C | 0.04 | 24.7 | C | 0.05 | 24.7 | C | 0.05 | 24.7 | C | 0.04 | 24.7 | C | 0.04 | 24.7 | C |
| | WB - L | 0.37 | 29.6 | C | 0.40 | 30.0 | C | 0.37 | 28.6 | C | 0.39 | 28.9 | C | 0.48 | 30.4 | C | 0.51 | 31.1 | C |
| | WB - LT | 0.40 | 30.3 | C | 0.43 | 30.8 | C | 0.39 | 29.0 | C | 0.42 | 29.4 | C | 0.51 | 31.2 | C | 0.55 | 31.9 | C |
| | WB - R | 0.62 | 20.3 | C | 0.66 | 21.5 | C | 0.91 | 29.4 | C | 0.98 | 39.3 | D * | 0.92 | 33.1 | C | 0.98 | 43.6 | D * |
| | NB - L | 0.02 | 31.5 | C | 0.02 | 31.5 | C | 0.02 | 27.4 | C | 0.02 | 27.4 | C | 0.02 | 31.4 | C | 0.02 | 31.4 | C |
| | NB - TR | 0.72 | 24.6 | C | 0.79 | 25.9 | C | 0.73 | 27.8 | C | 0.79 | 29.1 | C | 0.80 | 25.8 | C | 0.87 | 27.7 | C |
| | SB - L | 1.05 | 101.1 | F | 1.13 | 125.0 | F * | 0.72 | 41.9 | D | 0.77 | 45.0 | D | 1.05 | 92.4 | F | 1.13 | 118.1 | F * |
| | SB - TR | 0.70 | 24.6 | C | 0.77 | 26.1 | C | 1.02 | 51.6 | D | 1.10 | 80.1 | F * | 0.91 | 31.3 | C | 1.00 | 42.6 | D * |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.8 | C | 0.03 | 23.7 | C | 0.03 | 23.8 | C |
| | NB - TR | 0.55 | 22.7 | C | 0.60 | 23.5 | C | 0.54 | 22.6 | C | 0.59 | 23.3 | C | 0.72 | 27.0 | C | 0.79 | 28.4 | C |
| | SB - L | 0.89 | 51.6 | D | 0.95 | 58.9 | E * | 0.71 | 37.1 | D | 0.76 | 37.8 | D | 1.03 | 67.0 | E | 1.10 | 90.4 | F * |
| | SB - T | 0.37 | 9.0 | A | 0.41 | 9.3 | A | 0.53 | 10.2 | B | 0.58 | 10.6 | B | 0.50 | 10.0 | A | 0.55 | 10.4 | B |
| 3. SI Mall East Driveway (E-W) @ Richmond Avenue (N-S) | WB - L | 0.24 | 21.7 | C | 0.26 | 21.9 | C | 0.16 | 20.9 | C | 0.17 | 21.0 | C | 0.32 | 22.7 | C | 0.34 | 22.9 | C |
| | NB - T | 0.40 | 12.8 | B | 0.44 | 13.2 | B | 0.38 | 12.6 | B | 0.42 | 12.9 | B | 0.49 | 13.6 | B | 0.54 | 14.2 | B |
| | SB - L | 0.13 | 20.5 | C | 0.14 | 20.6 | C | 0.27 | 21.8 | C | 0.28 | 21.9 | C | 0.35 | 22.8 | C | 0.38 | 23.0 | C |
| | SB - T | 0.38 | 12.6 | B | 0.41 | 12.9 | B | 0.50 | 13.8 | B | 0.54 | 14.2 | B | 0.47 | 13.4 | B | 0.51 | 13.9 | B |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.55 | 31.6 | C | 0.59 | 32.3 | C | 0.74 | 36.7 | D | 0.79 | 38.8 | D | 0.79 | 38.1 | D | 0.84 | 40.9 | D |
| | WB - R | 0.56 | 35.0 | C | 0.60 | 36.3 | D | 0.22 | 27.8 | C | 0.24 | 28.0 | C | 0.39 | 30.6 | C | 0.42 | 31.1 | C |
| | NB - T | 0.56 | 19.5 | B | 0.62 | 20.4 | C | 0.62 | 19.0 | B | 0.67 | 20.0 | B | 0.76 | 25.5 | C | 0.83 | 24.6 | C |
| | NB - R | 0.32 | 17.2 | B | 0.34 | 17.5 | B | 0.30 | 15.7 | B | 0.32 | 15.9 | B | 0.40 | 18.0 | B | 0.42 | 18.3 | B |
| | SB - L | 0.70 | 48.5 | D | 0.74 | 50.8 | D | 0.69 | 52.1 | D | 0.74 | 55.0 | D | 0.52 | 42.7 | D | 0.55 | 43.5 | D |
| | SB - T | 0.34 | 8.4 | A | 0.38 | 8.6 | A | 0.42 | 9.0 | A | 0.46 | 9.3 | A | 0.41 | 8.9 | A | 0.45 | 9.3 | A |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - L | 0.54 | 30.4 | C | 0.59 | 31.6 | C | 0.81 | 35.2 | D | 0.88 | 39.1 | D | 0.62 | 30.3 | C | 0.69 | 31.9 | C |
| | WB - LR | 0.66 | 34.0 | C | 0.73 | 36.4 | D | 0.94 | 45.5 | D | 1.02 | 61.6 | E * | 0.97 | 53.5 | D | 1.06 | 77.5 | E * |
| | NB - T | 0.78 | 23.2 | C | 0.85 | 25.2 | C | 0.75 | 22.3 | C | 0.81 | 23.7 | C | 0.99 | 34.9 | C | 1.08 | 64.1 | E * |
| | NB - R | 0.32 | 17.0 | B | 0.37 | 17.6 | B | 0.40 | 17.9 | B | 0.43 | 18.4 | B | 0.45 | 18.1 | B | 0.46 | 18.2 | B |
| | SB - L | 0.30 | 45.0 | D | 0.32 | 45.8 | D | 0.46 | 47.1 | D | 0.50 | 48.3 | D | 0.51 | 49.2 | D | 0.55 | 50.5 | D |
| | SB - T | 0.66 | 13.9 | B | 0.72 | 14.9 | B | 0.82 | 16.7 | B | 0.88 | 18.6 | B | 0.80 | 16.3 | B | 0.87 | 18.2 | B |
| 6. Richmond Hill Road (E-W) @ SI Mall North Driveway (N-S) | EB - TR | 0.27 | 11.3 | B | 0.29 | 11.5 | B | 0.30 | 11.6 | B | 0.32 | 11.8 | B | 0.31 | 11.7 | B | 0.34 | 12.0 | B |
| | WB - LT | 0.37 | 12.5 | B | 0.40 | 12.8 | B | 0.46 | 13.3 | B | 0.49 | 13.8 | B | 0.45 | 13.4 | B | 0.50 | 14.1 | B |
| | NB - L | 0.41 | 24.5 | C | 0.43 | 24.9 | C | 0.51 | 26.4 | C | 0.54 | 27.1 | C | 0.77 | 35.2 | D | 0.82 | 38.3 | D |
| | NB - R | 0.12 | 20.6 | C | 0.13 | 20.7 | C | 0.24 | 22.1 | C | 0.25 | 22.3 | C | 0.24 | 22.2 | C | 0.26 | 22.5 | C |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | EB - T | 0.43 | 24.7 | C | 0.46 | 25.3 | C | 0.38 | 23.7 | C | 0.40 | 24.1 | C | 0.44 | 24.7 | C | 0.47 | 25.3 | C |
| | EB - R | 0.42 | 25.4 | C | 0.45 | 26.1 | C | 0.72 | 34.0 | C | 0.77 | 36.6 | D | 0.54 | 28.0 | C | 0.58 | 29.0 | C |
| | WB - L | 0.46 | 7.9 | A | 0.50 | 8.6 | A | 0.46 | 7.7 | A | 0.50 | 8.3 | A | 0.52 | 8.7 | A | 0.56 | 9.6 | A |
| | WB - T | 0.22 | 5.1 | A | 0.23 | 5.3 | A | 0.31 | 5.8 | A | 0.33 | 6.0 | A | 0.23 | 5.2 | A | 0.25 | 5.3 | A |
| | NB - L | 0.64 | 40.0 | D | 0.68 | 41.3 | D | 0.76 | 44.8 | D | 0.81 | 47.8 | D | 0.91 | 56.3 | E | 0.97 | 66.4 | E * |
| | NB - R | 0.54 | 15.1 | B | 0.57 | 15.8 | B | 0.52 | 14.7 | B | 0.55 | 15.3 | B | 0.57 | 15.3 | B | 0.60 | 16.0 | B |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | EB - L | 0.43 | 23.3 | C | 0.47 | 24.4 | C | 0.48 | 24.9 | C | 0.52 | 26.3 | C | 0.45 | 23.8 | C | 0.50 | 25.1 | C |
| | EB - TR | 0.59 | 27.3 | C | 0.63 | 28.4 | C | 0.51 | 24.3 | C | 0.55 | 25.1 | C | 0.63 | 27.0 | C | 0.67 | 28.2 | C |
| | WB - LTR | 1.05 | 67.1 | E | 1.18 | 122.2 | F * | 1.05 | 65.8 | E | 1.17 | 118.2 | F * | 1.05 | 64.1 | E | 1.19 | 123.5 | F * |
| | NB - L | 0.17 | 46.8 | D | 0.19 | 47.8 | D | 0.29 | 48.7 | D | 0.31 | 48.9 | D | 0.23 | 47.5 | D | 0.24 | 47.6 | D |
| | NB - TR | 0.90 | 44.4 | D | 1.00 | 61.1 | E * | 0.96 | 49.9 | D | 1.06 | 76.0 | E * | 1.05 | 65.8 | E | 1.17 | 117.6 | F * |
| | SB - L | 0.51 | 44.5 | D | 0.64 | 51.1 | D | 0.77 | 51.5 | D | 0.85 | 55.5 | E * | 0.52 | 50.2 | D | 0.56 | 50.8 | D |
| | SB - TR | 1.05 | 67.6 | E | 1.17 | 116.4 | F * | 1.05 | 64.3 | E | 1.14 | 102.6 | F * | 1.05 | 64.3 | E | 1.16 | 112.2 | F * |

This table has been updated for the FEIS.

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|--|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-----------|--------------|-----|------|------|---|------|-------|-----|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 9. Platinum Avenue (E-W) @ SI Mall Southwest Driveway (N-S) | EB - Defl | 0.22 | 1.0 | A | 0.24 | 1.1 | A | 0.19 | 0.7 | A | 0.21 | 0.8 | A | 0.26 | 1.4 | A | 0.29 | 1.7 | A | 0.17 | 1.1 | A | 0.18 | 1.3 | A |
| | EB - T | 0.25 | 0.3 | A | 0.26 | 0.3 | A | 0.21 | 0.2 | A | 0.23 | 0.3 | A | 0.27 | 0.3 | A | 0.29 | 0.4 | A | 0.18 | 0.2 | A | 0.19 | 0.2 | A |
| | WB - TR | 0.31 | 11.6 | B | 0.33 | 11.8 | B | 0.27 | 11.2 | B | 0.28 | 11.4 | B | 0.35 | 11.8 | B | 0.36 | 12.0 | B | 0.35 | 11.9 | B | 0.37 | 12.1 | B |
| | SB - R | 0.38 | 24.1 | C | 0.41 | 24.6 | C | 0.35 | 23.7 | C | 0.38 | 24.0 | C | 0.44 | 25.0 | C | 0.47 | 25.6 | C | 0.44 | 25.2 | C | 0.47 | 25.8 | C |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L | 0.57 | 20.2 | C | 0.62 | 21.5 | C | 0.46 | 17.5 | B | 0.50 | 18.4 | B | 0.66 | 23.0 | C | 0.72 | 25.3 | C | 0.49 | 18.0 | B | 0.52 | 18.9 | B |
| | EB - TR | 0.10 | 12.0 | B | 0.11 | 12.0 | B | 0.10 | 12.0 | B | 0.11 | 12.0 | B | 0.09 | 11.9 | B | 0.10 | 11.9 | B | 0.07 | 11.8 | B | 0.08 | 11.8 | B |
| | WB - L | 0.33 | 15.1 | B | 0.35 | 15.6 | B | 0.30 | 14.9 | B | 0.33 | 15.2 | B | 0.44 | 16.9 | B | 0.48 | 17.6 | B | 0.33 | 15.0 | B | 0.36 | 15.4 | B |
| | WB - TR | 0.12 | 12.1 | B | 0.12 | 12.1 | B | 0.13 | 12.2 | B | 0.14 | 12.3 | B | 0.11 | 12.0 | B | 0.12 | 12.1 | B | 0.13 | 12.2 | B | 0.14 | 12.2 | B |
| | NB - LTR | 0.96 | 62.7 | E | 1.07 | 93.4 | F * | 0.84 | 40.8 | D | 0.92 | 52.2 | D * | 1.05 | 85.0 | F | 1.21 | 141.2 | F * | 1.05 | 84.5 | F | 1.21 | 142.0 | F * |
| | SB - LTR | 0.51 | 22.7 | C | 0.55 | 23.3 | C | 0.39 | 20.8 | C | 0.42 | 21.2 | C | 0.70 | 27.0 | C | 0.75 | 28.7 | C | 0.73 | 28.0 | C | 0.78 | 30.1 | C |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | EB - LT | 0.44 | 24.5 | C | 0.47 | 24.9 | C | 0.40 | 24.0 | C | 0.43 | 24.5 | C | 0.55 | 26.0 | C | 0.58 | 26.7 | C | 0.56 | 26.2 | C | 0.60 | 27.0 | C |
| | WB - T | 0.31 | 22.7 | C | 0.33 | 23.0 | C | 0.22 | 21.6 | C | 0.24 | 21.8 | C | 0.37 | 23.5 | C | 0.39 | 23.9 | C | 0.30 | 22.6 | C | 0.32 | 22.9 | C |
| | SB - L | 0.51 | 43.3 | D | 0.54 | 44.3 | D | 0.66 | 49.6 | D | 0.70 | 52.2 | D | 0.60 | 45.8 | D | 0.63 | 47.5 | D | 0.61 | 46.3 | D | 0.65 | 48.1 | D |
| | SB - R | 0.15 | 10.6 | B | 0.16 | 10.7 | B | 0.20 | 11.0 | B | 0.21 | 11.2 | B | 0.21 | 11.1 | B | 0.23 | 11.3 | B | 0.19 | 10.9 | B | 0.20 | 11.0 | B |
| 12. Platinum Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.31 | 23.0 | C | 0.33 | 23.2 | C | 0.35 | 27.1 | C | 0.37 | 27.5 | C | 0.39 | 24.1 | C | 0.42 | 24.5 | C | 0.35 | 23.5 | C | 0.37 | 23.8 | C |
| | NB - L | 0.39 | 14.6 | B | 0.47 | 16.9 | B | 0.39 | 12.1 | B | 0.46 | 14.0 | B | 0.41 | 15.0 | B | 0.51 | 17.7 | B | 0.43 | 15.3 | B | 0.52 | 18.0 | B |
| | NB - T | 0.41 | 13.2 | B | 0.47 | 14.1 | B | 0.47 | 11.3 | B | 0.52 | 12.0 | B | 0.51 | 14.5 | B | 0.58 | 15.7 | B | 0.52 | 14.7 | B | 0.59 | 16.0 | B |
| | SB - T | 0.43 | 13.5 | B | 0.50 | 14.4 | B | 0.49 | 11.6 | B | 0.54 | 12.3 | B | 0.45 | 13.7 | B | 0.52 | 14.7 | B | 0.45 | 13.6 | B | 0.50 | 14.5 | B |
| | SB - R | 0.14 | 10.4 | B | 0.15 | 10.5 | B | 0.12 | 8.0 | A | 0.13 | 8.1 | A | 0.21 | 11.1 | B | 0.22 | 11.2 | B | 0.19 | 10.8 | B | 0.20 | 11.0 | B |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.18 | 14.1 | B | 0.21 | 14.8 | B | 0.28 | 18.3 | C | 0.31 | 20.1 | C | 0.40 | 21.4 | C | 0.46 | 24.3 | C | 0.45 | 25.2 | D | 0.53 | 30.1 | D |
| | EB - R | 0.08 | 9.7 | A | 0.09 | 9.8 | A | 0.10 | 10.2 | B | 0.11 | 10.3 | B | 0.12 | 9.8 | A | 0.13 | 10.0 | A | 0.11 | 10.0 | B | 0.12 | 10.2 | B |
| | NB - L | 0.05 | 7.9 | A | 0.05 | 7.9 | A | 0.06 | 8.2 | A | 0.07 | 8.2 | A | 0.09 | 8.0 | A | 0.09 | 8.1 | A | 0.09 | 8.1 | A | 0.10 | 8.2 | A |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | 0.61 | 29.2 | C | 0.65 | 30.4 | C | 0.55 | 27.4 | C | 0.58 | 28.3 | C | 0.60 | 28.8 | C | 0.64 | 30.0 | C | 0.61 | 29.1 | C | 0.65 | 30.3 | C |
| | EB - R | 0.04 | 19.7 | B | 0.04 | 19.8 | B | 0.05 | 19.9 | B | 0.05 | 19.9 | B | 0.04 | 19.7 | B | 0.04 | 19.8 | B | 0.02 | 19.6 | B | 0.03 | 19.6 | B |
| | NB - L | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A | 0.03 | 9.6 | A | 0.04 | 9.7 | A | 0.02 | 9.5 | A | 0.02 | 9.5 | A |
| | NB - T | 0.27 | 11.6 | B | 0.29 | 11.8 | B | 0.39 | 13.0 | B | 0.42 | 13.4 | B | 0.48 | 14.2 | B | 0.51 | 14.6 | B | 0.50 | 14.4 | B | 0.53 | 15.0 | B |
| | SB - TR | 0.61 | 16.3 | B | 0.64 | 17.2 | B | 0.66 | 17.6 | B | 0.70 | 18.7 | B | 0.53 | 15.0 | B | 0.56 | 15.6 | B | 0.58 | 15.7 | B | 0.61 | 16.5 | B |
| 15. Staten Island Mall Drive (E-W) @ Marsh Avenue (N-S) | EB - L | 0.19 | 25.6 | C | 0.21 | 25.8 | C | 0.24 | 26.2 | C | 0.26 | 26.4 | C | 0.20 | 21.4 | C | 0.21 | 21.6 | C | 0.25 | 22.0 | C | 0.26 | 22.2 | C |
| | EB - R | 0.12 | 24.8 | C | 0.13 | 24.9 | C | 0.08 | 24.4 | C | 0.09 | 24.5 | C | 0.20 | 21.6 | C | 0.21 | 21.7 | C | 0.15 | 20.9 | C | 0.16 | 21.0 | C |
| | NB - L | 0.21 | 8.6 | A | 0.23 | 8.8 | A | 0.10 | 7.6 | A | 0.11 | 7.7 | A | 0.15 | 10.8 | B | 0.17 | 11.0 | B | 0.17 | 11.0 | B | 0.18 | 11.2 | B |
| | NB - T | 0.14 | 7.7 | A | 0.15 | 7.8 | A | 0.22 | 8.4 | A | 0.24 | 8.5 | A | 0.28 | 11.7 | B | 0.29 | 11.9 | B | 0.27 | 11.7 | B | 0.29 | 11.8 | B |
| | SB - TR | 0.18 | 8.0 | A | 0.19 | 8.1 | A | 0.29 | 8.9 | A | 0.31 | 9.0 | A | 0.22 | 11.1 | B | 0.24 | 11.2 | B | 0.25 | 11.3 | B | 0.26 | 11.5 | B |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.29 | 37.4 | D | 0.31 | 37.8 | D | 0.38 | 39.2 | D | 0.41 | 39.8 | D | 0.34 | 38.3 | D | 0.36 | 38.7 | D | 0.41 | 39.9 | D | 0.44 | 40.6 | D |
| | WB - LTR | 0.51 | 44.9 | D | 0.54 | 46.2 | D | 0.61 | 49.0 | D | 0.65 | 51.6 | D | 0.54 | 45.9 | D | 0.58 | 47.6 | D | 0.52 | 45.2 | D | 0.56 | 46.9 | D |
| | NB - L | 0.51 | 15.3 | B | 0.57 | 19.0 | B | 0.63 | 24.3 | C | 0.68 | 27.2 | C | 0.69 | 27.5 | C | 0.75 | 31.2 | C | 0.57 | 15.8 | B | 0.66 | 20.8 | C |
| | NB - TR | 0.48 | 14.1 | B | 0.52 | 14.6 | B | 0.54 | 14.8 | B | 0.58 | 15.4 | B | 0.54 | 14.8 | B | 0.59 | 15.4 | B | 0.57 | 15.1 | B | 0.61 | 15.8 | B |
| | SB - L | 0.03 | 20.4 | C | 0.03 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.3 | C | 0.04 | 20.4 | C | 0.04 | 20.5 | C | 0.04 | 20.6 | C |
| | SB - TR | 0.81 | 30.8 | C | 0.88 | 33.8 | C | 0.90 | 33.3 | C | 0.97 | 39.9 | D * | 0.96 | 35.0 | D | 1.04 | 53.8 | D * | 0.75 | 29.5 | C | 0.81 | 31.4 | C |
| 17. Lamberts Lane/ Christopher Lane (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.47 | 25.5 | C | 0.50 | 26.1 | C | 0.66 | 29.3 | C | 0.70 | 30.6 | C | 0.44 | 24.9 | C | 0.47 | 25.4 | C | 0.75 | 31.6 | C | 0.79 | 33.7 | C |
| | EB - R | 0.17 | 21.3 | C | 0.20 | 21.7 | C | 0.20 | 21.5 | C | 0.24 | 22.1 | C | 0.21 | 21.8 | C | 0.25 | 22.4 | C | 0.16 | 21.0 | C | 0.20 | 21.4 | C |
| | NB - L | 0.25 | 13.9 | B | 0.36 | 16.8 | B | 0.27 | 15.4 | B | 0.41 | 21.3 | C | 0.38 | 18.3 | B | 0.60 | 31.1 | C | 0.28 | 14.5 | B | 0.44 | 19.6 | B |
| | NB - TR | 0.42 | 13.2 | B | 0.45 | 13.6 | B | 0.47 | 13.8 | B | 0.51 | 14.3 | B | 0.51 | 14.3 | B | 0.56 | 14.9 | B | 0.49 | 14.0 | B | 0.53 | 14.5 | B |
| | SB - L | 0.22 | 12.9 | B | 0.26 | 13.9 | B | 0.32 | 14.8 | B | 0.38 | 16.7 | B | 0.39 | 17.4 | B | 0.49 | 22.2 | C | 0.28 | 14.7 | B | 0.35 | 17.0 | B |
| | SB - TR | 0.47 | 13.8 | B | 0.51 | 14.3 | B | 0.60 | 15.5 | B | 0.65 | 16.3 | B | 0.57 | 15.0 | B | 0.62 | 15.7 | B | 0.49 | 14.1 | B | 0.54 | 14.6 | B |

This table has been updated for the FEIS.

Table 10-13

2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|---|------------|--------------------------|--------------|-----|----------------------|--------------|-----|---------------------------|--------------|-----|-----------------------|--------------|-----|-----------|--------------|-----|-------------|--------------|-----|------|-------|---|-------------|--------------|-----|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 18. Merrill Avenue/Morani Street (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.35 | 24.1 | C | 0.38 | 24.7 | C | 0.70 | 32.8 | C | 0.76 | 35.9 | D | 0.46 | 26.2 | C | 0.50 | 27.4 | C | 0.46 | 25.9 | C | 0.50 | 26.7 | C |
| | WB - LTR | 0.40 | 24.8 | C | 0.43 | 25.4 | C | 0.41 | 24.9 | C | 0.44 | 25.6 | C | 0.47 | 25.8 | C | 0.51 | 26.7 | C | 0.34 | 23.6 | C | 0.37 | 24.1 | C |
| | NB - L | 0.28 | 14.1 | B | 0.34 | 16.0 | B | 0.23 | 13.5 | B | 0.30 | 15.4 | B | 0.20 | 12.9 | B | 0.27 | 14.8 | B | 0.11 | 11.2 | B | 0.14 | 11.8 | B |
| | NB - TR | 0.52 | 14.6 | B | 0.57 | 15.3 | B | 0.53 | 14.6 | B | 0.57 | 15.3 | B | 0.64 | 16.2 | B | 0.70 | 17.5 | B | 0.61 | 15.8 | B | 0.68 | 17.0 | B |
| | SB - L | 0.12 | 11.3 | B | - | - | - | 0.22 | 12.7 | B | - | - | - | 0.29 | 14.7 | B | - | - | - | 0.26 | 14.2 | B | - | - | - |
| | SB - TR | 0.54 | 14.8 | B | 0.59 | 15.6 | B | 0.62 | 16.0 | B | 0.67 | 17.1 | B | 0.64 | 16.2 | B | 0.69 | 17.3 | B | 0.56 | 15.1 | B | 0.61 | 15.9 | B |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | 0.25 | 26.7 | C | <u>0.39</u> | <u>46.7</u> | D | 0.34 | 28.8 | C | <u>0.50</u> | <u>51.2</u> | D | 0.48 | 32.0 | C | <u>0.66</u> | <u>57.9</u> | E * | 0.23 | 26.1 | C | <u>0.35</u> | <u>45.2</u> | D |
| | EB - T | 0.56 | 31.2 | C | <u>0.83</u> | <u>63.2</u> | E * | 0.63 | 32.1 | C | <u>0.92</u> | <u>71.9</u> | E * | 0.46 | 28.3 | C | <u>0.68</u> | <u>50.5</u> | D | 0.54 | 30.4 | C | <u>0.79</u> | <u>59.0</u> | E * |
| | EB - R | 0.28 | 26.5 | C | <u>0.42</u> | <u>45.8</u> | D | 0.64 | 34.4 | C | <u>0.97</u> | <u>88.8</u> | F * | 0.88 | 49.0 | D | <u>1.33</u> | <u>213.0</u> | F * | 0.22 | 25.6 | C | <u>0.39</u> | <u>43.5</u> | D |
| | WB - L | 0.98 | 50.1 | D | <u>1.09</u> | <u>95.9</u> | F * | 1.01 | 34.3 | C | <u>1.29</u> | <u>177.0</u> | F * | 1.05 | 73.9 | E | <u>1.15</u> | <u>117.4</u> | F * | 1.04 | 64.1 | E | <u>1.15</u> | <u>119.9</u> | F * |
| | WB - TR | 0.49 | 18.2 | B | <u>0.48</u> | <u>21.2</u> | C | 0.74 | 20.1 | C | <u>0.78</u> | <u>27.4</u> | C | 0.69 | 20.9 | C | <u>0.69</u> | <u>24.7</u> | C | 0.42 | 17.1 | B | <u>0.42</u> | <u>20.1</u> | C |
| | NB - L | 0.50 | 36.0 | D | <u>0.71</u> | <u>60.1</u> | E * | 0.53 | 37.2 | D | <u>0.75</u> | <u>60.1</u> | E * | 0.52 | 36.5 | D | <u>0.73</u> | <u>55.4</u> | E * | 0.40 | 32.9 | C | <u>0.57</u> | <u>52.0</u> | D |
| | NB - T | 0.81 | 33.2 | C | <u>0.82</u> | <u>41.2</u> | D | 0.89 | 38.2 | D | <u>0.80</u> | <u>39.7</u> | D | 0.91 | 36.1 | D | <u>0.92</u> | <u>45.4</u> | D * | 0.89 | 35.6 | D | <u>0.91</u> | <u>44.7</u> | D |
| | SB - L | 0.30 | 29.6 | C | <u>0.42</u> | <u>46.1</u> | D | 0.21 | 29.3 | C | <u>0.28</u> | <u>40.0</u> | D | 0.22 | 30.2 | C | <u>0.32</u> | <u>46.6</u> | D | 0.21 | 30.2 | C | <u>0.31</u> | <u>47.3</u> | D |
| | SB - TR | 0.78 | 31.9 | C | <u>0.79</u> | <u>39.8</u> | D | 0.94 | 39.8 | D | <u>0.84</u> | <u>40.1</u> | D | 0.95 | 36.9 | D | <u>0.95</u> | <u>46.1</u> | D * | 0.75 | 31.4 | C | <u>0.76</u> | <u>39.0</u> | D |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.05 | 66.9 | E | 1.13 | 97.2 | F * | 1.05 | 66.5 | E | 1.13 | 96.2 | F * | 1.05 | 66.9 | E | 1.13 | 98.4 | F * | 0.79 | 43.3 | D | 0.85 | 47.3 | D |
| | NB - L | 0.88 | 63.3 | E | 0.95 | 75.1 | E * | 0.98 | 75.1 | E | 1.05 | 94.4 | F * | 0.87 | 59.5 | E | 0.94 | 70.2 | E * | 0.93 | 64.9 | E | 1.00 | 80.1 | F * |
| | NB - T | 0.53 | 8.3 | A | 0.58 | 8.7 | A | 0.52 | 8.0 | A | 0.56 | 8.4 | A | 0.59 | 8.8 | A | 0.64 | 9.4 | A | 0.63 | 9.2 | A | 0.68 | 9.9 | A |
| | SB - TR | 0.74 | 22.1 | C | 0.80 | 23.6 | C | 1.04 | 44.4 | D | 1.12 | 78.2 | E * | 0.98 | 28.4 | C | 1.06 | 54.9 | D * | 0.85 | 24.2 | C | 0.92 | 27.2 | C * |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.61 | 35.8 | D | 0.66 | 37.4 | D | 0.64 | 36.7 | D | 0.69 | 38.5 | D | 0.58 | 34.6 | C | 0.62 | 35.8 | D | 0.47 | 32.1 | C | 0.50 | 32.9 | C |
| | WB - R | 0.48 | 18.9 | B | 0.51 | 19.5 | B | 0.38 | 14.3 | B | 0.41 | 14.6 | B | 0.49 | 18.9 | B | 0.52 | 19.5 | B | 0.42 | 17.9 | B | 0.45 | 18.3 | B |
| | NB - TR | 0.68 | 22.6 | C | 0.73 | 23.7 | C | 0.78 | 27.4 | C | 0.84 | 29.0 | C | 0.73 | 23.5 | C | 0.80 | 24.9 | C | 0.81 | 24.8 | C | 0.89 | 27.3 | C |
| | SB - L | 0.88 | 64.0 | E | 0.94 | 72.9 | E * | 0.94 | 59.5 | E | 1.00 | 72.1 | E * | 1.05 | 94.2 | F | 1.12 | 116.3 | F * | 0.95 | 73.9 | E | 1.01 | 88.9 | F * |
| | SB - T | 0.51 | 9.0 | A | 0.56 | 9.5 | A | 0.70 | 11.2 | B | 0.75 | 12.2 | B | 0.69 | 11.0 | B | 0.75 | 12.1 | B | 0.57 | 9.6 | A | 0.62 | 10.2 | B |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.05 | 95.7 | F | 1.12 | 119.7 | F * | 1.05 | 63.0 | E | 1.12 | 92.8 | F * | 0.97 | 46.6 | D | 1.03 | 62.1 | E * | 0.78 | 40.0 | D | 0.83 | 43.3 | D |
| | WB - LTR | 0.13 | 25.7 | C | 0.14 | 25.9 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.14 | 25.8 | C | 0.17 | 26.2 | C | 0.18 | 26.3 | C |
| | NB - L | 1.05 | 85.7 | F | 1.13 | 112.2 | F * | 1.03 | 77.8 | E | 1.11 | 102.8 | F * | 1.05 | 76.3 | E | 1.13 | 105.4 | F * | 1.04 | 72.7 | E | 1.12 | 102.1 | F * |
| | NB - TR | 0.40 | 9.2 | A | 0.43 | 9.5 | A | 0.41 | 9.3 | A | 0.45 | 9.5 | A | 0.47 | 9.7 | A | 0.52 | 10.1 | B | 0.51 | 10.0 | B | 0.56 | 10.5 | B |
| | SB - TR | 0.71 | 28.8 | C | 0.78 | 30.2 | C | 0.84 | 28.9 | C | 0.91 | 31.2 | C * | 0.98 | 35.0 | C | 1.07 | 64.7 | E * | 0.83 | 30.6 | C | 0.91 | 33.2 | C * |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.79 | 45.0 | D | 0.84 | 49.3 | D | 0.76 | 42.5 | D | 0.81 | 45.9 | D | 0.98 | 72.3 | E | 1.05 | 88.6 | F * | 0.81 | 46.2 | D | 0.86 | 51.4 | D |
| | NB - TR | 0.70 | 22.5 | C | 0.76 | 23.8 | C | 0.85 | 30.5 | C | 0.92 | 34.5 | C * | 0.86 | 26.4 | C | 0.93 | 30.5 | C * | 0.88 | 27.7 | C | 0.96 | 34.4 | C * |
| | SB - L | 1.00 | 93.3 | F | 1.07 | 110.9 | F * | 0.84 | 51.2 | D | 0.90 | 58.2 | E * | 1.05 | 100.9 | F | 1.12 | 122.9 | F * | 1.05 | 103.3 | F | 1.12 | 124.6 | F * |
| | SB - T | 0.40 | 7.9 | A | 0.44 | 8.2 | A | 0.53 | 9.0 | A | 0.57 | 9.4 | A | 0.54 | 9.1 | A | 0.59 | 9.6 | A | 0.45 | 8.3 | A | 0.49 | 8.6 | A |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | 0.66 | 22.7 | C | 0.73 | 24.7 | C | 0.69 | 24.0 | C | 0.75 | 25.8 | C | 0.88 | 27.3 | C | 0.96 | 35.2 | D * | 0.74 | 24.1 | C | 0.81 | 26.6 | C |
| | EB - LR | 0.71 | 24.1 | C | 0.78 | 26.6 | C | 0.74 | 25.7 | C | 0.81 | 28.4 | C | 0.93 | 31.5 | C | 1.02 | 48.5 | D * | 0.81 | 27.1 | C | 0.89 | 31.9 | C |
| | NB - T | 0.71 | 23.3 | C | 0.76 | 24.9 | C | 0.76 | 23.5 | C | 0.82 | 25.3 | C | 0.87 | 27.9 | C | 0.94 | 33.1 | C * | 0.72 | 23.4 | C | 0.78 | 25.0 | C |
| | SB - T | 0.77 | 23.9 | C | 0.84 | 26.0 | C | 0.90 | 26.3 | C | 0.98 | 32.8 | C * | 0.89 | 26.5 | C | 0.97 | 32.9 | C * | 0.84 | 25.4 | C | 0.92 | 29.4 | C * |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | EB - L | 0.13 | 22.0 | C | 0.16 | 22.8 | C | 0.31 | 25.6 | C | 0.32 | 25.9 | C | 0.23 | 25.8 | C | 0.25 | 26.1 | C | 0.21 | 24.7 | C | 0.22 | 25.0 | C |
| | EB - TR | 0.41 | 23.8 | C | 0.43 | 24.1 | C | 0.45 | 22.8 | C | 0.48 | 23.2 | C | 0.38 | 23.5 | C | 0.41 | 23.8 | C | 0.46 | 24.3 | C | 0.49 | 24.6 | C |
| | WB - L | 0.18 | 22.4 | C | 0.19 | 22.8 | C | 0.11 | 20.0 | B | 0.12 | 20.2 | C | 0.10 | 21.1 | C | 0.11 | 21.2 | C | 0.15 | 22.0 | C | 0.17 | 22.3 | C |
| | WB - T | 0.76 | 33.6 | C | 0.81 | 36.1 | D | 0.99 | 53.3 | D | 1.06 | 71.1 | E * | 0.95 | 46.8 | D | 1.01 | 59.8 | E * | 0.95 | 48.1 | D | 1.01 | 61.7 | E * |
| | WB - R | 0.42 | 12.8 | B | 0.45 | 13.3 | B | 0.40 | 11.2 | B | 0.43 | 11.5 | B | 0.51 | 13.7 | B | 0.56 | 14.4 | B | 0.43 | 12.6 | B | 0.46 | 13.0 | B |
| | NB - L | 0.32 | 34.0 | C | 0.34 | 34.2 | C | 0.50 | 35.4 | D | 0.54 | 35.8 | D | 0.33 | 33.5 | C | 0.35 | 33.7 | C | 0.43 | 34.9 | C | 0.45 | 35.2 | D |
| | NB - TR | 0.79 | 31.8 | C | 0.85 | 34.4 | C | 0.97 | 43.8 | D | 1.04 | 61.5 | E * | 1.02 | 49.1 | D | 1.09 | 77.1 | E * | 0.88 | 34.3 | C | 0.94 | 39.9 | D * |
| | SB - L | 0.97 | 60.1 | E | 1.03 | 75.2 | E * | 1.01 | 62.0 | E | 1.08 | 83.4 | F * | 1.05 | 71.2 | E | 1.11 | 95.9 | F * | 0.93 | 50.1 | D | 0.99 | 60.1 | E * |
| | SB - TR | 0.59 | 26.8 | C | 0.65 | 27.8 | C | 0.82 | 31.7 | C | 0.90 | 34.5 | C * | 0.60 | 26.4 | C | 0.67 | 27.4 | C | 0.68 | 28.0 | C | 0.76 | 29.5 | C |

Table 10-13
2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|---|------------|--------------------------|--------------|-----|----------------------|--------------|----------|---------------------------|--------------|-----|-----------------------|--------------|----------|-----------|--------------|-----|-------------|--------------|----------|------|------|---|-------------|-------------|----------|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 26. Barlow Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.19 | 21.4 | C | 0.21 | 21.7 | C | 0.39 | 28.1 | C | 0.42 | 28.8 | C | 0.29 | 22.8 | C | 0.31 | 23.2 | C | 0.28 | 22.8 | C | 0.30 | 23.1 | C |
| | WB - LTR | 0.34 | 23.5 | C | 0.36 | 23.9 | C | 0.62 | 34.0 | C | 0.67 | 36.0 | D | 0.45 | 25.5 | C | 0.48 | 26.1 | C | 0.43 | 25.0 | C | 0.46 | 25.6 | C |
| | NB - LTR | 0.46 | 13.9 | B | 0.50 | 14.5 | B | 0.49 | 11.6 | B | 0.53 | 12.2 | B | 0.52 | 14.6 | B | 0.56 | 15.2 | B | 0.45 | 13.7 | B | 0.49 | 14.2 | B |
| | SB - LTR | 0.46 | 13.9 | B | 0.52 | 14.6 | B | 0.51 | 11.9 | B | 0.57 | 12.6 | B | 0.47 | 14.0 | B | 0.53 | 14.9 | B | 0.46 | 13.8 | B | 0.51 | 14.6 | B |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.22 | 22.0 | C | 0.26 | 22.5 | C | 0.35 | 27.4 | C | 0.37 | 28.0 | C | 0.23 | 22.0 | C | 0.24 | 22.2 | C | 0.24 | 22.1 | C | 0.25 | 22.3 | C |
| | WB - LTR | 0.17 | 21.2 | C | 0.17 | 21.3 | C | 0.33 | 27.2 | C | 0.35 | 27.6 | C | 0.20 | 21.6 | C | 0.21 | 21.8 | C | 0.21 | 21.8 | C | 0.23 | 22.0 | C |
| | NB - LTR | 0.38 | 13.0 | B | 0.42 | 13.4 | B | 0.43 | 11.0 | B | 0.47 | 11.3 | B | 0.42 | 13.4 | B | 0.45 | 13.8 | B | 0.36 | 12.7 | B | 0.39 | 13.1 | B |
| | SB - LTR | 0.79 | 21.5 | C | 0.88 | 26.4 | C | 0.85 | 20.2 | C | 0.94 | 26.9 | C * | 0.82 | 22.2 | C | 0.92 | 29.4 | C * | 0.85 | 22.8 | C | 0.95 | 32.1 | C * |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.75 | 30.5 | C | 0.81 | 32.8 | C | 0.91 | 35.1 | D | 0.97 | 43.0 | D * | 0.87 | 33.4 | C | 0.93 | 38.4 | D * | 0.89 | 34.6 | C | 0.96 | 41.5 | D * |
| | NB - T | 0.66 | 28.8 | C | 0.70 | 30.0 | C | 0.66 | 27.3 | C | 0.70 | 28.3 | C | 0.60 | 27.2 | C | 0.64 | 28.1 | C | 0.54 | 25.9 | C | 0.57 | 26.6 | C |
| | NB - R | 0.26 | 3.8 | A | 0.28 | 3.9 | A | 0.30 | 3.8 | A | 0.32 | 3.9 | A | 0.27 | 3.8 | A | 0.29 | 3.9 | A | 0.31 | 4.0 | A | 0.33 | 4.1 | A |
| | SB - L | 0.60 | 15.8 | B | 0.67 | 17.9 | B | 0.58 | 15.5 | B | 0.65 | 17.6 | B | 0.62 | 15.6 | B | 0.69 | 17.7 | B | 0.57 | 14.2 | B | 0.63 | 15.7 | B |
| | SB - T | 0.43 | 14.1 | B | 0.46 | 14.5 | B | 0.46 | 14.6 | B | 0.49 | 15.0 | B | 0.56 | 16.1 | B | 0.6 | 16.9 | B | 0.49 | 14.9 | B | 0.52 | 15.5 | B |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | 0.60 | 24.7 | C | 0.64 | 25.7 | C | 0.95 | 34.2 | C | 1.01 | 46.2 | D * | 0.74 | 27.6 | C | 0.79 | 29.3 | C | 0.77 | 28.2 | C | 0.82 | 30.2 | C |
| | NB - T | 0.75 | 33.1 | C | 0.8 | 35.6 | D | 0.83 | 37.1 | D | 0.89 | 41.9 | D | 0.72 | 31.8 | C | 0.77 | 33.8 | C | 0.71 | 31.3 | C | 0.76 | 33.3 | C |
| | NB - R | 0.33 | 3.4 | A | 0.35 | 3.5 | A | 0.39 | 3.6 | A | 0.41 | 3.8 | A | 0.37 | 3.6 | A | 0.40 | 3.8 | A | 0.35 | 3.5 | A | 0.37 | 3.6 | A |
| | SB - L | 0.45 | 15.5 | B | 0.51 | 17.0 | B | 0.50 | 17.2 | B | 0.57 | 19.5 | B | 0.54 | 16.3 | B | 0.60 | 18.1 | B | 0.37 | 14.0 | B | 0.41 | 15.0 | B |
| | SB - T | 0.56 | 18.0 | B | 0.60 | 18.7 | B | 0.67 | 20.1 | C | 0.72 | 21.3 | C | 0.62 | 18.6 | B | 0.66 | 19.6 | B | 0.62 | 19.0 | B | 0.67 | 20.0 | B |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | WB - LT | 0.08 | 10.5 | B | 0.09 | 10.9 | B | 0.08 | 10.9 | B | 0.09 | 11.3 | B | 0.10 | 10.5 | B | 0.11 | 10.8 | B | 0.07 | 10.2 | B | 0.08 | 10.4 | B |
| | NB - LR | 0.40 | 40.3 | E | 0.48 | 50.5 | F * | 0.50 | 48.6 | E | 0.63 | 68.6 | F * | 0.36 | 31.8 | D | 0.44 | 39.4 | E * | 0.41 | 33.8 | D | 0.49 | 40.9 | E * |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L | 0.57 | 19.2 | B | 0.62 | 20.1 | C | 0.64 | 20.9 | C | 0.70 | 22.2 | C | 0.76 | 23.1 | C | 0.82 | 25.8 | C | 0.70 | 21.3 | C | 0.76 | 23.1 | C |
| | EB - TR | 0.76 | 41.5 | D | 0.83 | 46.1 | D | 0.91 | 49.9 | D | 0.97 | 58.9 | E * | 0.70 | 37.8 | D | 0.75 | 39.4 | D | 0.80 | 41.6 | D | 0.85 | 44.9 | D |
| | WB - L | 0.53 | 18.3 | B | 0.54 | 18.8 | B | 0.69 | 21.8 | C | 0.71 | 22.0 | C | 0.62 | 18.8 | B | 0.64 | 19.4 | B | 0.72 | 20.7 | C | 0.74 | 21.5 | C |
| | WB - TR | 0.28 | 29.7 | C | 0.30 | 29.9 | C | 0.43 | 30.8 | C | 0.46 | 31.1 | C | 0.35 | 30.1 | C | 0.37 | 30.4 | C | 0.37 | 30.4 | C | 0.39 | 30.6 | C |
| | NB - L | 0.15 | 20.0 | B | 0.16 | 20.3 | C | 0.39 | 30.3 | C | 0.41 | 31.5 | C | 0.41 | 32.6 | C | 0.43 | 34.3 | C | 0.46 | 36.1 | D | 0.49 | 38.9 | D |
| | NB - TR | 0.67 | 23.5 | C | 0.74 | 25.4 | C | 0.68 | 22.4 | C | 0.73 | 23.9 | C | 0.78 | 26.8 | C | 0.86 | 30.9 | C | 0.76 | 26.0 | C | 0.83 | 29.0 | C |
| | SB - LTR | 0.89 | 27.5 | C | 0.96 | 33.3 | C * | 1.05 | 50.0 | D | 1.13 | 83.6 | F * | 1.05 | 52.6 | D | 1.14 | 90.9 | F * | 1.05 | 52.8 | D | 1.14 | 91.1 | F * |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | 0.69 | 20.0 | C | 0.74 | 21.8 | C | 0.86 | 29.6 | C | 0.92 | 35.8 | D * | 0.69 | 19.8 | B | 0.73 | 21.4 | C | 0.68 | 19.6 | B | 0.73 | 21.2 | C |
| | WB - LT | 0.59 | 16.4 | B | 0.66 | 18.2 | B | 1.05 | 48.9 | D | 1.20 | 110.8 | F * | 0.63 | 16.9 | B | 0.70 | 18.9 | B | 0.90 | 24.1 | C | 1.00 | 39.1 | D * |
| | NB - L | 0.09 | 20.3 | C | 0.10 | 20.3 | C | 0.16 | 21.1 | C | 0.17 | 21.2 | C | 0.13 | 20.7 | C | 0.14 | 20.8 | C | 0.19 | 21.4 | C | 0.20 | 21.5 | C |
| | NB - R | 0.26 | 22.6 | C | 0.28 | 22.9 | C | 0.33 | 23.9 | C | 0.36 | 24.3 | C | 0.40 | 25.0 | C | 0.43 | 25.6 | C | 0.33 | 23.7 | C | 0.35 | 24.0 | C |
| 33. Victory Boulevard (E-W) @ South Gannon Avenue (SB) (Unsignalized) | WB - L | 0.13 | 9.4 | A | 0.14 | 9.7 | A | 0.15 | 9.2 | A | 0.17 | 9.5 | A | 0.11 | 8.7 | A | 0.12 | 8.9 | A | 0.11 | 8.8 | A | 0.12 | 9.0 | A |
| | SB - L | 0.19 | 11.9 | B | 0.21 | 12.3 | B | 0.23 | 12.2 | B | 0.26 | 12.6 | B | 0.18 | 11.9 | B | 0.20 | 12.3 | B | 0.20 | 12.9 | B | 0.23 | 13.4 | B |
| 34. Victory Boulevard (E-W) @ North Gannon Avenue (NB) | EB - L | 0.18 | 26.8 | C | <u>0.20</u> | <u>26.8</u> | <u>C</u> | 0.28 | 30.3 | C | <u>0.32</u> | <u>31.6</u> | <u>C</u> | 0.20 | 27.6 | C | <u>0.23</u> | <u>27.9</u> | <u>C</u> | 0.15 | 26.2 | C | <u>0.18</u> | <u>26.2</u> | <u>C</u> |
| | EB - T | 0.46 | 29.4 | C | <u>0.49</u> | <u>29.3</u> | <u>C</u> | 0.38 | 28.1 | C | <u>0.40</u> | <u>27.8</u> | <u>C</u> | 0.34 | 27.6 | C | <u>0.37</u> | <u>27.3</u> | <u>C</u> | 0.36 | 27.7 | C | <u>0.38</u> | <u>27.5</u> | <u>C</u> |
| | WB - TR | 0.44 | 29.0 | C | <u>0.46</u> | <u>28.8</u> | <u>C</u> | 0.57 | 31.3 | C | <u>0.60</u> | <u>31.3</u> | <u>C</u> | 0.49 | 29.8 | C | <u>0.52</u> | <u>29.8</u> | <u>C</u> | 0.40 | 28.5 | C | <u>0.43</u> | <u>28.3</u> | <u>C</u> |
| | NB - L | 0.42 | 17.1 | B | <u>0.46</u> | <u>18.1</u> | <u>B</u> | 0.56 | 19.3 | B | <u>0.61</u> | <u>20.8</u> | <u>C</u> | 0.56 | 19.3 | B | <u>0.61</u> | <u>20.7</u> | <u>C</u> | 0.49 | 18.0 | B | <u>0.53</u> | <u>19.2</u> | <u>B</u> |
| | NB - TR | 0.10 | 13.6 | B | <u>0.11</u> | <u>14.1</u> | <u>B</u> | 0.15 | 14.0 | B | <u>0.16</u> | <u>14.6</u> | <u>B</u> | 0.14 | 13.9 | B | <u>0.15</u> | <u>14.5</u> | <u>B</u> | 0.12 | 13.7 | B | <u>0.13</u> | <u>14.3</u> | <u>B</u> |

This table has been updated for the FEIS.

Table 10-13

2019 No-Action Traffic Levels of Service

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | | SATURDAY MIDDAY PEAK HOUR | | | SATURDAY PM PEAK HOUR | | | | | | | | | | | | | | |
|--|------------|--------------------------|--------------|-----|----------------------|--------------|------------|---------------------------|--------------|-----|-----------------------|--------------|------------|-----------|--------------|-----|-------------|--------------|------------|------|------|---|-------------|-------------|------------|
| | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | EXISTING | | | NO-ACTION | | | | | | | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | | | | | | |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.92 | 53.1 | D | 1.03 | 81.4 | F * | 0.94 | 47.4 | D | 1.05 | 77.1 | E * | 0.74 | 29.0 | C | 0.83 | 43.9 | D | 0.80 | 37.5 | D | 0.89 | 48.9 | D |
| | EB - TR | 0.44 | 25.2 | C | 0.47 | 25.5 | C | 0.51 | 29.5 | C | 0.54 | 30.0 | C | 0.38 | 24.5 | C | 0.41 | 24.8 | C | 0.38 | 24.5 | C | 0.41 | 24.8 | C |
| | WB - L | 0.75 | 29.8 | C | 0.88 | 41.8 | D | 0.72 | 20.6 | C | 0.81 | 24.0 | C | 0.82 | 33.0 | C | 0.96 | 51.5 | D * | 0.72 | 29.3 | C | 0.84 | 38.4 | D |
| | WB - TR | 0.74 | 32.1 | C | 0.78 | 34.0 | C | 0.92 | 45.6 | D | 0.98 | 55.2 | E * | 0.74 | 31.7 | C | 0.79 | 33.4 | C | 0.61 | 29.0 | C | 0.65 | 30.0 | C |
| | NB - L | 0.09 | 16.3 | B | 0.11 | 16.4 | B | 0.14 | 16.8 | B | 0.20 | 17.5 | B | 0.14 | 16.7 | B | 0.18 | 17.2 | B | 0.05 | 16.0 | B | 0.07 | 16.1 | B |
| | NB - TR | 1.05 | 53.6 | D | 1.16 | 101.6 | F * | 1.05 | 53.8 | D | 1.15 | 95.0 | F * | 1.05 | 54.1 | D | 1.18 | 108.5 | F * | 1.05 | 54.3 | D | 1.18 | 107.9 | F * |
| | SB - L | 0.77 | 65.0 | E | 0.82 | 73.5 | E * | 0.89 | 69.6 | E | 0.95 | 83.2 | F * | 0.74 | 56.2 | E | 0.77 | 61.5 | E * | 0.63 | 47.0 | D | 0.68 | 52.4 | D |
| | SB - R | 0.68 | 25.8 | C | 0.74 | 27.9 | C | 0.88 | 32.3 | C | 0.95 | 39.4 | D * | 0.78 | 28.8 | C | 0.85 | 32.6 | C | 0.66 | 25.1 | C | 0.71 | 26.9 | C |
| | SB - R | 0.37 | 19.8 | B | 0.39 | 20.2 | C | 0.69 | 25.2 | C | 0.74 | 26.5 | C | 0.35 | 19.4 | B | 0.38 | 19.8 | B | 0.31 | 18.9 | B | 0.33 | 19.2 | B |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L | 0.70 | 21.7 | C | 0.78 | 26.2 | C | 0.70 | 20.6 | C | 0.78 | 24.2 | C | 0.78 | 26.5 | C | 0.87 | 36.0 | D | 0.72 | 22.1 | C | 0.80 | 26.8 | C |
| | EB - TR | 0.45 | 15.6 | B | 0.48 | 16.1 | B | 0.41 | 15.0 | B | 0.45 | 15.4 | B | 0.36 | 14.5 | B | 0.40 | 15.0 | B | 0.38 | 14.6 | B | 0.42 | 15.2 | B |
| | WB - LTR | 0.83 | 32.1 | C | 0.89 | 36.0 | D | 0.77 | 30.3 | C | 0.82 | 32.6 | C | 0.88 | 33.5 | C | 0.95 | 39.3 | D * | 0.74 | 29.6 | C | 0.79 | 31.6 | C |
| | NB - LTR | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B |
| | SB - LTR | 0.71 | 28.0 | C | 0.78 | 30.9 | C | 0.97 | 36.5 | D | 1.05 | 57.7 | E * | 0.69 | 27.2 | C | 0.77 | 29.9 | C | 0.61 | 25.4 | C | 0.68 | 27.1 | C |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | EB - TR | 0.66 | 17.6 | B | 0.71 | 18.9 | B | 0.65 | 17.8 | B | 0.69 | 19.1 | B | 0.83 | 21.6 | C | 0.89 | 24.8 | C | 0.68 | 17.8 | B | 0.72 | 19.2 | B |
| | WB - LT | 0.48 | 14.2 | B | 0.54 | 15.2 | B | 0.99 | 32.5 | C | 1.10 | 72.8 | E * | 0.75 | 19.2 | B | 0.84 | 23.3 | C | 0.66 | 17.2 | B | 0.74 | 19.4 | B |
| | NB - LR | 0.28 | 22.8 | C | 0.30 | 23.1 | C | 0.37 | 34.7 | C | 0.39 | 35.3 | D | 0.23 | 22.1 | C | 0.25 | 22.4 | C | 0.27 | 22.6 | C | 0.28 | 22.8 | C |
| 38. Forest Avenue (E-W) @ Richmond Avenue-Morningstar Road (N-S) | EB - L | 0.33 | 23.5 | C | <u>0.40</u> | <u>28.2</u> | <u>C</u> | 0.32 | 23.5 | C | <u>0.40</u> | <u>28.2</u> | <u>C</u> | 0.33 | 23.2 | C | <u>0.41</u> | <u>27.7</u> | <u>C</u> | 0.25 | 21.9 | C | <u>0.30</u> | <u>25.8</u> | <u>C</u> |
| | EB - TR | 0.77 | 28.8 | C | <u>0.97</u> | <u>46.4</u> | <u>D *</u> | 0.76 | 28.5 | C | <u>0.96</u> | <u>44.8</u> | <u>D *</u> | 0.84 | 30.6 | C | <u>1.06</u> | <u>70.8</u> | <u>E *</u> | 0.79 | 29.1 | C | <u>1.00</u> | <u>51.1</u> | <u>D *</u> |
| | WB - L | 0.71 | 26.1 | C | 0.91 | 56.9 | E * | 0.92 | 48.8 | D | 1.20 | 138.7 | F * | 0.82 | 40.4 | D | 1.00 | 75.3 | E * | 0.79 | 35.3 | D | 0.98 | 70.4 | E * |
| | WB - TR | 0.37 | 12.2 | B | 0.45 | 16.5 | B | 0.42 | 12.7 | B | 0.51 | 17.2 | B | 0.40 | 12.5 | B | 0.49 | 16.9 | B | 0.38 | 12.3 | B | 0.46 | 16.5 | B |
| | NB - L | 0.74 | 41.0 | D | <u>0.55</u> | <u>21.6</u> | <u>C</u> | 0.59 | 34.7 | C | <u>0.41</u> | <u>19.9</u> | <u>B</u> | 0.72 | 39.5 | D | <u>0.53</u> | <u>21.3</u> | <u>C</u> | 0.81 | 47.6 | D | <u>0.57</u> | <u>22.6</u> | <u>C</u> |
| | NB - T | 0.43 | 25.5 | C | 0.40 | 20.8 | C | 0.49 | 26.6 | C | 0.44 | 21.6 | C | 0.50 | 26.6 | C | 0.46 | 21.7 | C | 0.50 | 26.5 | C | 0.46 | 21.6 | C |
| | NB - R | 0.33 | 12.9 | B | 0.32 | 10.7 | B | 0.28 | 12.3 | B | 0.27 | 10.2 | B | 0.30 | 12.5 | B | 0.29 | 10.4 | B | 0.30 | 12.4 | B | 0.29 | 10.3 | B |
| | SB - LTR | 0.60 | 29.1 | C | 0.80 | 43.4 | D | 0.80 | 34.6 | C | 1.00 | 64.3 | E * | 0.67 | 31.2 | C | 0.86 | 47.0 | D | 0.84 | 36.4 | D | 0.98 | 58.2 | E * |

Notes:

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right, Df-Analysis considers a Defacto Left Lane on this approach

V/C Ratio - Volume to Capacity Ratio, sec. - Seconds

LOS - Level of Service

* - Denotes a congested movement (LOS of E or F, or V/C ratio greater than or equal to 0.9)

Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

Table 10-14

2019 No-Action Congested Lane Groups

| | LANE GROUP | MD PEAK HOUR | | | PM PEAK HOUR | | | SAT MD PEAK HOUR | | | SAT PM PEAK HOUR | | |
|--|------------|--------------|--------------|------|--------------|--------------|-----|------------------|--------------|-----|------------------|--------------|-----|
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R | | | | 0.98 | 39.3 | D | 0.98 | 43.6 | D | 1.12 | 83.1 | F |
| | SB - L | 1.13 | 125.0 | F | | | | 1.13 | 118.1 | F | 1.12 | 118.7 | F |
| | SB - TR | | | | 1.10 | 80.1 | F | 1.00 | 42.6 | D | | | |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 0.95 | 58.9 | E | | | | 1.10 | 90.4 | F | 0.95 | 54.7 | D |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | | | | 0.92 | 48.0 | D |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | 1.02 | 61.6 | E | 1.06 | 77.5 | E | 1.01 | 65.3 | E |
| | NB - T | | | | | | | 1.08 | 64.1 | E | | | |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | | | | | | | 0.97 | 66.4 | E | 0.93 | 58.6 | E |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR | 1.18 | 122.2 | F | 1.17 | 118.2 | F | 1.19 | 123.5 | F | 1.19 | 122.9 | F |
| | NB - TR | 1.00 | 61.1 | E | 1.06 | 76.0 | E | 1.17 | 117.6 | F | 1.14 | 103.4 | F |
| | SB - L | | | | 0.85 | 55.5 | E | | | | | | |
| | SB - TR | 1.17 | 116.4 | F | 1.14 | 102.6 | F | 1.16 | 112.2 | F | 1.16 | 111.4 | F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | NB - LTR | 1.07 | 93.4 | F | 0.92 | 52.2 | D | 1.21 | 141.2 | F | 1.21 | 142.0 | F |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 0.97 | 39.9 | D | 1.04 | 53.8 | D | | | |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | | | | | | | 0.66 | 57.9 | E | | | |
| | EB - T | 0.83 | 63.2 | E | 0.92 | 71.9 | E | | | | 0.79 | 59.0 | E |
| | EB - R | | | | 0.97 | 88.8 | F | 1.33 | 213.0 | F | | | |
| | WB - L | 1.09 | 95.9 | F | 1.29 | 117.0 | F | 1.15 | 117.4 | F | 1.15 | 119.9 | F |
| | NB - L | 0.71 | 60.1 | E | 0.75 | 60.1 | E | 0.73 | 55.4 | E | | | |
| | NB - T | | | | | | | 0.92 | 45.4 | D | 0.91 | 44.7 | D |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 0.95 | 46.1 | D | | | | | | |
| | EB - LR | 1.13 | 97.2 | F | 1.13 | 96.2 | F | 1.13 | 98.4 | F | | | |
| | NB - L | 0.95 | 75.1 | E | 1.05 | 94.4 | F | 0.94 | 70.2 | E | 1.00 | 80.1 | F |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 1.12 | 78.2 | E | 1.06 | 54.9 | D | 0.92 | 27.2 | C |
| | SB - L | 0.94 | 72.9 | E | 1.00 | 72.1 | E | 1.12 | 116.3 | F | 1.01 | 88.9 | F |
| | | | | | | | | | | | | | |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.12 | 119.7 | F | 1.12 | 92.8 | F | 1.03 | 62.1 | E | | | |
| | NB - L | 1.13 | 112.2 | F | 1.11 | 102.8 | F | 1.13 | 105.4 | F | 1.12 | 102.1 | F |
| | SB - TR | | | | 0.91 | 31.2 | C | 1.07 | 64.7 | E | 0.91 | 33.2 | C |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | | | | 1.05 | 88.6 | F | | | |
| | NB - TR | | | | 0.92 | 34.5 | C | 0.93 | 30.5 | C | 0.96 | 34.4 | C |
| | SB - L | 1.07 | 110.9 | F | 0.90 | 58.2 | E | 1.12 | 122.9 | F | 1.12 | 124.6 | F |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | | | | | | | 0.96 | 35.2 | D | | | |
| | EB - LR | | | | | | | 1.02 | 48.5 | D | | | |
| | NB - T | | | | | | | 0.94 | 33.1 | C | | | |
| | SB - T | | | | 0.98 | 32.8 | C | 0.97 | 32.9 | C | 0.92 | 29.4 | C |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | WB - T | | | | 1.06 | 71.1 | E | 1.01 | 59.8 | E | 1.01 | 61.7 | E |
| | NB - TR | | | | 1.04 | 61.5 | E | 1.09 | 77.1 | E | 0.94 | 39.9 | D |
| | SB - L | 1.03 | 75.2 | E | 1.08 | 83.4 | F | 1.11 | 95.9 | F | 0.99 | 60.1 | E |
| | SB - TR | | | | 0.90 | 34.5 | C | | | | | | |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | | | | 0.94 | 26.9 | C | 0.92 | 29.4 | C | 0.95 | 32.1 | C |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | | | | 0.97 | 43.0 | D | 0.93 | 38.4 | D | 0.96 | 41.5 | D |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | EB - L | | | | 1.01 | 46.2 | D | | | | | | |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.48 | 50.5 | F | 0.63 | 68.6 | F | 0.44 | 39.4 | E | 0.49 | 40.9 | E |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - TR | | | | 0.97 | 58.9 | E | | | | | | |
| | SB - LTR | 0.96 | 33.3 | C | 1.13 | 83.6 | F | 1.14 | 90.9 | F | 1.14 | 91.1 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | | | | 0.92 | 35.8 | D | | | | | | |
| | WB - LT | | | | 1.20 | 110.8 | F | | | | 1.00 | 39.1 | D |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 77.1 | E | | | | | | |
| | WB - L | | | | | | | 0.96 | 51.5 | D | | | |
| | WB - TR | | | | 0.98 | 55.2 | E | | | | | | |
| | NB - TR | 1.16 | 101.6 | F | 1.15 | 95.0 | F | 1.18 | 108.5 | F | 1.18 | 107.9 | F |
| | SB - L | 0.82 | 73.5 | E | 0.95 | 83.2 | F | 0.77 | 61.5 | E | | | |
| SB - T | | | | 0.95 | 39.4 | D | | | | | | | |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | WB - LTR | | | | | | | 0.95 | 39.3 | D | | | |
| | SB - LTR | | | | 1.05 | 57.7 | E | | | | | | |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | WB - LT | | | | 1.10 | 72.8 | E | | | | | | |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | EB - TR | 0.97 | 46.4 | D | 0.96 | 44.8 | D | 1.06 | 70.8 | E | 1.00 | 51.1 | D |
| | WB - L | 0.91 | 56.9 | E | 1.20 | 138.7 | F | 1.00 | 75.3 | E | 0.98 | 70.4 | E |
| | SB - LTR | | | | 1.00 | 64.3 | E | | | | 0.98 | 58.2 | E |

Table 10-14

2019 No-Action Congested Lane Groups

| | LANE GROUP | MD PEAK HOUR | | | PM PEAK HOUR | | | SAT MD PEAK HOUR | | | SAT PM PEAK HOUR | | |
|---|------------|--------------|--------------|------|--------------|--------------|-----|------------------|--------------|-----|------------------|--------------|-----|
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R | | | | 0.98 | 39.3 | D | 0.98 | 43.6 | D | 1.12 | 83.1 | F |
| | SB - L | 1.13 | 125.0 | F | | | | 1.13 | 118.1 | F | 1.12 | 118.7 | F |
| | SB - TR | | | | 1.10 | 80.1 | F | 1.00 | 42.6 | D | | | |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 0.95 | 58.9 | E | | | | 1.10 | 90.4 | F | 0.95 | 54.7 | D |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | | | | 0.92 | 48.0 | D |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | 1.02 | 61.6 | E | 1.06 | 77.5 | E | 1.01 | 65.3 | E |
| | NB - T | | | | | | | 1.08 | 64.1 | E | | | |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | | | | | | | 0.97 | 66.4 | E | 0.93 | 58.6 | E |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR | 1.18 | 122.2 | F | 1.17 | 118.2 | F | 1.19 | 123.5 | F | 1.19 | 122.9 | F |
| | NB - TR | 1.00 | 61.1 | E | 1.06 | 76.0 | E | 1.17 | 117.6 | F | 1.14 | 103.4 | F |
| | SB - L | | | | 0.85 | 55.5 | E | | | | | | |
| | SB - TR | 1.17 | 116.4 | F | 1.14 | 102.6 | F | 1.16 | 112.2 | F | 1.16 | 111.4 | F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | NB - LTR | 1.07 | 93.4 | F | 0.92 | 52.2 | D | 1.21 | 141.2 | F | 1.21 | 142.0 | F |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 0.97 | 39.9 | D | 1.04 | 53.8 | D | | | |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | | | | | | | 0.66 | 57.9 | E | | | |
| | EB - T | 0.83 | 63.2 | E | 0.92 | 71.9 | E | | | | 0.79 | 59.0 | E |
| | EB - R | | | | 0.97 | 88.8 | F | 1.33 | 213.0 | F | | | |
| | WB - L | 1.09 | 95.9 | F | 1.29 | 117.0 | F | 1.15 | 117.4 | F | 1.15 | 119.9 | F |
| | NB - L | 0.71 | 60.1 | E | 0.75 | 60.1 | E | 0.73 | 55.4 | E | | | |
| | NB - T | | | | | | | 0.92 | 45.4 | D | 0.91 | 44.7 | D |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | | | | 0.95 | 46.1 | D | | | |
| | EB - LR | 1.13 | 97.2 | F | 1.13 | 96.2 | F | 1.13 | 98.4 | F | | | |
| | NB - L | 0.95 | 75.1 | E | 1.05 | 94.4 | F | 0.94 | 70.2 | E | 1.00 | 80.1 | F |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | 1.12 | 78.2 | E | 1.06 | 54.9 | D | 0.92 | 27.2 | C |
| | SB - L | 0.94 | 72.9 | E | 1.00 | 72.1 | E | 1.12 | 116.3 | F | 1.01 | 88.9 | F |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.12 | 119.7 | F | 1.12 | 92.8 | F | 1.03 | 62.1 | E | | | |
| | NB - L | 1.13 | 112.2 | F | 1.11 | 102.8 | F | 1.13 | 105.4 | F | 1.12 | 102.1 | F |
| | SB - TR | | | | 0.91 | 31.2 | C | 1.07 | 64.7 | E | 0.91 | 33.2 | C |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | | | | | | | 1.05 | 88.6 | F | | | |
| | NB - TR | | | | 0.92 | 34.5 | C | 0.93 | 30.5 | C | 0.96 | 34.4 | C |
| | SB - L | 1.07 | 110.9 | F | 0.90 | 58.2 | E | 1.12 | 122.9 | F | 1.12 | 124.6 | F |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | | | | | | | 0.96 | 35.2 | D | | | |
| | EB - LR | | | | | | | 1.02 | 48.5 | D | | | |
| | NB - T | | | | | | | 0.94 | 33.1 | C | | | |
| | SB - T | | | | 0.98 | 32.8 | C | 0.97 | 32.9 | C | 0.92 | 29.4 | C |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | WB - T | | | | 1.06 | 71.1 | E | 1.01 | 59.8 | E | 1.01 | 61.7 | E |
| | NB - TR | | | | 1.04 | 61.5 | E | 1.09 | 77.1 | E | 0.94 | 39.9 | D |
| | SB - L | 1.03 | 75.2 | E | 1.08 | 83.4 | F | 1.11 | 95.9 | F | 0.99 | 60.1 | E |
| | SB - TR | | | | 0.90 | 34.5 | C | | | | | | |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | | | | 0.94 | 26.9 | C | 0.92 | 29.4 | C | 0.95 | 32.1 | C |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | | | | 0.97 | 43.0 | D | 0.93 | 38.4 | D | 0.96 | 41.5 | D |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | EB - L | | | | 1.01 | 46.2 | D | | | | | | |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.48 | 50.5 | F | 0.63 | 68.6 | F | 0.44 | 39.4 | E | 0.49 | 40.9 | E |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - TR | | | | 0.97 | 58.9 | E | | | | | | |
| | SB - LTR | 0.96 | 33.3 | C | 1.13 | 83.6 | F | 1.14 | 90.9 | F | 1.14 | 91.1 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | | | | 0.92 | 35.8 | D | | | | | | |
| | WB - LT | | | | 1.20 | 110.8 | F | | | | 1.00 | 39.1 | D |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 77.1 | E | | | | | | |
| | WB - L | | | | | | | 0.96 | 51.5 | D | | | |
| | WB - TR | | | | 0.98 | 55.2 | E | | | | | | |
| | NB - TR | 1.16 | 101.6 | F | 1.15 | 95.0 | F | 1.18 | 108.5 | F | 1.18 | 107.9 | F |
| | SB - L | 0.82 | 73.5 | E | 0.95 | 83.2 | F | 0.77 | 61.5 | E | | | |
| SB - T | | | | 0.95 | 39.4 | D | | | | | | | |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | WB - LTR | | | | | | | 0.95 | 39.3 | D | | | |
| | SB - LTR | | | | 1.05 | 57.7 | E | | | | | | |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | WB - LT | | | | 1.10 | 72.8 | E | | | | | | |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | EB - TR | 0.97 | 46.4 | D | 0.96 | 44.8 | D | 1.06 | 70.8 | E | 1.00 | 51.1 | D |
| | WB - L | 0.91 | 56.9 | E | 1.20 | 138.7 | F | 1.00 | 75.3 | E | 0.98 | 70.4 | E |
| | SB - LTR | | | | 1.00 | 64.3 | E | | | | 0.98 | 58.2 | E |

FUTURE WITH THE PROPOSED PROJECT (WITH ACTION CONDITION)

As discussed earlier, the proposed action would result in the addition of approximately 313,583 gsf of retail to the existing 1,496,585 gsf of retail space in the Mall, as well as approximately 50,000 gsf of supermarket space and a 2,500-seat movie theater which will include approximately 54,488 gsf. As discussed above, for the purposes of the transportation analysis, the proposed expansion is anticipated to be completed by 2019. As discussed above in Section E, “Level 2 Screening Assessment,” auto and truck trips generated by this proposed development were assigned to the project site based on origin/destination data. The assignment of projected increment vehicle trips (including auto and truck trips) generated by the proposed development during the weekday midday and PM and Saturday midday and PM peak hours is shown in **Figures 10-11a-11c and 10-12a-12c** respectively.

INTERSECTION CAPACITY ANALYSIS

Figures 10-13a-13c, 10-14a-14c, 10-15a-15c, and 10-16a-16c show the weekday midday and PM and Saturday midday and PM peak hour traffic network volumes in the 2019 future with the proposed action. The volumes shown are the combination of the net incremental traffic generated by the proposed project and the No Action traffic network. No physical or operational changes to the study area street network are planned as part of the proposed action.

Table 10-15 shows a summary comparison of the overall intersection levels of service for future No Action and With Action conditions, the number of intersections experiencing at least one significant adverse impact in the With Action condition, and the number of lane groups operating at LOS E or F.

Table 10-15
No Action versus With Action Intersection Level of Service Summary

| | 2019 No Action Conditions | | | | 2019 With Action Conditions | | | |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|----------------------|---------------------------|-----------------------|
| | Weekday Midday Peak Hour | Weekday Midday Peak Hour | Weekday Midday Peak Hour | Weekday Midday Peak Hour | Weekday Midday Peak Hour | Weekday PM Peak Hour | Saturday Midday Peak Hour | Saturday PM Peak Hour |
| Number of Intersections Operating at LOS A/B/C | 32 | 27 | 25 | 34 <u>30</u> | 29 | 21 | 20 | 20 |
| Number of Intersections Operating at LOS D | 5 | 9 <u>8</u> | 11 | 6 | 6 <u>5</u> | 8 | 6 | 11 |
| Number of Intersections Operating at LOS E | 1 | 2 <u>3</u> | 1 | 0 <u>1</u> | 2 <u>3</u> | 7 <u>6</u> | 8 | 3 |
| Number of Intersections Operating at LOS F | 0 | 0 | 1 | 1 | 1 | 2 <u>3</u> | 4 | 4 |
| Number of Intersections with Significant Impacts | — | — | — | — | 14 | 26 | 24 | 24 |
| Number of Lane Groups Operating at LOS E/F out of Approximately 190 Lane Groups | 49 <u>21</u> | 29 <u>32</u> | 29 <u>30</u> | 20 <u>21</u> | 23 <u>25</u> | 38 <u>39</u> | 46 <u>48</u> | 36 <u>37</u> |
| Number of Lane Groups with Significant Impacts | — | — | — | — | 19 | 39 <u>37</u> | 43 | 35 |

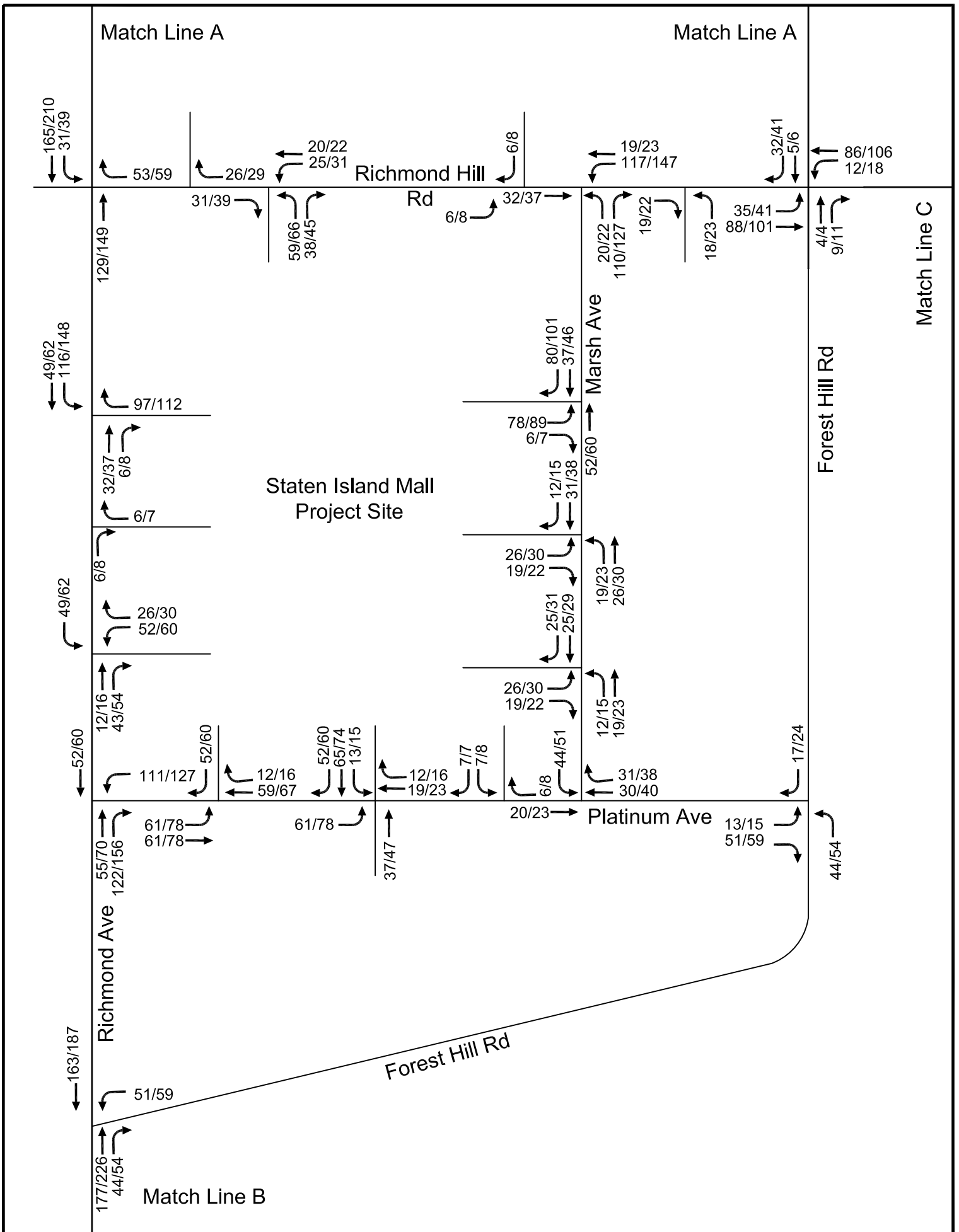


Figure 10-11a
Weekday Midday/PM Project Increment

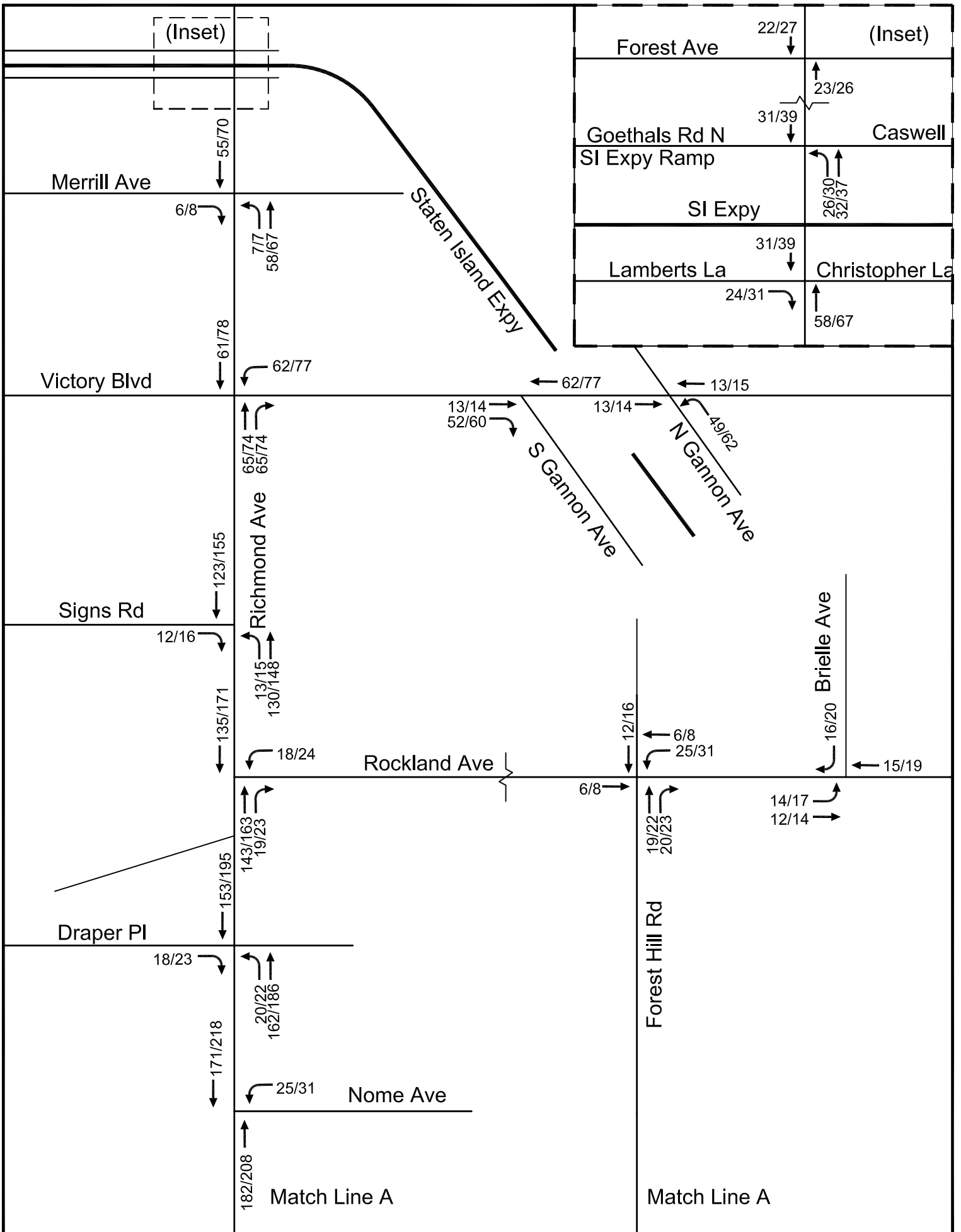


Figure 10-11b
Weekday Midday/PM Project Increment

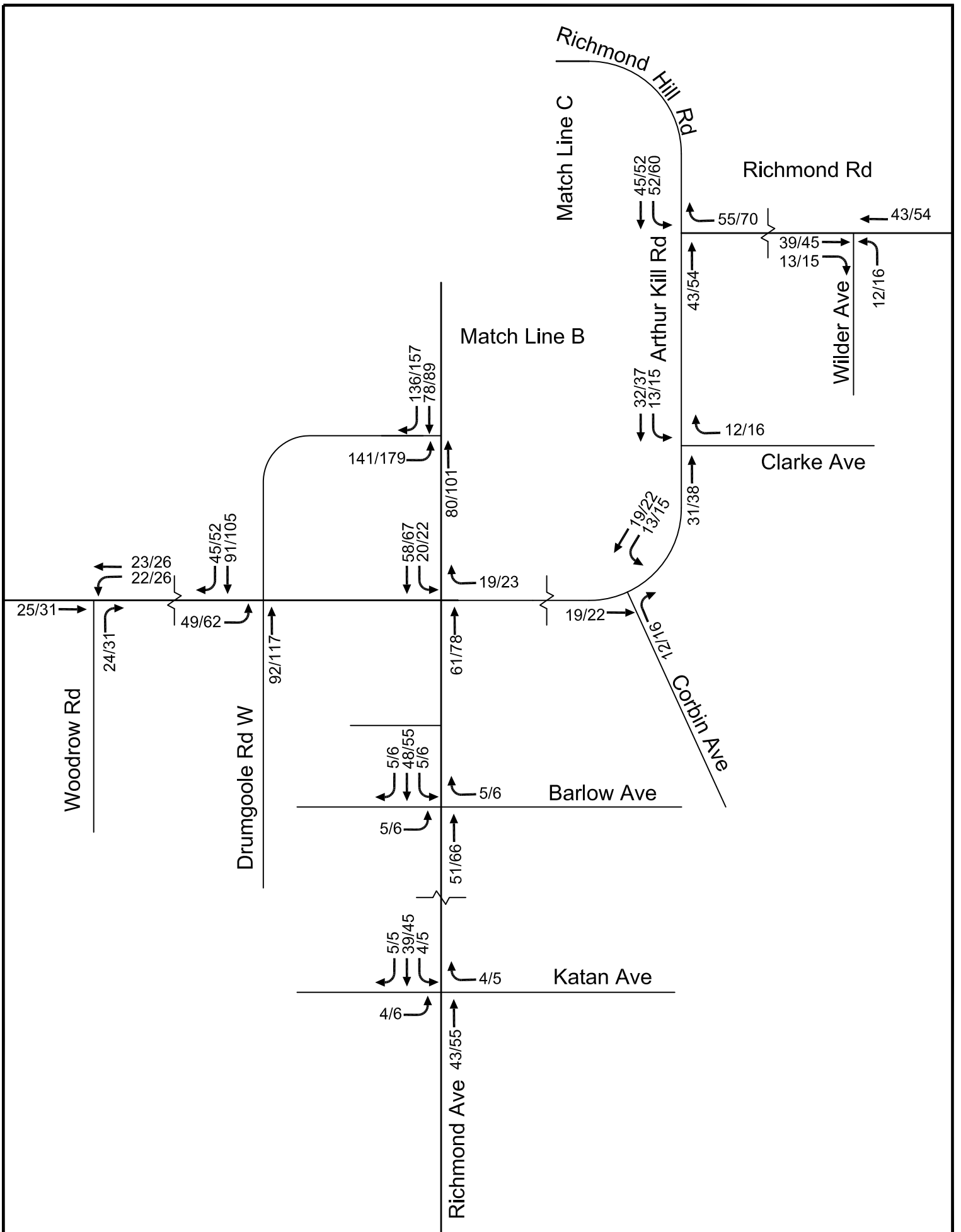


Figure 10-11c
Weekday Midday/PM Project Increment

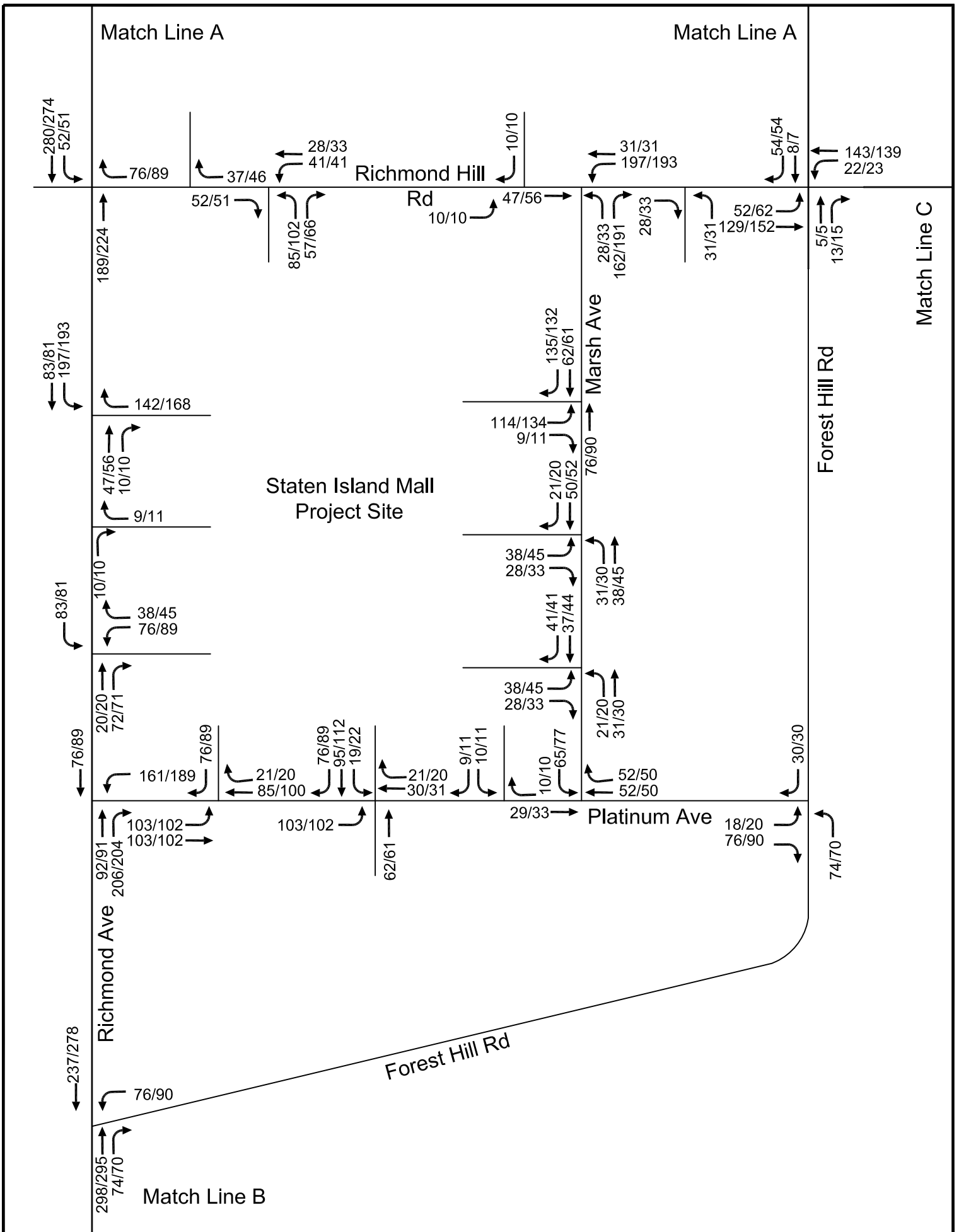


Figure 10-12a
Saturday Midday/PM Project Increment

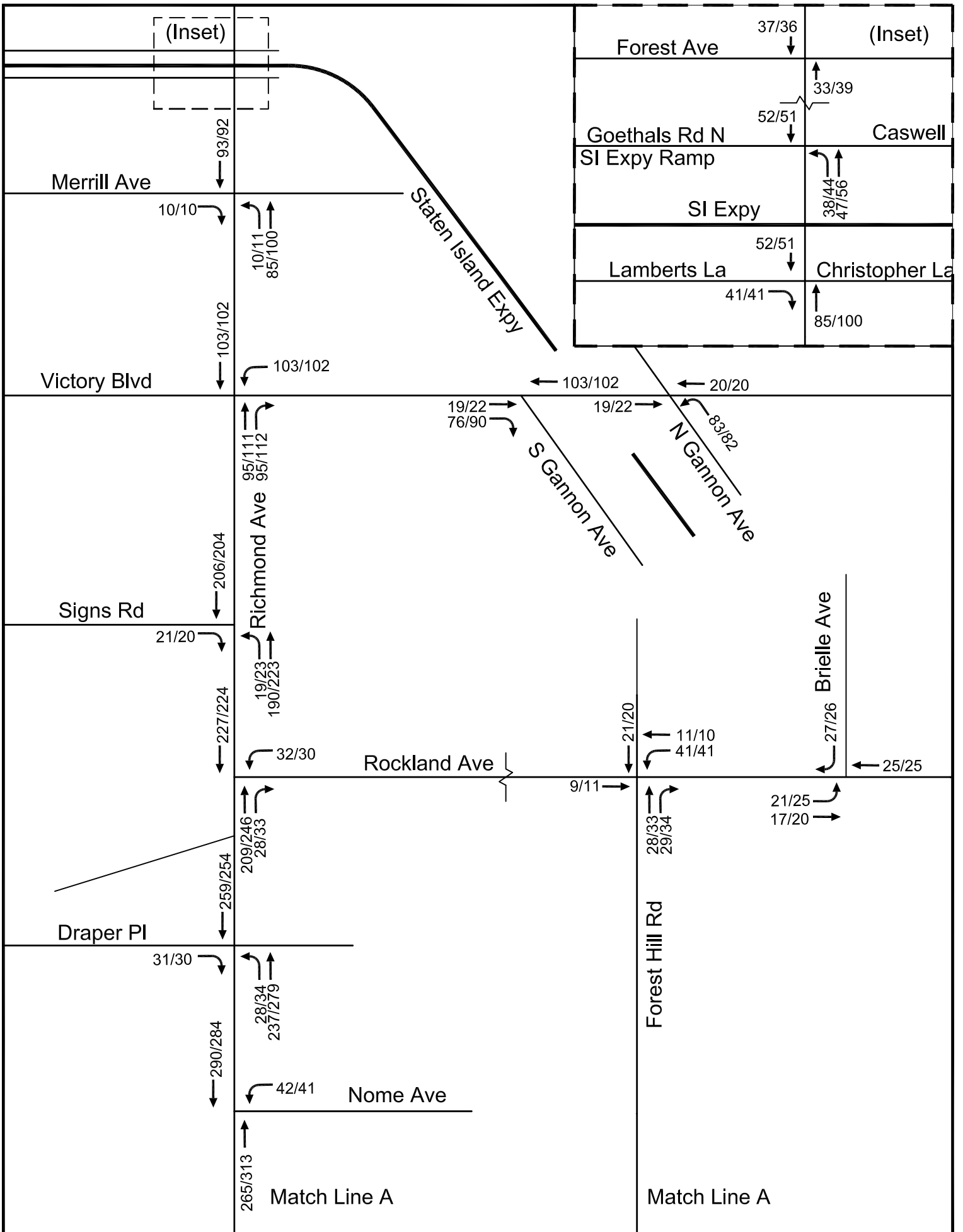


Figure 10-12b
Saturday MIDDAY/PM Project Increment

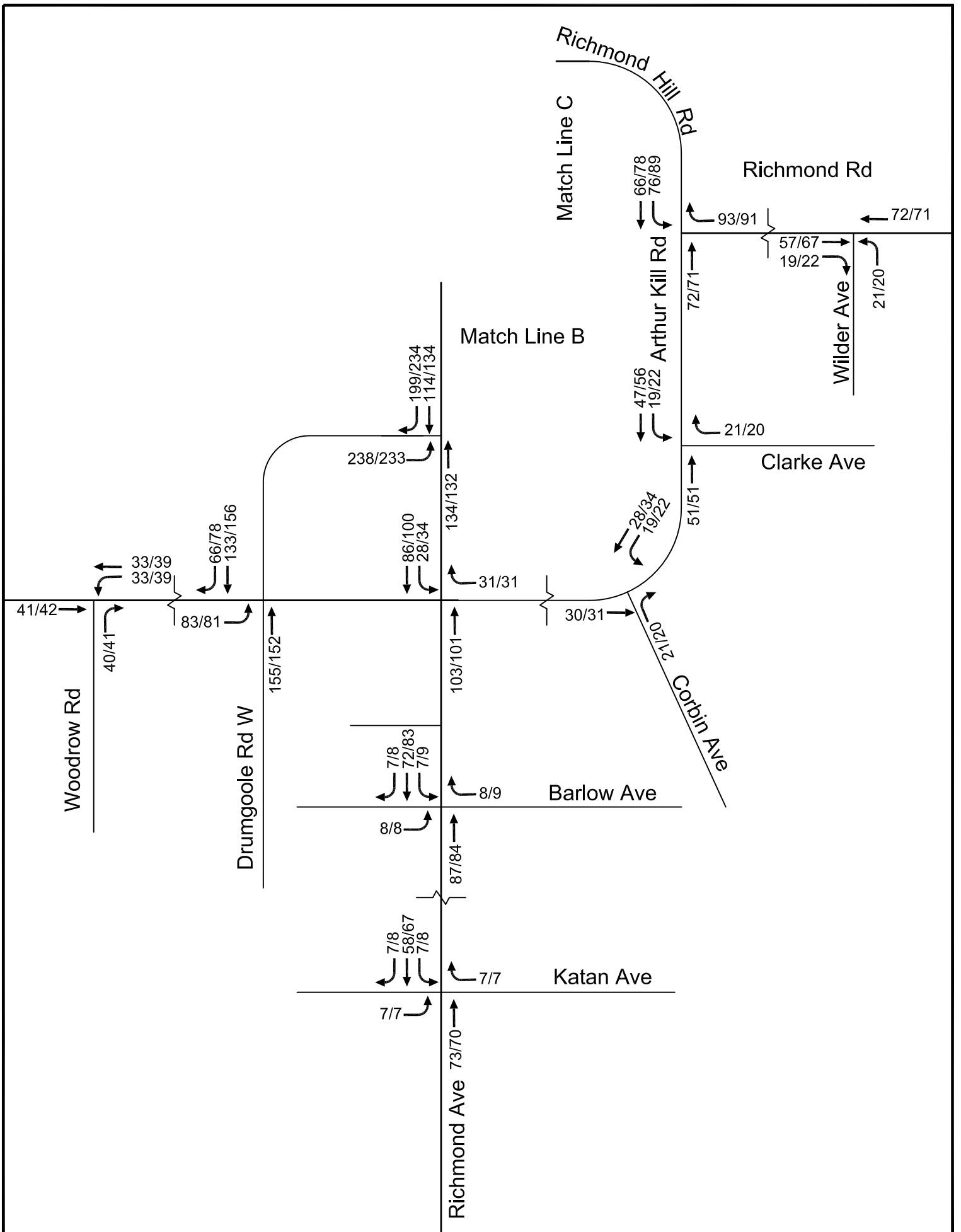


Figure 10-12c
Saturday Midday/PM Project Increment

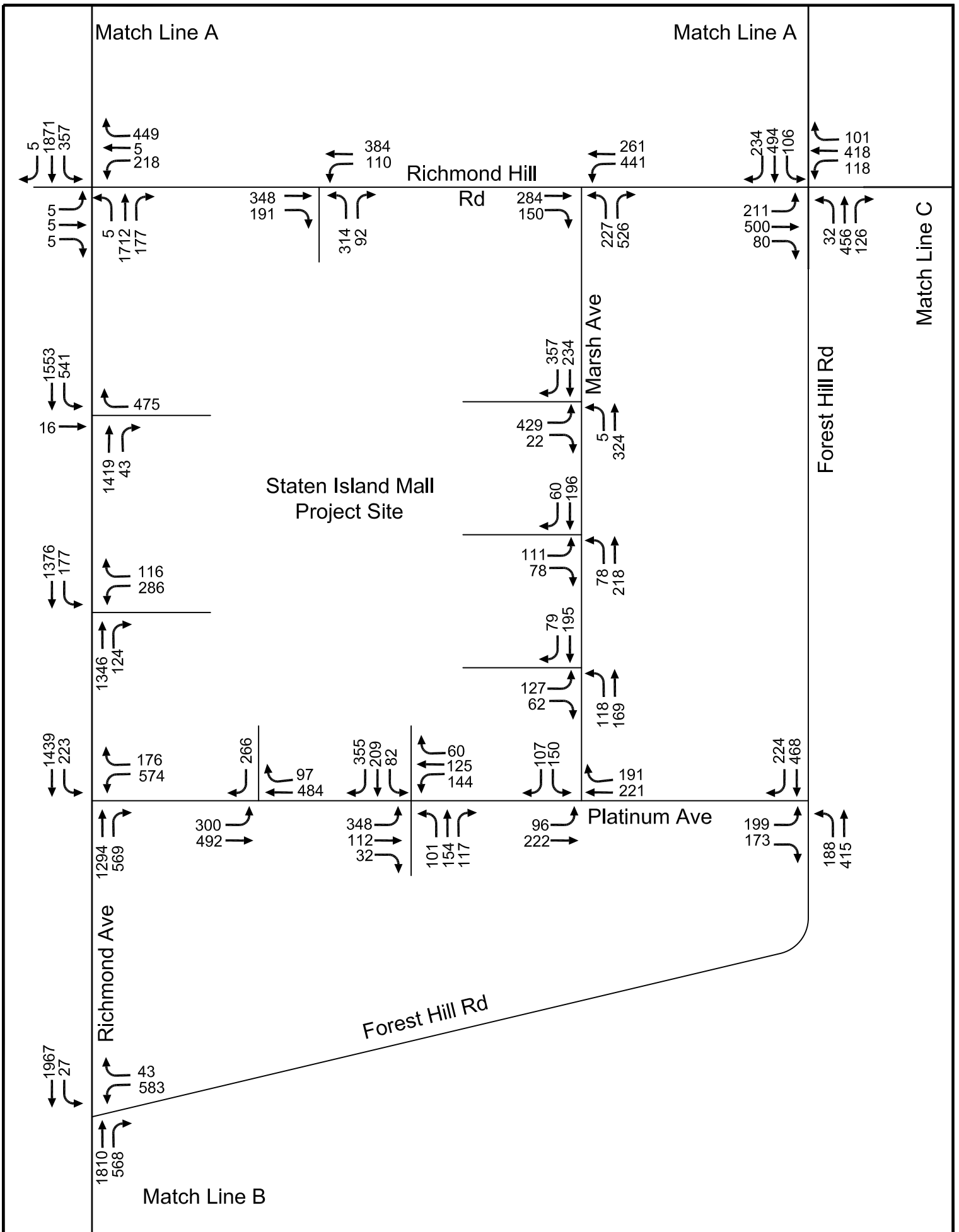


Figure 10-13a
2019 With-Action Weekday Midday Traffic Volumes

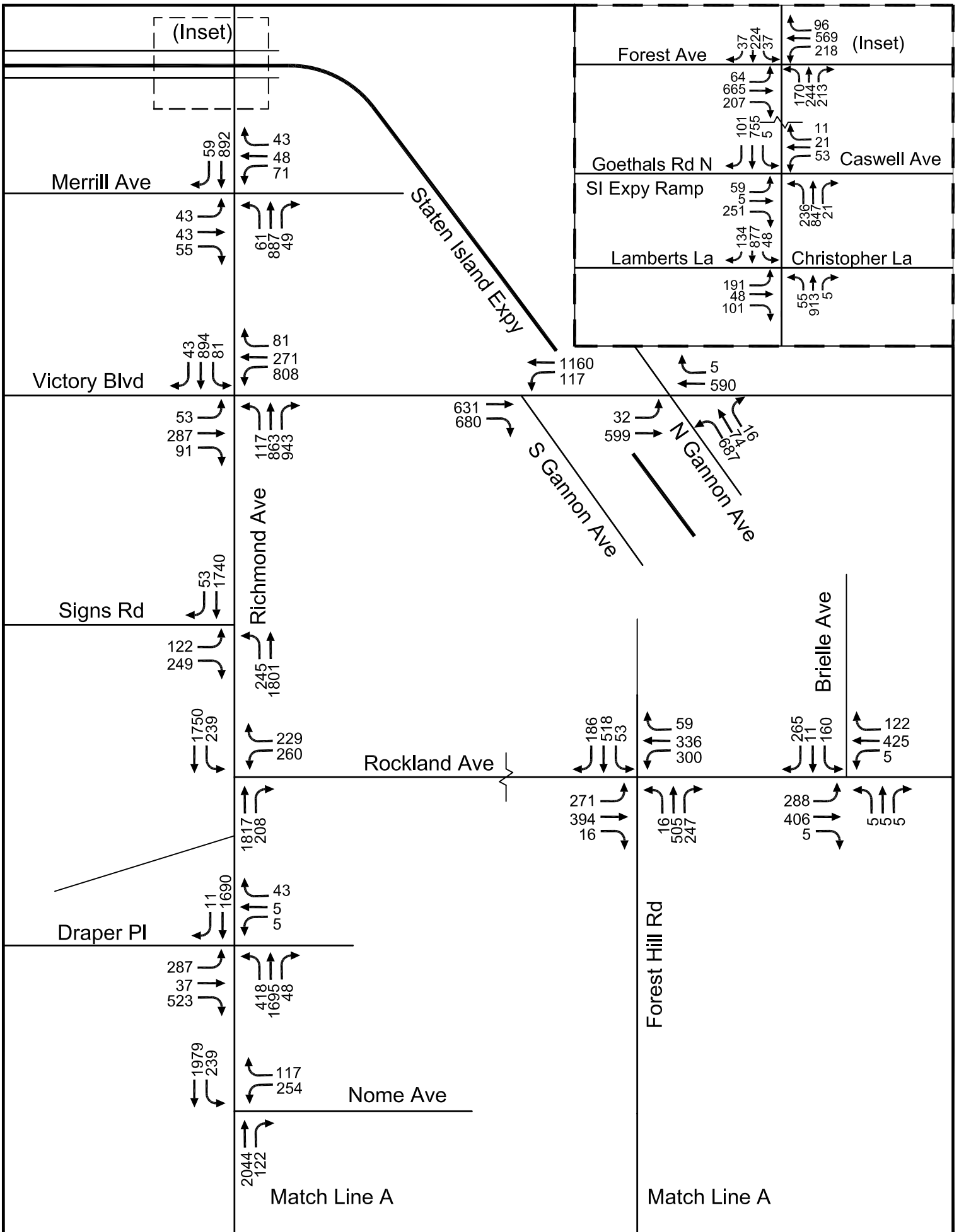


Figure 10-13b
 2019 With-Action Weekday Midday Traffic Volumes

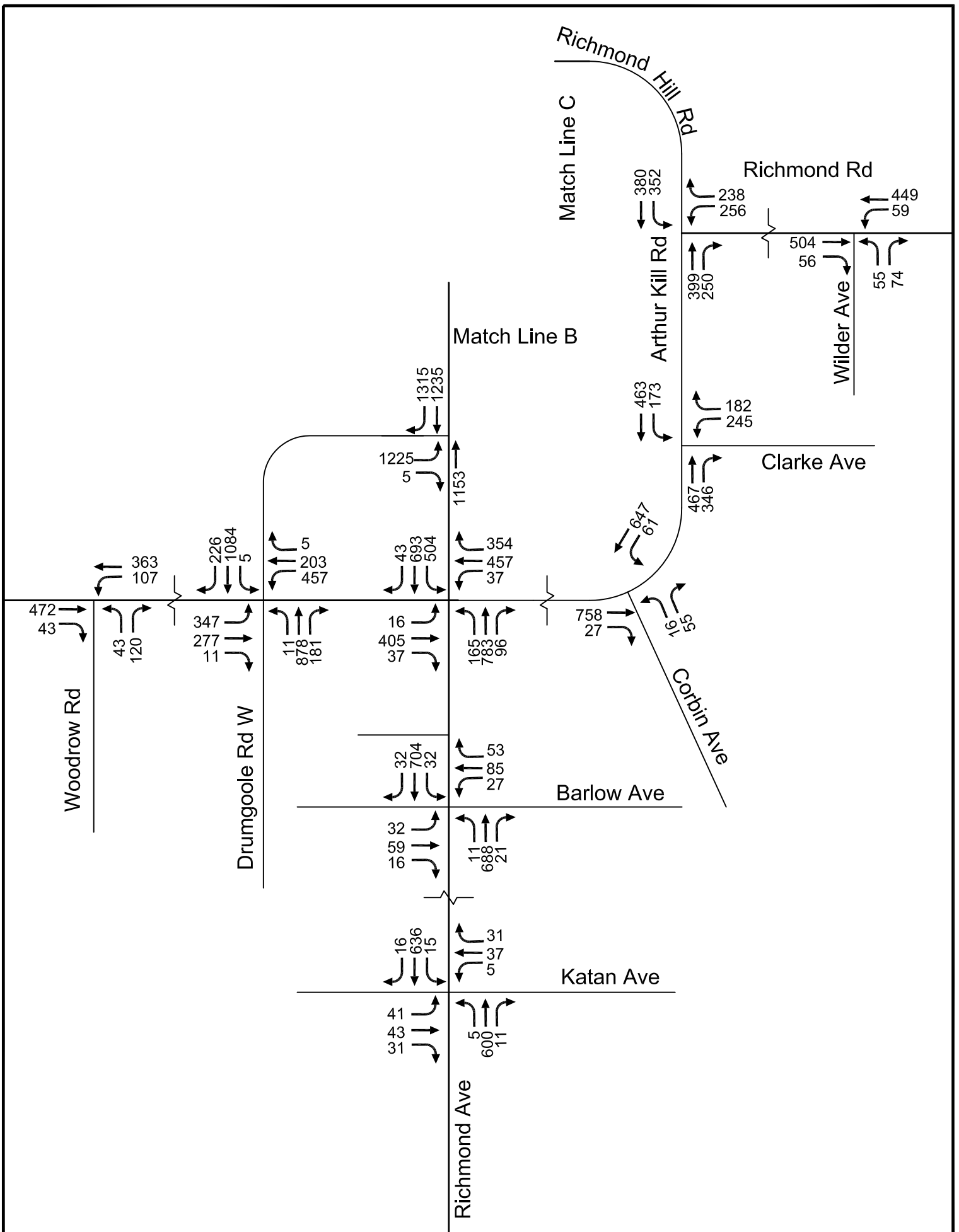


Figure 10-13c
2019 With-Action Weekday Midday Traffic Volumes

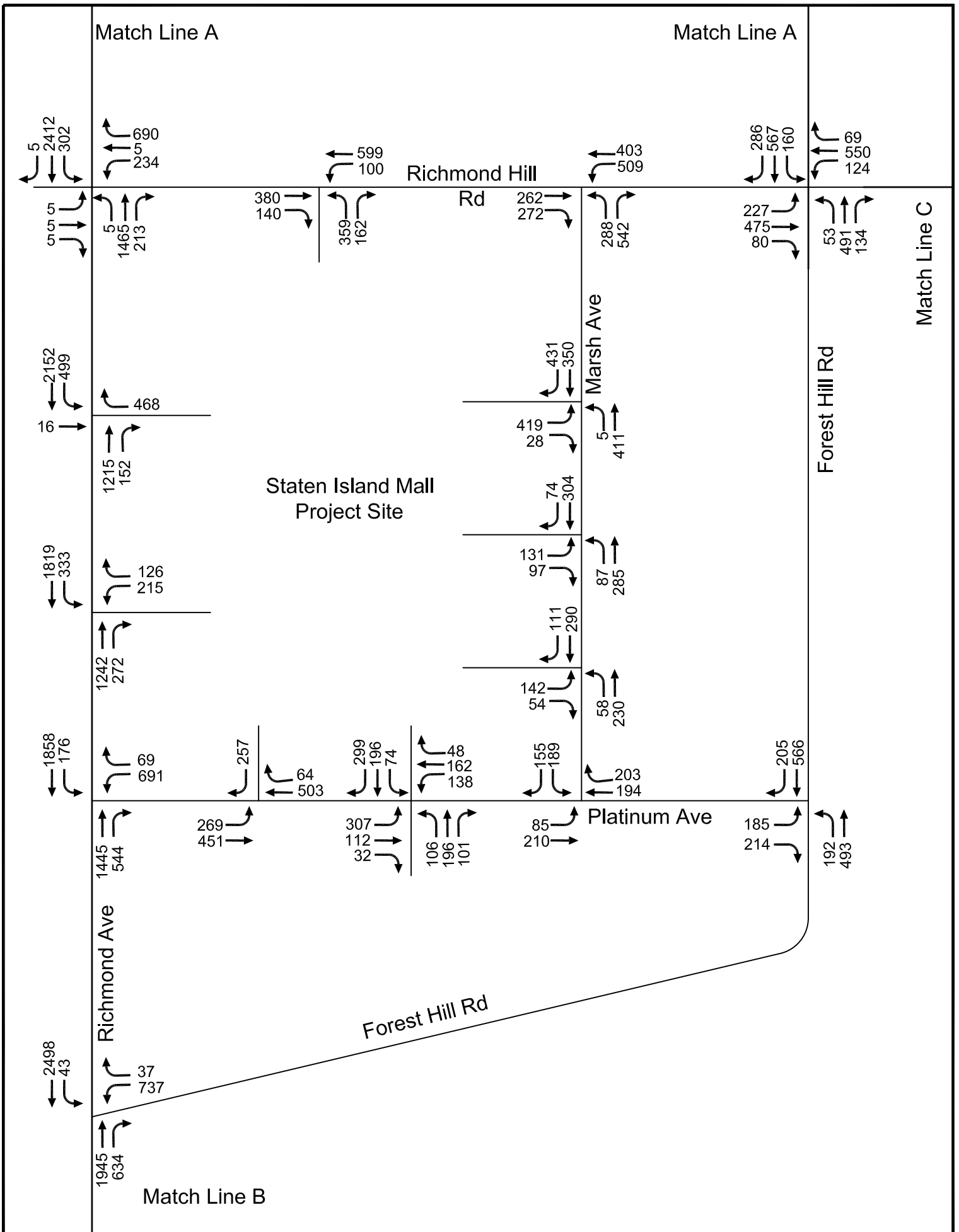
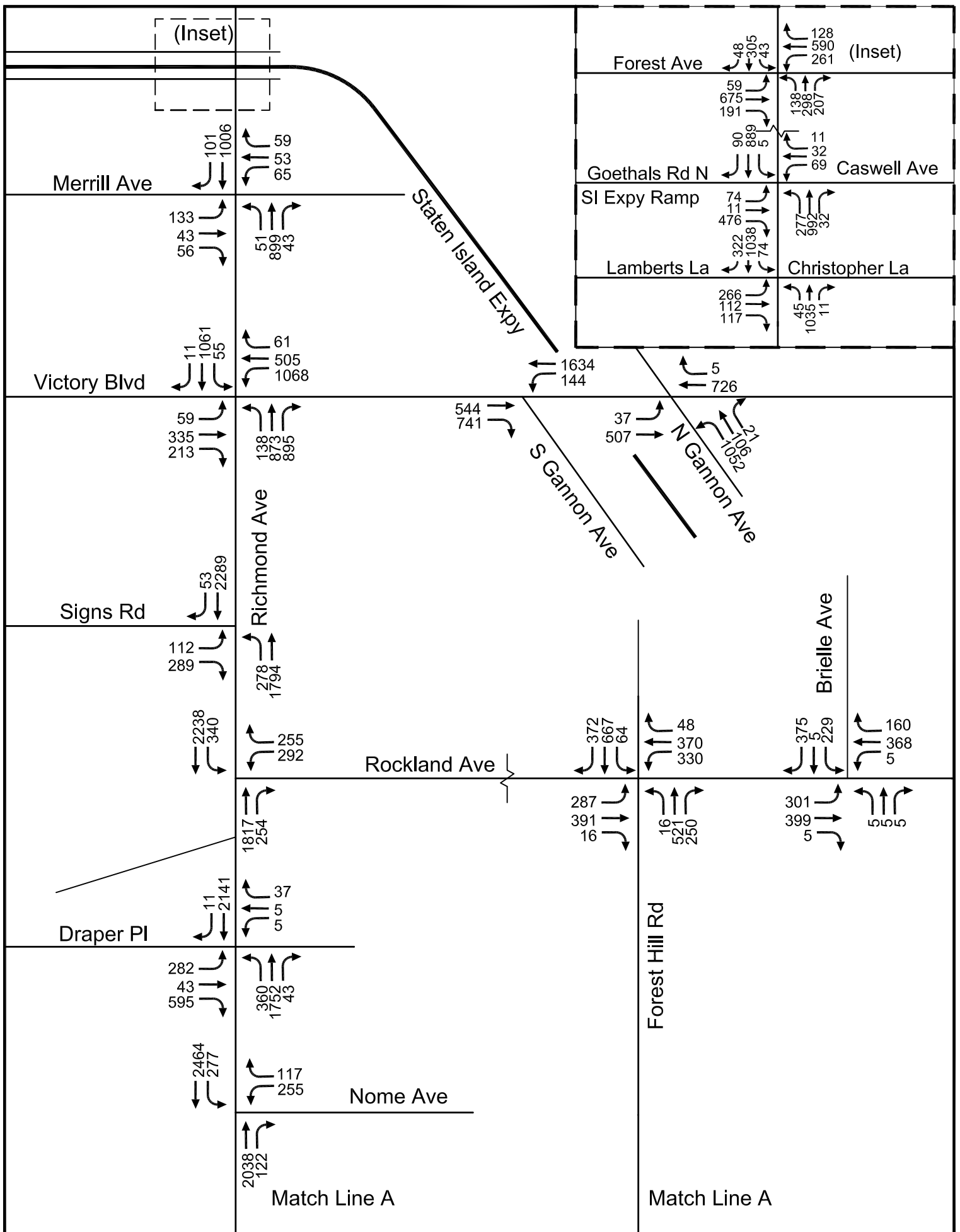


Figure 10-14a
2019 With-Action Weekday PM Traffic Volumes



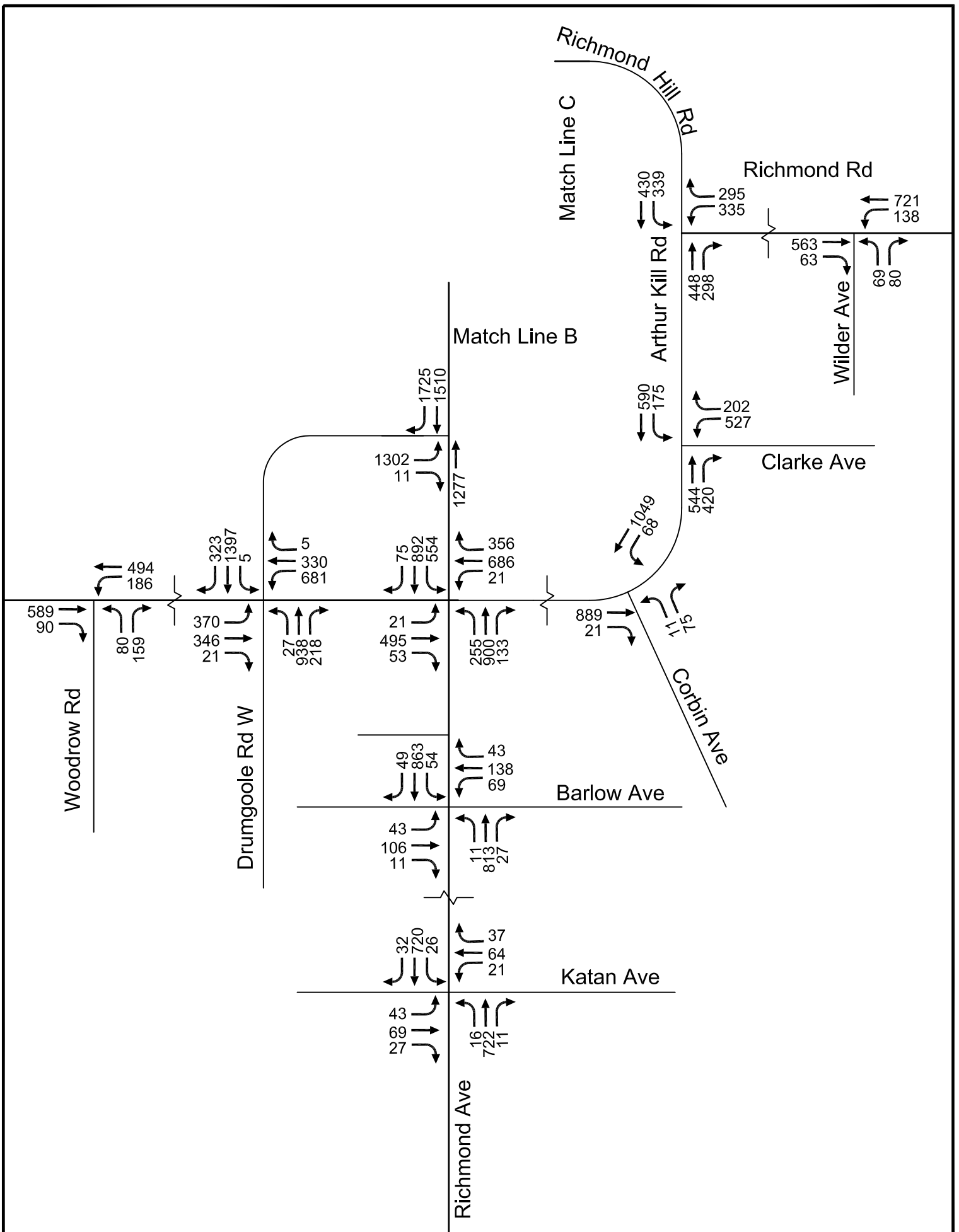


Figure 10-14c
2019 With-Action Weekday PM Traffic Volumes

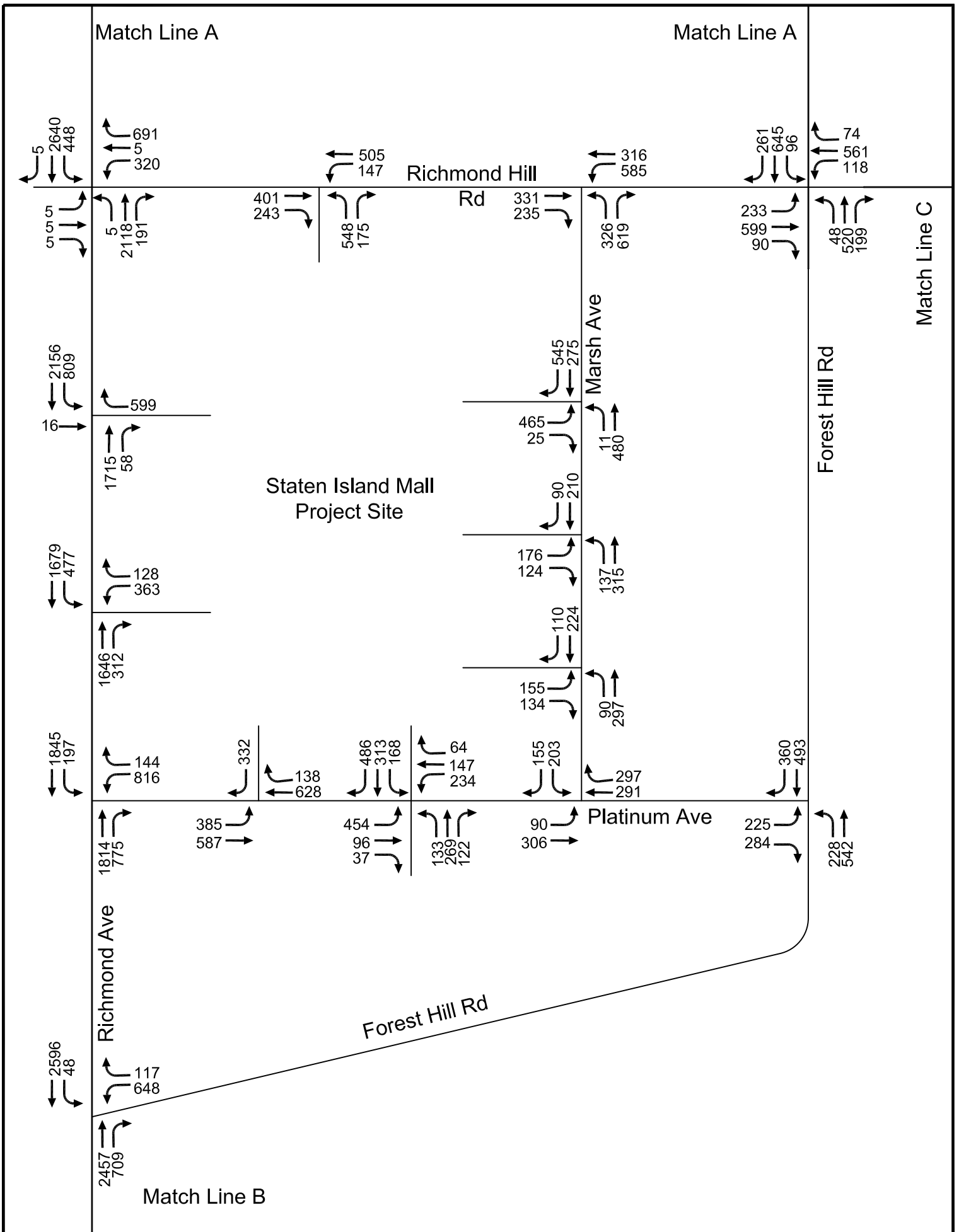


Figure 10-15a
2019 With-Action Saturday Midday Traffic Volumes

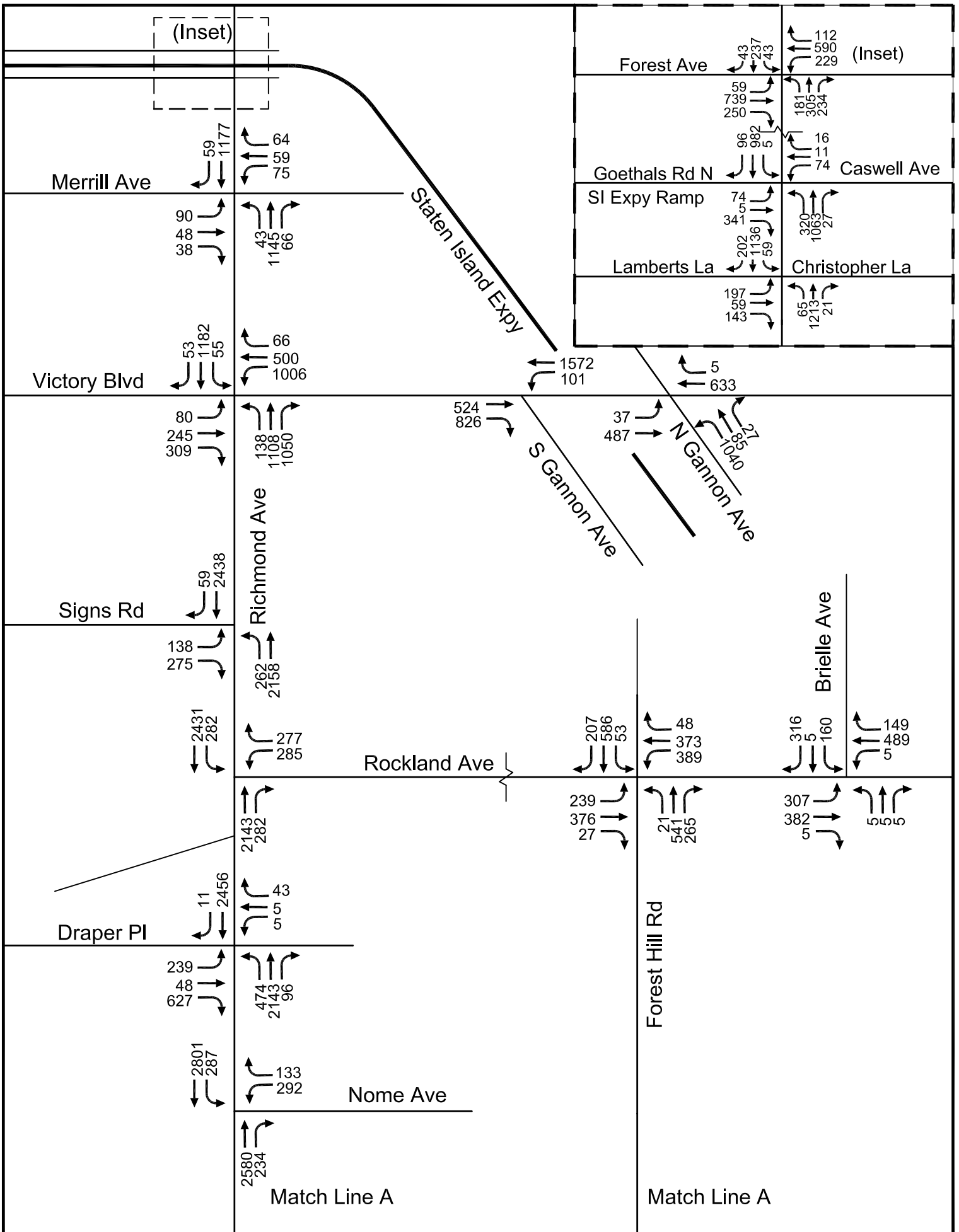


Figure 10-15b
2019 With-Action Saturday Midday Traffic Volumes

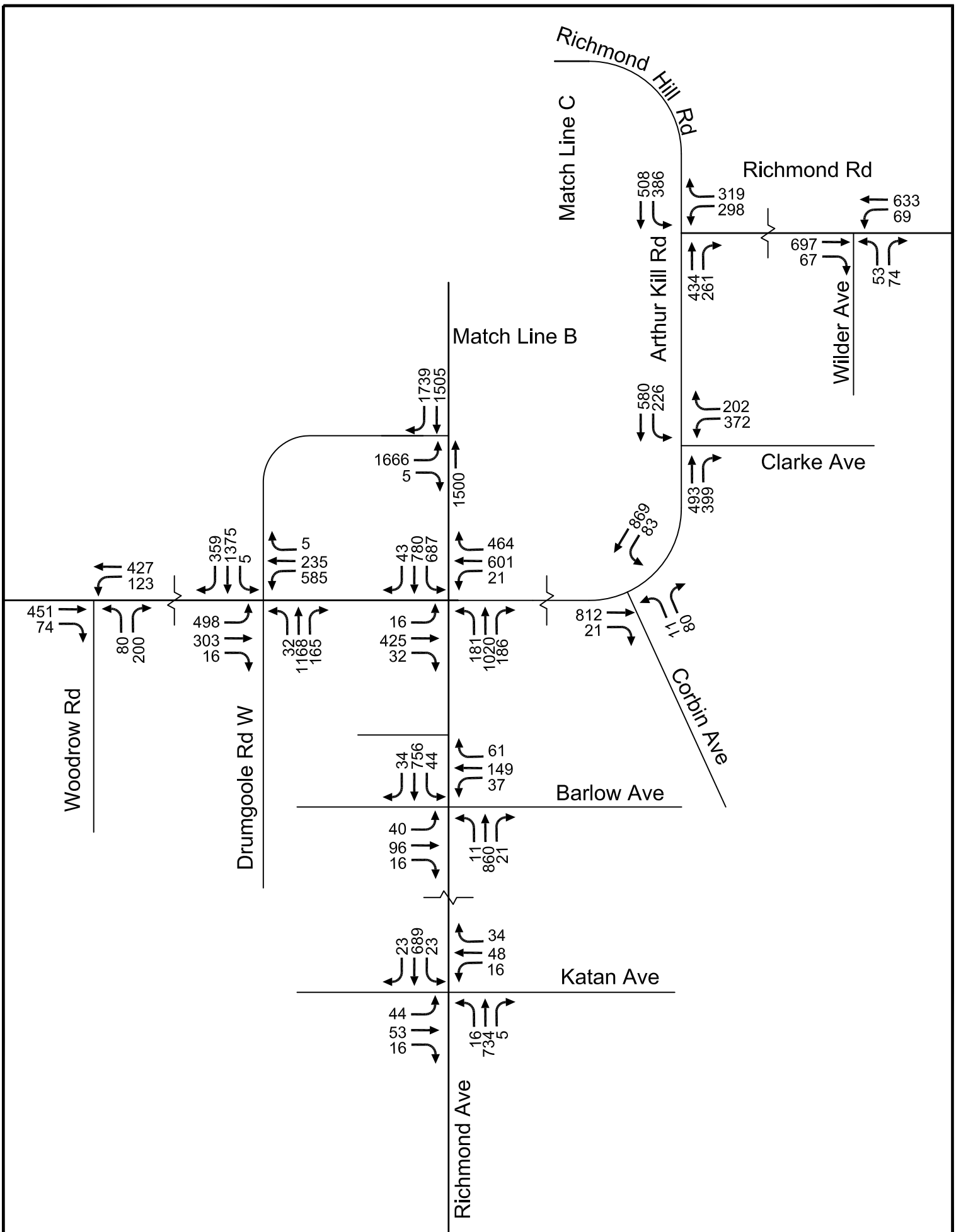


Figure 10-15c
2019 With-Action Saturday Midday Traffic Volumes

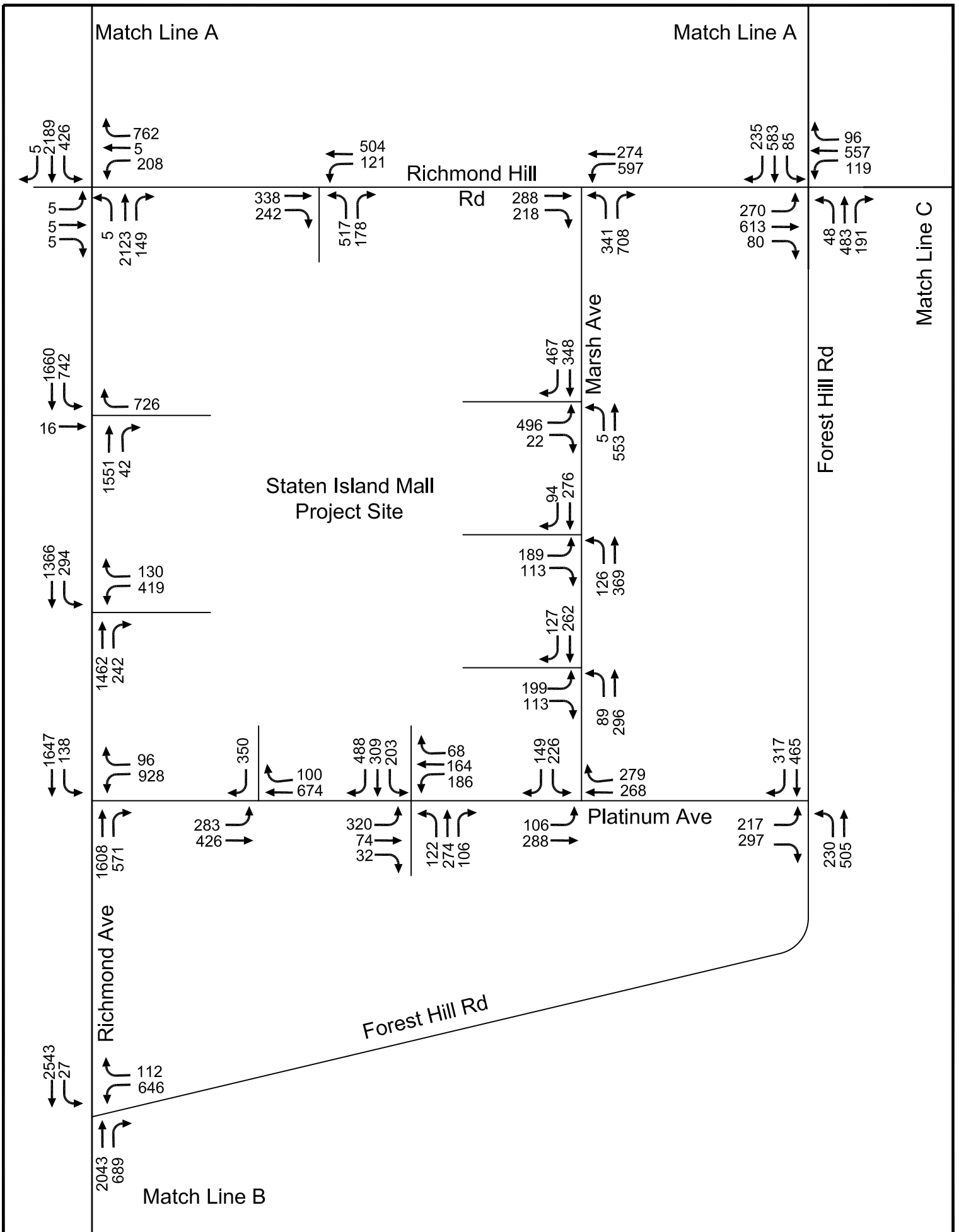


Figure 10-16a
2019 With-Action Saturday PM Traffic Volumes

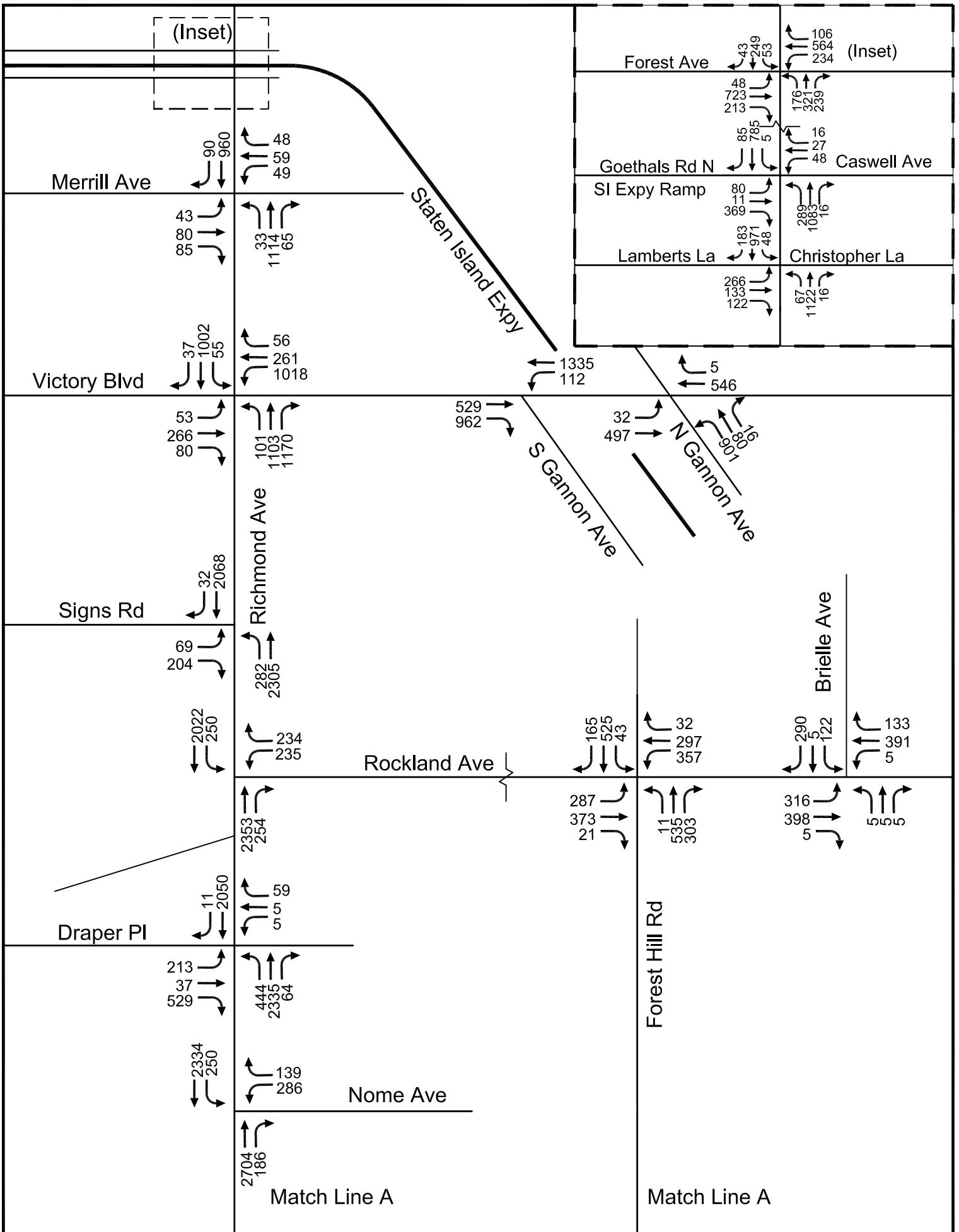


Figure 10-16b
2019 With-Action Saturday PM Traffic Volumes

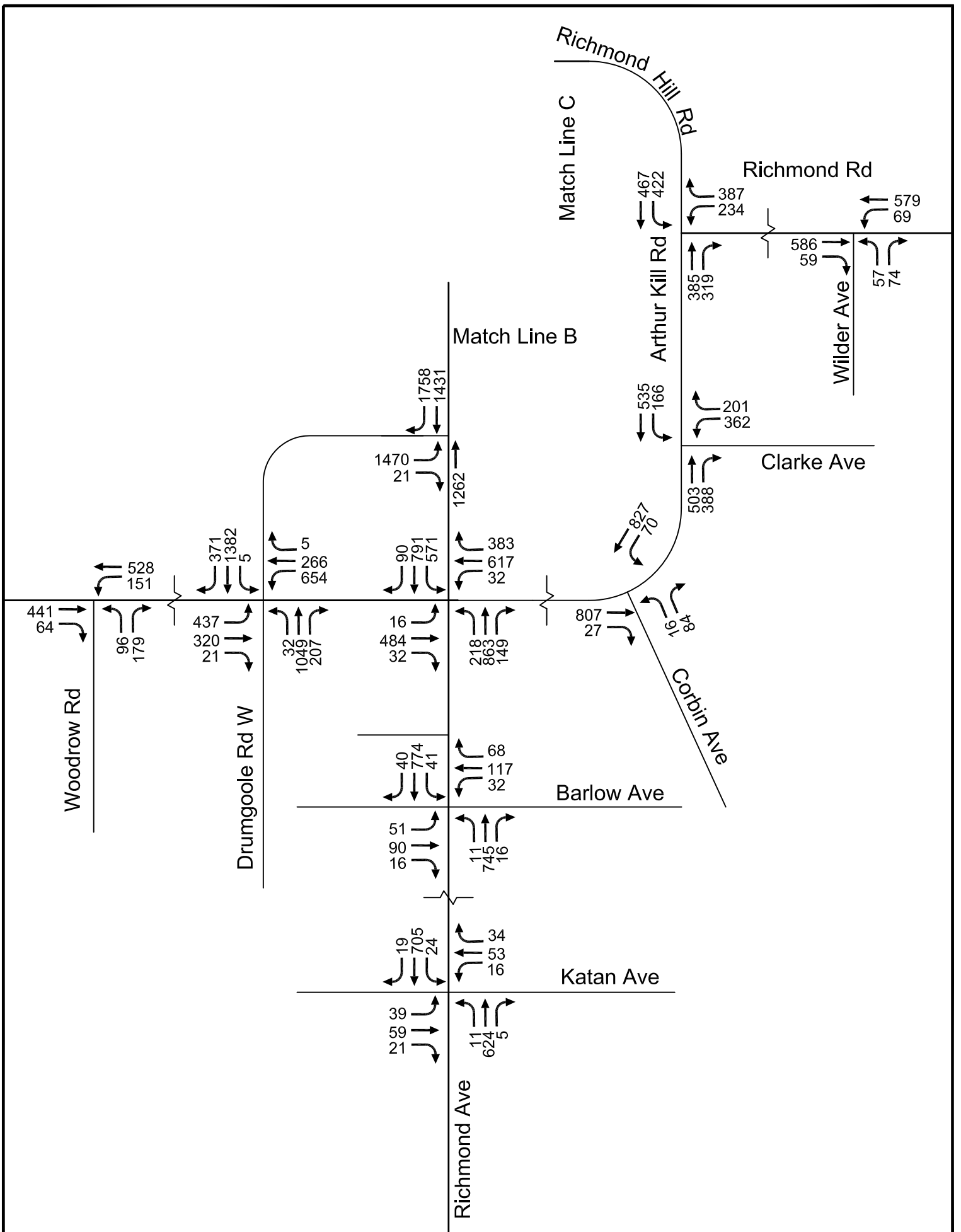


Figure 10-16c
2019 With-Action Saturday PM Traffic Volumes

Staten Island Mall Enlargement

Table 10-16 shows the detailed volume-to-capacity ratios, delays and levels of service by lane group at each analyzed intersection in each peak hour in the With Action condition, and identifies those lane groups that are significantly adversely impacted in one or more peak hours. As shown in **Table 10-16** and summarized in **Table 10-17**, one or more approaches or lane groups at a total of 28 of the 38 analyzed intersections would be significantly adversely impacted in one or more peak hours with the proposed project. As shown in **Table 10-15**, totals of 14, 26, 24, and 24 intersections and 19, 39, 37, 43, and 35 lane groups would be significantly adversely impacted during the weekday midday and PM and Saturday midday and PM peak hours respectively. These impacts are described below:

Five of the eight analysis intersections that provide direct access/egress to/from the Mall would experience one or more significant adverse impacts in one or more peak hours. These intersections include the Northwest Driveway at Richmond Avenue, Richmond Hill Road at the North Driveway, Platinum Avenue at Staten Island Mall Drive, the East Driveway at Marsh Avenue, and the Northeast Driveway at Marsh Avenue. All of the impacted lane groups would serve vehicles exiting the Mall with the additions of left turning vehicles into the Mall at the Northwest Driveway at Richmond Avenue and Platinum Avenue at Staten Island Mall Drive and the northbound approach at Platinum Avenue at Staten Island Mall Drive. In total, seven out of 35 lane groups at these eight intersections would experience one or more significant adverse impacts in one or more peak hours.

Six of the seven analysis intersections within the area bounded by Richmond Hill Road, Forest Hill Road, and Richmond Avenue would experience one or more significant adverse impacts in one or more peak hours. Notably, the eastbound right, southbound left, and southbound through-right lane groups at Richmond Hill Road at Richmond Avenue, the northbound and southbound through-right lane groups and the westbound approach at Richmond Hill Road at Forest Hill Road, and the northbound through lane group and westbound approach at Forest Hill Road at Richmond Avenue would either experience large volume increases as a result of the Enlargement or would already operate at or above capacity in the No-Action condition. In total, 12 out of 42 lane groups at these seven intersections would experience one or more significant adverse impacts in one or more peak hours. The only intersection that would not experience a significant adverse impact would be Platinum Avenue at Forest Hill Road.

Seventeen of the remaining 23 analysis intersections along the Richmond Avenue, Rockland Avenue, Arthur Kill Road, and Richmond Road corridors located some distance away from the mall would experience one or more significant adverse impacts in one or more peak hours. In total, 35 out of 121 lane groups at these 23 intersections would experience one or more significant adverse impacts in one or more peak hours. It should be noted that because of the distance between the Mall and these intersections, the majority of these impacts would be due to lane groups that would already operate at or above capacity in the No-Action condition.

The following is a detailed list of significant adverse impacts:

Richmond Hill Road at Richmond Avenue

The westbound right turn lane group on Richmond Hill Road would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours. The southbound left turn lane group on Richmond Avenue would be significantly adversely impacted in all peak hours. The southbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday peak hours.

Table 10-16

2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|---|---|--------------------------------|--------|------|----------------------------------|--------|-------|--------------------------------|--------|------|----------------------------------|--------|-------|----------------------------|--------|------|------------------------------|--------|-------|----------------------------|--------|------|------------------------------|--------|------|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 18. Merrill Avenue/Morani Street (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.38 | 24.7 | C | 0.40 | 25.0 | C | 0.76 | 35.9 | D | 0.78 | 37.0 | D | 0.50 | 27.4 | C | 0.53 | 28.1 | C | 0.50 | 26.7 | C | 0.52 | 27.3 | C |
| | WB - LTR | 0.43 | 25.4 | C | 0.44 | 25.5 | C | 0.44 | 25.6 | C | 0.45 | 25.7 | C | 0.51 | 26.7 | C | 0.51 | 26.9 | C | 0.37 | 24.1 | C | 0.37 | 24.1 | C |
| | NB - L | 0.34 | 16.0 | B | 0.43 | 19.0 | B | 0.30 | 15.4 | B | 0.39 | 18.8 | B | 0.27 | 14.8 | B | 0.42 | 20.5 | C | 0.14 | 11.8 | B | 0.25 | 14.3 | B |
| | NB - TR | 0.57 | 15.3 | B | 0.61 | 15.9 | B | 0.57 | 15.3 | B | 0.61 | 16.0 | B | 0.70 | 17.5 | B | 0.75 | 18.7 | B | 0.68 | 17.0 | B | 0.74 | 18.4 | B |
| | SB - TR | 0.59 | 15.6 | B | 0.63 | 16.2 | B | 0.67 | 17.1 | B | 0.72 | 18.0 | B | 0.69 | 17.3 | B | 0.75 | 18.6 | B | 0.61 | 15.9 | B | 0.67 | 16.9 | B |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | EB - L | 0.39 | 46.7 | D | 0.39 | 46.7 | D | 0.50 | 51.2 | D | 0.50 | 51.2 | D | 0.66 | 57.9 | E | 0.66 | 57.9 | E | 0.35 | 45.2 | D | 0.35 | 45.2 | D |
| | EB - T | 0.83 | 63.2 | E | 0.83 | 63.2 | E | 0.92 | 71.9 | E | 0.92 | 71.9 | E | 0.68 | 50.5 | D | 0.68 | 50.5 | D | 0.79 | 59.0 | E | 0.79 | 59.0 | E |
| | EB - R | 0.42 | 45.8 | D | 0.42 | 45.8 | D | 0.97 | 88.8 | F | 0.97 | 88.8 | F | 1.33 | 213.0 | F | 1.33 | 213.0 | F | 0.33 | 43.5 | D | 0.33 | 43.5 | D |
| | WB - L | 1.09 | 95.9 | F | 1.18 | 133.1 | F | 1.29 | 177.0 | F | 1.38 | 221.2 | F | 1.15 | 117.4 | E | 1.28 | 174.3 | F | 1.15 | 119.9 | F | 1.28 | 175.4 | F |
| | WB - TR | 0.48 | 21.2 | C | 0.49 | 21.3 | C | 0.78 | 27.4 | C | 0.78 | 27.5 | C | 0.69 | 24.7 | C | 0.69 | 24.7 | C | 0.42 | 20.1 | C | 0.42 | 20.1 | C |
| | NB - L | 0.71 | 60.1 | E | 0.71 | 60.5 | E | 0.75 | 60.1 | E | 0.75 | 60.8 | E | 0.73 | 55.4 | E | 0.73 | 59.2 | E | 0.57 | 52.0 | D | 0.57 | 53.1 | D |
| | NB - T | 0.82 | 41.2 | D | 0.88 | 44.6 | D | 0.80 | 39.7 | D | 0.87 | 42.7 | D | 0.92 | 45.4 | D | 1.01 | 59.5 | E | 0.91 | 44.7 | D | 1.01 | 60.3 | E |
| | SB - L | 0.42 | 46.1 | D | 0.45 | 49.8 | D | 0.28 | 40.0 | D | 0.30 | 43.7 | D | 0.32 | 46.6 | D | 0.32 | 48.7 | D | 0.31 | 47.3 | D | 0.31 | 49.8 | D |
| | SB - TR | 0.79 | 39.8 | D | 0.84 | 41.9 | D | 0.84 | 40.1 | D | 0.91 | 43.0 | D | 0.95 | 46.1 | D | 1.04 | 65.8 | E | 0.76 | 39.0 | D | 0.84 | 42.1 | D |
| | 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.13 | 97.2 | F | 1.17 | 114.7 | F | 1.13 | 96.2 | F | 1.17 | 116.8 | F | 1.13 | 98.4 | F | 1.20 | 127.6 | F | 0.85 | 47.3 | D | 0.92 | 56.0 |
| NB - L | | 0.95 | 75.1 | E | 1.00 | 87.4 | F | 1.05 | 94.4 | F | 1.11 | 113.9 | F | 0.94 | 70.2 | E | 1.01 | 87.5 | F | 1.00 | 80.1 | F | 1.09 | 106.6 | F |
| NB - T | | 0.58 | 8.7 | A | 0.62 | 9.3 | A | 0.56 | 8.4 | A | 0.61 | 9.0 | A | 0.64 | 9.4 | A | 0.70 | 10.3 | B | 0.68 | 9.9 | A | 0.76 | 11.2 | B |
| SB - TR | | 0.80 | 23.6 | C | 0.86 | 25.6 | C | 1.12 | 78.2 | E | 1.20 | 113.8 | F | 1.06 | 54.9 | D | 1.16 | 97.1 | F | 0.92 | 27.2 | C | 1.02 | 43.3 | D |
| 21. Rockland Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.66 | 37.4 | D | 0.71 | 39.4 | D | 0.69 | 38.5 | D | 0.75 | 41.4 | D | 0.62 | 35.8 | D | 0.70 | 38.7 | D | 0.50 | 32.9 | C | 0.57 | 34.7 | C |
| | WB - R | 0.51 | 19.5 | B | 0.51 | 19.5 | B | 0.41 | 14.6 | B | 0.41 | 14.6 | B | 0.52 | 19.5 | B | 0.52 | 19.5 | B | 0.45 | 18.3 | B | 0.45 | 18.3 | B |
| | NB - TR | 0.73 | 23.7 | C | 0.80 | 25.1 | C | 0.84 | 29.0 | C | 0.93 | 32.7 | C | 0.80 | 24.9 | C | 0.89 | 27.6 | C | 0.89 | 27.3 | C | 1.00 | 38.4 | D |
| | SB - L | 0.94 | 72.9 | E | 0.94 | 72.9 | E | 1.00 | 72.1 | E | 1.00 | 72.1 | E | 1.12 | 116.3 | F | 1.12 | 116.3 | F | 1.01 | 88.9 | F | 1.01 | 88.9 | F |
| | SB - T | 0.56 | 9.5 | A | 0.61 | 10.1 | B | 0.75 | 12.2 | B | 0.81 | 13.6 | B | 0.75 | 12.1 | B | 0.83 | 13.9 | B | 0.62 | 10.2 | B | 0.70 | 11.4 | B |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | EB - LT | 1.12 | 119.7 | F | 1.12 | 119.7 | F | 1.12 | 92.8 | F | 1.12 | 92.8 | F | 1.03 | 62.1 | E | 1.03 | 62.1 | E | 0.83 | 43.3 | D | 0.83 | 43.3 | D |
| | WB - LTR | 0.14 | 25.9 | C | 0.14 | 25.9 | C | 0.13 | 25.7 | C | 0.13 | 25.7 | C | 0.14 | 25.8 | C | 0.14 | 25.8 | C | 0.18 | 26.3 | C | 0.18 | 26.3 | C |
| | NB - L | 1.13 | 112.2 | F | 1.19 | 134.9 | F | 1.11 | 102.8 | F | 1.18 | 130.6 | F | 1.13 | 105.4 | F | 1.20 | 134.0 | F | 1.12 | 102.1 | F | 1.21 | 139.2 | F |
| | NB - TR | 0.43 | 9.5 | A | 0.47 | 9.9 | A | 0.45 | 9.5 | A | 0.50 | 10.0 | A | 0.52 | 10.1 | B | 0.57 | 10.7 | B | 0.56 | 10.5 | B | 0.63 | 11.3 | B |
| | SB - TR | 0.78 | 30.2 | C | 0.86 | 32.4 | C | 0.91 | 31.2 | C | 1.00 | 41.1 | D | 1.07 | 64.7 | E | 1.20 | 120.2 | F | 0.91 | 33.2 | C | 1.03 | 54.0 | D |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.84 | 49.3 | D | 0.90 | 56.2 | E | 0.81 | 45.9 | D | 0.88 | 52.4 | D | 1.05 | 88.6 | F | 1.15 | 125.6 | F | 0.86 | 51.4 | D | 0.95 | 64.1 | E |
| | NB - TR | 0.76 | 23.8 | C | 0.83 | 25.6 | C | 0.92 | 34.5 | C | 1.02 | 50.8 | D | 0.93 | 30.5 | C | 1.03 | 48.1 | D | 0.96 | 34.4 | C | 1.08 | 67.6 | E |
| | SB - L | 1.07 | 110.9 | F | 1.07 | 110.9 | F | 0.90 | 58.2 | E | 0.90 | 58.2 | E | 1.12 | 122.9 | F | 1.12 | 122.9 | F | 1.12 | 124.6 | F | 1.12 | 124.6 | F |
| | SB - T | 0.44 | 8.2 | A | 0.48 | 8.6 | A | 0.57 | 9.4 | A | 0.62 | 10.1 | B | 0.59 | 9.6 | A | 0.65 | 10.4 | B | 0.49 | 8.6 | A | 0.56 | 9.3 | A |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L | 0.73 | 24.7 | C | 0.83 | 28.7 | C | 0.75 | 25.8 | C | 0.87 | 32.2 | C | 0.96 | 35.2 | D | 1.12 | 86.1 | F | 0.81 | 26.6 | C | 0.96 | 40.1 | D |
| | EB - LR | 0.78 | 26.6 | C | 0.88 | 32.6 | C | 0.81 | 28.4 | C | 0.93 | 39.0 | D | 1.02 | 48.5 | D | 1.19 | 114.2 | F | 0.89 | 31.9 | C | 1.05 | 63.1 | E |
| | NB - T | 0.76 | 24.9 | C | 0.82 | 26.9 | C | 0.82 | 25.3 | C | 0.89 | 28.7 | C | 0.94 | 33.1 | C | 1.03 | 51.7 | D | 0.78 | 25.0 | C | 0.87 | 29.0 | C |
| | SB - T | 0.84 | 26.0 | C | 0.90 | 28.8 | C | 0.98 | 32.8 | C | 1.04 | 48.5 | D | 0.97 | 32.9 | C | 1.05 | 54.1 | D | 0.92 | 29.4 | C | 1.02 | 45.6 | D |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | EB - L | 0.16 | 22.8 | C | 0.16 | 22.8 | C | 0.32 | 25.9 | C | 0.32 | 25.9 | C | 0.25 | 26.1 | C | 0.25 | 26.1 | C | 0.22 | 25.0 | C | 0.22 | 25.0 | C |
| | EB - TR | 0.43 | 24.1 | C | 0.43 | 24.1 | C | 0.48 | 23.2 | C | 0.48 | 23.2 | C | 0.41 | 23.8 | C | 0.41 | 23.8 | C | 0.49 | 24.6 | C | 0.49 | 24.6 | C |
| | WB - L | 0.19 | 22.8 | C | 0.19 | 22.8 | C | 0.12 | 20.2 | C | 0.12 | 20.2 | C | 0.11 | 21.2 | C | 0.11 | 21.2 | C | 0.17 | 22.3 | C | 0.17 | 22.3 | C |
| | WB - T | 0.81 | 36.1 | D | 0.81 | 36.1 | D | 1.06 | 71.1 | E | 1.06 | 71.1 | E | 1.01 | 59.8 | E | 1.01 | 59.8 | E | 1.01 | 61.7 | E | 1.01 | 61.7 | E |
| | WB - R | 0.45 | 13.3 | B | 0.48 | 13.6 | B | 0.43 | 11.5 | B | 0.46 | 11.9 | B | 0.56 | 14.4 | B | 0.59 | 15.1 | B | 0.46 | 13.0 | B | 0.50 | 13.6 | B |
| | NB - L | 0.34 | 34.2 | C | 0.34 | 34.2 | C | 0.54 | 35.8 | D | 0.54 | 35.8 | D | 0.35 | 33.7 | C | 0.35 | 33.7 | C | 0.45 | 35.2 | D | 0.45 | 35.2 | D |
| | NB - TR | 0.85 | 34.4 | C | 0.92 | 38.9 | D | 1.04 | 61.5 | E | 1.12 | 92.4 | F | 1.09 | 77.1 | E | 1.19 | 118.8 | F | 0.94 | 39.9 | D | 1.04 | 62.1 | E |
| | SB - L | 1.03 | 75.2 | E | 1.08 | 89.0 | F | 1.08 | 83.4 | F | 1.12 | 100.6 | F | 1.11 | 95.9 | F | 1.16 | 115.3 | F | 0.99 | 60.1 | E | 1.05 | 77.6 | E |
| | SB - TR | 0.65 | 27.8 | C | 0.71 | 28.9 | C | 0.90 | 34.5 | C | 0.96 | 40.2 | D | 0.67 | 27.4 | C | 0.74 | 28.7 | C | 0.76 | 29.5 | C | 0.86 | 32.4 | C |

Table 10-16
2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|---|------------|--------------------------------|-------------|----------|----------------------------------|-------------|----------|--------------------------------|-------------|----------|----------------------------------|-------------|----------|----------------------------|-------------|----------|------------------------------|-------------|----------|----------------------------|-------------|----------|------------------------------|-------------|----------|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | | RATIO (sec.) | | |
| 26. Barlow Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.21 | 21.7 | C | 0.22 | 21.9 | C | 0.42 | 28.8 | C | 0.46 | 29.7 | C | 0.31 | 23.2 | C | 0.34 | 23.6 | C | 0.30 | 23.1 | C | 0.33 | 23.5 | C |
| | WB - LTR | 0.36 | 23.9 | C | 0.37 | 24.1 | C | 0.67 | 36.0 | D | 0.68 | 36.8 | D | 0.48 | 26.1 | C | 0.50 | 26.4 | C | 0.46 | 25.6 | C | 0.48 | 26.1 | C |
| | NB - LTR | 0.50 | 14.5 | B | 0.54 | 15.0 | B | 0.53 | 12.2 | B | 0.57 | 12.8 | B | 0.56 | 15.2 | B | 0.62 | 16.2 | B | 0.49 | 14.2 | B | 0.55 | 15.1 | B |
| | SB - LTR | 0.52 | 14.6 | B | 0.57 | 15.4 | B | 0.57 | 12.6 | B | 0.63 | 13.6 | B | 0.53 | 14.9 | B | 0.61 | 16.2 | B | 0.51 | 14.6 | B | 0.60 | 16.0 | B |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.26 | 22.5 | C | 0.27 | 22.7 | C | 0.37 | 28.0 | C | 0.40 | 28.4 | C | 0.24 | 22.2 | C | 0.26 | 22.5 | C | 0.25 | 22.3 | C | 0.28 | 22.7 | C |
| | WB - LTR | 0.17 | 21.3 | C | 0.19 | 21.5 | C | 0.35 | 27.6 | C | 0.37 | 27.9 | C | 0.21 | 21.8 | C | 0.23 | 22.0 | C | 0.23 | 22.0 | C | 0.24 | 22.2 | C |
| | NB - LTR | 0.42 | 13.4 | B | 0.45 | 13.7 | B | 0.47 | 11.3 | B | 0.50 | 11.8 | B | 0.45 | 13.8 | B | 0.50 | 14.4 | B | 0.39 | 13.1 | B | 0.44 | 13.6 | B |
| | SB - LTR | 0.88 | 26.4 | C | 0.96 | 35.9 | D | 0.94 | 26.9 | C | 1.02 | 45.2 | D | 0.92 | 29.4 | C | 1.05 | 57.3 | E | 0.95 | 32.1 | C | 1.10 | 73.7 | E |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.81 | 32.8 | C | 0.91 | 40.5 | D | 0.97 | 43.0 | D | 1.11 | 85.6 | F | 0.93 | 38.4 | D | 1.11 | 87.2 | F | 0.96 | 41.5 | D | 1.13 | 96.2 | F |
| | NB - T | 0.70 | 30.0 | C | 0.78 | 33.3 | C | 0.70 | 28.3 | C | 0.80 | 31.3 | C | 0.64 | 28.1 | C | 0.77 | 32.2 | C | 0.57 | 26.6 | C | 0.70 | 29.8 | C |
| | NB - R | 0.28 | 3.9 | A | 0.28 | 3.9 | A | 0.32 | 3.9 | A | 0.32 | 3.9 | A | 0.29 | 3.9 | A | 0.29 | 3.9 | A | 0.33 | 4.1 | A | 0.33 | 4.1 | A |
| | SB - L | 0.67 | 17.9 | B | 0.84 | 28.0 | C | 0.65 | 17.6 | B | 0.86 | 31.4 | C | 0.69 | 17.7 | B | 0.95 | 44.4 | D | 0.63 | 15.7 | B | 0.88 | 30.7 | C |
| | SB - T | 0.46 | 14.5 | B | 0.52 | 15.5 | B | 0.49 | 15.0 | B | 0.56 | 16.3 | B | 0.60 | 16.9 | B | 0.69 | 19.1 | B | 0.52 | 15.5 | B | 0.63 | 17.6 | B |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | 0.64 | 25.7 | C | 0.66 | 26.2 | C | 1.01 | 46.2 | D | 1.04 | 54.3 | D | 0.79 | 29.3 | C | 0.82 | 30.8 | C | 0.82 | 30.2 | C | 0.85 | 31.9 | C |
| | NB - T | 0.80 | 35.6 | D | 0.85 | 39.7 | D | 0.89 | 41.9 | D | 0.96 | 51.5 | D | 0.77 | 33.8 | C | 0.86 | 39.8 | D | 0.76 | 33.3 | C | 0.84 | 38.4 | D |
| | NB - R | 0.35 | 3.5 | A | 0.35 | 3.5 | A | 0.41 | 3.8 | A | 0.41 | 3.8 | A | 0.40 | 3.8 | A | 0.40 | 3.8 | A | 0.37 | 3.6 | A | 0.37 | 3.6 | A |
| | SB - L | 0.51 | 17.0 | B | 0.58 | 19.5 | B | 0.57 | 19.5 | B | 0.66 | 25.6 | C | 0.60 | 18.1 | B | 0.72 | 23.5 | C | 0.41 | 15.0 | B | 0.52 | 17.9 | B |
| | SB - T | 0.60 | 18.7 | B | 0.65 | 19.8 | B | 0.72 | 21.3 | C | 0.76 | 23.0 | C | 0.66 | 19.6 | B | 0.72 | 21.2 | C | 0.67 | 20.0 | B | 0.74 | 22.4 | C |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | WB - LT | 0.09 | 10.9 | B | 0.11 | 11.2 | B | 0.09 | 11.3 | B | 0.12 | 11.7 | B | 0.11 | 10.8 | B | 0.15 | 11.3 | B | 0.08 | 10.4 | B | 0.12 | 10.8 | B |
| | NB - LR | 0.48 | 50.5 | F | 0.59 | 60.1 | F | 0.63 | 68.6 | F | 0.77 | 88.7 | F | 0.44 | 39.4 | E | 0.58 | 49.2 | E | 0.49 | 40.9 | E | 0.64 | 55.5 | F |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L | 0.62 | 20.1 | C | 0.72 | 22.9 | C | 0.70 | 22.2 | C | 0.84 | 33.5 | C | 0.82 | 25.8 | C | 0.98 | 53.8 | D | 0.76 | 23.1 | C | 0.93 | 43.5 | D |
| | EB - TR | 0.83 | 46.1 | D | 0.83 | 46.1 | D | 0.97 | 58.9 | E | 0.97 | 58.9 | E | 0.75 | 39.4 | D | 0.75 | 39.4 | D | 0.85 | 44.9 | D | 0.85 | 44.9 | D |
| | WB - L | 0.54 | 18.8 | B | 0.54 | 18.8 | B | 0.71 | 22.0 | C | 0.71 | 22.0 | C | 0.64 | 19.4 | B | 0.64 | 19.4 | B | 0.74 | 21.5 | C | 0.74 | 21.5 | C |
| | WB - TR | 0.30 | 29.9 | C | 0.30 | 29.9 | C | 0.46 | 31.1 | C | 0.46 | 31.1 | C | 0.37 | 30.4 | C | 0.37 | 30.4 | C | 0.39 | 30.6 | C | 0.39 | 30.6 | C |
| | NB - L | 0.16 | 20.3 | C | 0.16 | 20.3 | C | 0.41 | 31.5 | C | 0.41 | 31.5 | C | 0.43 | 34.3 | C | 0.43 | 34.3 | C | 0.49 | 38.9 | D | 0.49 | 38.9 | D |
| | NB - TR | 0.74 | 25.4 | C | 0.81 | 27.9 | C | 0.73 | 23.9 | C | 0.81 | 26.8 | C | 0.86 | 30.9 | C | 0.97 | 43.5 | D | 0.83 | 29.0 | C | 0.94 | 38.1 | D |
| | SB - LTR | 0.96 | 33.3 | C | 1.08 | 66.3 | E | 1.13 | 83.6 | F | 1.24 | 135.6 | F | 1.14 | 90.9 | F | 1.38 | 198.5 | F | 1.14 | 91.1 | F | 1.37 | 193.2 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | 0.74 | 21.8 | C | 0.77 | 23.6 | C | 0.92 | 35.8 | D | 0.96 | 42.6 | D | 0.73 | 21.4 | C | 0.79 | 24.4 | C | 0.73 | 21.2 | C | 0.79 | 24.3 | C |
| | WB - LT | 0.66 | 18.2 | B | 0.83 | 26.4 | C | 1.20 | 110.8 | F | 1.42 | 209.1 | F | 0.70 | 18.9 | B | 0.94 | 36.6 | D | 1.00 | 39.1 | D | 1.34 | 175.5 | F |
| | NB - L | 0.10 | 20.3 | C | 0.10 | 20.3 | C | 0.17 | 21.2 | C | 0.17 | 21.2 | C | 0.14 | 20.8 | C | 0.14 | 20.8 | C | 0.20 | 21.5 | C | 0.20 | 21.5 | C |
| | NB - R | 0.28 | 22.9 | C | 0.34 | 24.1 | C | 0.36 | 24.3 | C | 0.44 | 26.0 | C | 0.43 | 25.6 | C | 0.53 | 28.1 | C | 0.35 | 24.0 | C | 0.45 | 26.0 | C |
| 33. Victory Boulevard (E-W) @ South Gannon Avenue (SB) (Unsignalized) | WB - L | 0.14 | 9.7 | A | 0.15 | 9.8 | A | 0.17 | 9.5 | A | 0.17 | 9.6 | A | 0.12 | 8.9 | A | 0.12 | 9.0 | A | 0.12 | 9.0 | A | 0.12 | 9.1 | A |
| | SB - L | 0.21 | 12.3 | B | 0.22 | 12.6 | B | 0.26 | 12.6 | B | 0.27 | 13.1 | B | 0.20 | 12.3 | B | 0.21 | 12.8 | B | 0.23 | 13.4 | B | 0.24 | 14.2 | B |
| 34. Victory Boulevard (E-W) @ North Gannon Avenue (NB) | EB - L | <u>0.20</u> | <u>26.8</u> | <u>C</u> | <u>0.21</u> | <u>27.0</u> | <u>C</u> | <u>0.32</u> | <u>31.6</u> | <u>C</u> | <u>0.33</u> | <u>32.3</u> | <u>C</u> | <u>0.23</u> | <u>27.9</u> | <u>C</u> | <u>0.24</u> | <u>28.3</u> | <u>C</u> | <u>0.18</u> | <u>26.2</u> | <u>C</u> | <u>0.18</u> | <u>26.4</u> | <u>C</u> |
| | EB - T | <u>0.49</u> | <u>29.3</u> | <u>C</u> | <u>0.50</u> | <u>29.5</u> | <u>C</u> | <u>0.40</u> | <u>27.8</u> | <u>C</u> | <u>0.41</u> | <u>28.0</u> | <u>C</u> | <u>0.37</u> | <u>27.3</u> | <u>C</u> | <u>0.38</u> | <u>27.5</u> | <u>C</u> | <u>0.38</u> | <u>27.5</u> | <u>C</u> | <u>0.40</u> | <u>27.8</u> | <u>C</u> |
| | WB - TR | <u>0.46</u> | <u>28.8</u> | <u>C</u> | <u>0.47</u> | <u>29.0</u> | <u>C</u> | <u>0.60</u> | <u>31.3</u> | <u>C</u> | <u>0.61</u> | <u>31.6</u> | <u>C</u> | <u>0.52</u> | <u>29.8</u> | <u>C</u> | <u>0.54</u> | <u>30.1</u> | <u>C</u> | <u>0.43</u> | <u>28.3</u> | <u>C</u> | <u>0.45</u> | <u>28.6</u> | <u>C</u> |
| | NB - L | <u>0.46</u> | <u>18.1</u> | <u>B</u> | <u>0.49</u> | <u>18.7</u> | <u>B</u> | <u>0.61</u> | <u>20.8</u> | <u>C</u> | <u>0.65</u> | <u>21.6</u> | <u>C</u> | <u>0.61</u> | <u>20.7</u> | <u>C</u> | <u>0.66</u> | <u>21.9</u> | <u>C</u> | <u>0.53</u> | <u>19.2</u> | <u>B</u> | <u>0.58</u> | <u>20.2</u> | <u>C</u> |
| | NB - TR | <u>0.11</u> | <u>14.1</u> | <u>B</u> | <u>0.11</u> | <u>14.1</u> | <u>B</u> | <u>0.16</u> | <u>14.6</u> | <u>B</u> | <u>0.16</u> | <u>14.6</u> | <u>B</u> | <u>0.15</u> | <u>14.5</u> | <u>B</u> | <u>0.15</u> | <u>14.5</u> | <u>B</u> | <u>0.13</u> | <u>14.3</u> | <u>B</u> | <u>0.13</u> | <u>14.3</u> | <u>B</u> |

Table 10-16
2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|--|------------|--|--------------|----------|----------------------------------|--------------|----------|--------------------------------|--------------|----------|----------------------------------|--------------|----------|----------------------------|--------------|----------|------------------------------|--------------|----------|----------------------------|--------------|----------|------------------------------|--------------|----------|
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| | | 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 85.6 | F * | 1.05 | 77.1 | E | 1.05 | 77.2 | E | 0.83 | 43.9 | D | 0.86 | 47.6 | D | 0.89 | 48.9 | D | 0.91 |
| | EB - TR | 0.47 | 25.5 | C | 0.48 | 25.6 | C | 0.54 | 30.0 | C | 0.55 | 30.1 | C | 0.41 | 24.8 | C | 0.42 | 25.0 | C | 0.41 | 24.8 | C | 0.42 | 24.9 | C |
| | WB - L | 0.88 | 41.8 | D | 0.97 | 56.9 | E * | 0.81 | 24.0 | C | 0.91 | 39.7 | D | 0.96 | 51.5 | D | 1.08 | 86.7 | F | 0.84 | 38.4 | D | 0.96 | 57.2 | E * |
| | WB - TR | 0.78 | 34.0 | C | 0.79 | 34.4 | C | 0.98 | 55.2 | E | 1.00 | 59.9 | E * | 0.79 | 33.4 | C | 0.81 | 34.4 | C | 0.65 | 30.0 | C | 0.67 | 30.6 | C |
| | NB - L | 0.11 | 16.4 | B | 0.11 | 16.5 | B | 0.20 | 17.5 | B | 0.21 | 17.6 | B | 0.18 | 17.2 | B | 0.21 | 17.5 | B | 0.07 | 16.1 | B | 0.08 | 16.2 | B |
| | NB - TR | 1.16 | 101.6 | F | 1.23 | 130.2 | F * | 1.15 | 95.0 | F | 1.22 | 127.7 | F * | 1.18 | 108.5 | F | 1.27 | 149.2 | F * | 1.18 | 107.9 | F | 1.28 | 154.4 | F * |
| | SB - L | 0.82 | 73.5 | E | 0.82 | 73.5 | E | 0.95 | 83.2 | F | 0.95 | 83.2 | F | 0.77 | 61.5 | E | 0.77 | 61.5 | E | 0.68 | 52.4 | D | 0.68 | 52.4 | D |
| | SB - T | 0.74 | 27.9 | C | 0.76 | 28.7 | C | 0.95 | 39.4 | D | 0.97 | 43.5 | D | 0.85 | 32.6 | C | 0.88 | 35.2 | D | 0.71 | 26.9 | C | 0.74 | 27.9 | C |
| | SB - R | 0.39 | 20.2 | C | 0.39 | 20.2 | C | 0.74 | 26.5 | C | 0.74 | 26.5 | C | 0.38 | 19.8 | B | 0.38 | 19.8 | B | 0.33 | 19.2 | B | 0.33 | 19.2 | B |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L | 0.78 | 26.2 | C | 0.83 | 30.0 | C | 0.78 | 24.2 | C | 0.84 | 28.5 | C | 0.87 | 36.0 | D | 0.96 | 51.3 | D * | 0.80 | 26.8 | C | 0.89 | 35.5 | D |
| | EB - TR | 0.48 | 16.1 | B | 0.50 | 16.3 | B | 0.45 | 15.4 | B | 0.46 | 15.6 | B | 0.40 | 15.0 | B | 0.42 | 15.2 | B | 0.42 | 15.2 | B | 0.44 | 15.5 | B |
| | WB - LTR | 0.89 | 36.0 | D | 0.92 | 38.1 | D | 0.82 | 32.6 | C | 0.85 | 34.3 | C | 0.95 | 39.3 | D | 0.98 | 45.3 | D * | 0.79 | 31.6 | C | 0.83 | 33.4 | C |
| | NB - LTR | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B |
| | SB - LTR | 0.78 | 30.9 | C | 0.81 | 32.4 | C | 1.05 | 57.7 | E | 1.08 | 70.9 | E * | 0.77 | 29.9 | C | 0.81 | 32.0 | C | 0.68 | 27.1 | C | 0.72 | 28.5 | C |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | EB - TR | 0.71 | 18.9 | B | 0.78 | 21.6 | C | 0.69 | 19.1 | B | 0.77 | 22.0 | C | 0.89 | 24.8 | C | 0.99 | 39.1 | D | 0.72 | 19.2 | B | 0.85 | 24.8 | C |
| | WB - LT | 0.54 | 15.2 | B | 0.60 | 16.6 | B | 1.10 | 72.8 | E | 1.22 | 123.0 | F * | 0.84 | 23.3 | C | 0.97 | 38.6 | D | 0.74 | 19.4 | B | 0.87 | 26.3 | C |
| | NB - LR | 0.30 | 23.1 | C | 0.33 | 23.5 | C | 0.39 | 35.3 | D | 0.43 | 36.2 | D | 0.25 | 22.4 | C | 0.29 | 23.0 | C | 0.28 | 22.8 | C | 0.33 | 23.5 | C |
| 38. Forest Avenue (E-W) @ Richmond Avenue-Morningstar Road (N-S) | EB - L | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.41</u> | <u>27.7</u> | <u>C</u> | <u>0.41</u> | <u>27.7</u> | <u>C</u> | <u>0.30</u> | <u>25.8</u> | <u>C</u> | <u>0.30</u> | <u>25.8</u> | <u>C</u> |
| | EB - TR | <u>0.97</u> | <u>46.4</u> | <u>D</u> | <u>0.97</u> | <u>46.4</u> | <u>D</u> | <u>0.96</u> | <u>44.8</u> | <u>D</u> | <u>0.96</u> | <u>44.8</u> | <u>D</u> | <u>1.06</u> | <u>70.8</u> | <u>E</u> | <u>1.06</u> | <u>70.8</u> | <u>E</u> | <u>1.00</u> | <u>51.1</u> | <u>D</u> | <u>1.00</u> | <u>51.1</u> | <u>D</u> |
| | WB - L | 0.91 | 56.9 | E | 0.91 | 56.9 | E | 1.20 | 138.7 | F | 1.20 | 138.7 | F | 1.00 | 75.3 | E | 1.00 | 75.3 | E | 0.98 | 70.4 | E | 0.98 | 70.4 | E |
| | WB - TR | 0.45 | 16.5 | B | 0.45 | 16.5 | B | 0.51 | 17.2 | B | 0.51 | 17.2 | B | 0.49 | 16.9 | B | 0.49 | 16.9 | B | 0.46 | 16.5 | B | 0.46 | 16.5 | B |
| | NB - L | <u>0.55</u> | <u>21.6</u> | <u>C</u> | <u>0.57</u> | <u>22.4</u> | <u>C</u> | <u>0.41</u> | <u>19.9</u> | <u>B</u> | <u>0.43</u> | <u>20.5</u> | <u>C</u> | <u>0.53</u> | <u>21.3</u> | <u>C</u> | <u>0.56</u> | <u>22.5</u> | <u>C</u> | <u>0.57</u> | <u>22.6</u> | <u>C</u> | <u>0.61</u> | <u>24.0</u> | <u>C</u> |
| | NB - T | 0.40 | 20.8 | C | 0.44 | 21.5 | C | 0.44 | 21.6 | C | 0.48 | 22.3 | C | 0.46 | 21.7 | C | 0.52 | 22.8 | C | 0.46 | 21.6 | C | 0.52 | 22.8 | C |
| | NB - R | 0.32 | 10.7 | B | 0.32 | 10.7 | B | 0.27 | 10.2 | B | 0.27 | 10.2 | B | 0.29 | 10.4 | B | 0.29 | 10.4 | B | 0.29 | 10.3 | B | 0.29 | 10.3 | B |
| | SB - LTR | 0.80 | 43.4 | D | 0.86 | 49.0 | D * | 1.00 | 64.3 | E | 1.07 | 83.8 | F * | 0.86 | 47.0 | D | 0.96 | 62.4 | E * | 0.98 | 58.2 | E | 1.09 | 89.5 | F * |

Notes:
 EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound
 L-Left, T-Through, R-Right, Dfl-Analysis considers a Defacto Left Lane on this approach
 V/C Ratio - Volume to Capacity Ratio, sec. - Seconds
 LOS - Level of Service
 * - Denotes a significant adverse impact
 Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

DEIS VERSION - Table has been updated

Table 10-16
2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|--|------------|--------------------------------|--------|------|----------------------------------|--------|------|--------------------------------|--------|------|----------------------------------|--------|------|----------------------------|--------|------|------------------------------|--------|------|----------------------------|--------|------|------------------------------|--------|-----|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 9. Platinum Avenue (E-W) @ SI Mall Southwest Driveway (N-S) | EB - DefL | 0.24 | 1.1 | A | 0.31 | 1.8 | A | 0.21 | 0.8 | A | 0.31 | 1.4 | A | 0.29 | 1.7 | A | 0.41 | 3.7 | A | 0.18 | 1.3 | A | 0.31 | 2.8 | A |
| | EB - T | 0.26 | 0.3 | A | 0.30 | 0.4 | A | 0.23 | 0.3 | A | 0.28 | 0.3 | A | 0.29 | 0.4 | A | 0.35 | 0.5 | A | 0.19 | 0.2 | A | 0.25 | 0.3 | A |
| | WB - TR | 0.33 | 11.8 | B | 0.38 | 12.2 | B | 0.28 | 11.4 | B | 0.33 | 11.8 | B | 0.36 | 12.0 | B | 0.42 | 12.6 | B | 0.37 | 12.1 | B | 0.44 | 12.8 | B |
| | SB - R | 0.41 | 24.6 | C | 0.51 | 26.5 | C | 0.38 | 24.0 | C | 0.49 | 26.1 | C | 0.47 | 25.6 | C | 0.60 | 28.8 | C | 0.47 | 25.8 | C | 0.63 | 29.8 | C |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L | 0.62 | 21.5 | C | 0.77 | 29.2 | C | 0.50 | 18.4 | B | 0.70 | 25.3 | C | 0.72 | 25.3 | C | 0.98 | 56.0 | E * | 0.52 | 18.9 | B | 0.81 | 32.8 | C |
| | EB - TR | 0.11 | 12.0 | B | 0.11 | 12.0 | B | 0.11 | 12.0 | B | 0.11 | 12.0 | B | 0.10 | 11.9 | B | 0.10 | 11.9 | B | 0.08 | 11.8 | B | 0.08 | 11.8 | B |
| | WB - L | 0.35 | 15.6 | B | 0.35 | 15.6 | B | 0.33 | 15.2 | B | 0.33 | 15.2 | B | 0.48 | 17.6 | B | 0.48 | 17.6 | B | 0.36 | 15.4 | B | 0.36 | 15.4 | B |
| | WB - TR | 0.12 | 12.1 | B | 0.15 | 12.3 | B | 0.14 | 12.3 | B | 0.18 | 12.6 | B | 0.12 | 12.1 | B | 0.16 | 12.4 | B | 0.14 | 12.2 | B | 0.18 | 12.6 | B |
| | NB - LTR | 1.07 | 93.4 | F | 1.37 | 214.1 | F * | 0.92 | 52.2 | D | 1.21 | 143.9 | F * | 1.21 | 141.2 | F | 1.63 | 322.2 | F * | 1.21 | 142.0 | F | 1.71 | 360.6 | F * |
| SB - LTR | 0.55 | 23.3 | C | 0.69 | 26.5 | C | 0.42 | 21.2 | C | 0.57 | 23.7 | C | 0.75 | 28.7 | C | 0.94 | 42.7 | D | 0.78 | 30.1 | C | 1.00 | 56.6 | E * | |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | EB - LT | 0.47 | 24.9 | C | 0.50 | 25.5 | C | 0.43 | 24.5 | C | 0.46 | 25.1 | C | 0.58 | 26.7 | C | 0.63 | 27.7 | C | 0.60 | 27.0 | C | 0.65 | 28.2 | C |
| | WB - T | 0.33 | 23.0 | C | 0.38 | 23.7 | C | 0.24 | 21.8 | C | 0.30 | 22.6 | C | 0.39 | 23.9 | C | 0.48 | 25.3 | C | 0.32 | 22.9 | C | 0.39 | 23.9 | C |
| | SB - L | 0.54 | 44.3 | D | 0.76 | 57.7 | E * | 0.70 | 52.2 | D | 0.96 | 86.3 | F * | 0.63 | 47.5 | D | 0.93 | 78.4 | E * | 0.65 | 48.1 | D | 0.98 | 89.2 | F * |
| | SB - R | 0.16 | 10.7 | B | 0.16 | 10.7 | B | 0.21 | 11.2 | B | 0.21 | 11.2 | B | 0.23 | 11.3 | B | 0.23 | 11.3 | B | 0.20 | 11.0 | B | 0.20 | 11.0 | B |
| 12. Platinum Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 0.33 | 23.2 | C | 0.35 | 23.6 | C | 0.37 | 27.5 | C | 0.40 | 28.1 | C | 0.42 | 24.5 | C | 0.45 | 25.2 | C | 0.37 | 23.8 | C | 0.41 | 24.4 | C |
| | NB - L | 0.47 | 16.9 | B | 0.61 | 21.5 | C | 0.46 | 14.0 | B | 0.64 | 19.8 | B | 0.51 | 17.7 | B | 0.75 | 28.8 | C | 0.52 | 18.0 | B | 0.75 | 28.4 | C |
| | NB - T | 0.47 | 14.1 | B | 0.47 | 14.1 | B | 0.52 | 12.0 | B | 0.52 | 12.0 | B | 0.58 | 15.7 | B | 0.58 | 15.7 | B | 0.59 | 16.0 | B | 0.59 | 16.0 | B |
| | SB - T | 0.50 | 14.4 | B | 0.50 | 14.4 | B | 0.54 | 12.3 | B | 0.54 | 12.3 | B | 0.52 | 14.7 | B | 0.52 | 14.7 | B | 0.50 | 14.5 | B | 0.50 | 14.5 | B |
| | SB - R | 0.15 | 10.5 | B | 0.16 | 10.6 | B | 0.13 | 8.1 | A | 0.15 | 8.2 | A | 0.22 | 11.2 | B | 0.24 | 11.4 | B | 0.20 | 11.0 | B | 0.22 | 11.2 | B |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.21 | 14.8 | B | 0.32 | 18.6 | C | 0.31 | 20.1 | C | 0.52 | 31.8 | D * | 0.46 | 24.3 | C | 0.78 | 55.8 | F * | 0.53 | 30.1 | D | 0.97 | 101.3 | F * |
| | EB - R | 0.09 | 9.8 | A | 0.12 | 10.2 | B | 0.11 | 10.3 | B | 0.15 | 10.9 | B | 0.13 | 10.0 | A | 0.18 | 10.6 | B | 0.12 | 10.2 | B | 0.19 | 11.0 | B |
| | NB - L | 0.05 | 7.9 | A | 0.07 | 8.1 | A | 0.07 | 8.2 | A | 0.10 | 8.5 | A | 0.09 | 8.1 | A | 0.13 | 8.4 | A | 0.10 | 8.2 | A | 0.13 | 8.6 | A |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | 0.65 | 30.4 | C | 0.80 | 37.3 | D | 0.58 | 28.3 | C | 0.74 | 33.9 | C | 0.64 | 30.0 | C | 0.85 | 41.1 | D | 0.65 | 30.3 | C | 0.89 | 45.9 | D * |
| | EB - R | 0.04 | 19.8 | B | 0.05 | 19.9 | B | 0.05 | 19.9 | B | 0.07 | 20.1 | C | 0.04 | 19.8 | B | 0.06 | 20.0 | B | 0.03 | 19.6 | B | 0.05 | 19.9 | B |
| | NB - L | 0.02 | 9.5 | A | 0.02 | 9.6 | A | 0.02 | 9.5 | A | 0.02 | 9.6 | A | 0.04 | 9.7 | A | 0.05 | 9.8 | A | 0.02 | 9.5 | A | 0.02 | 9.6 | A |
| | NB - T | 0.29 | 11.8 | B | 0.34 | 12.4 | B | 0.42 | 13.4 | B | 0.49 | 14.4 | B | 0.51 | 14.6 | B | 0.60 | 16.4 | B | 0.53 | 15.0 | B | 0.63 | 17.0 | B |
| | SB - TR | 0.64 | 17.2 | B | 0.81 | 22.9 | C | 0.70 | 18.7 | B | 0.85 | 25.6 | C | 0.56 | 15.6 | B | 0.74 | 20.1 | C | 0.61 | 16.5 | B | 0.79 | 22.0 | C |
| 15. Staten Island Mall Drive (E-W) @ Marsh Avenue (N-S) | EB - L | 0.21 | 25.8 | C | 0.26 | 26.5 | C | 0.26 | 26.4 | C | 0.32 | 27.4 | C | 0.21 | 21.6 | C | 0.28 | 22.5 | C | 0.26 | 22.2 | C | 0.34 | 23.2 | C |
| | EB - R | 0.13 | 24.9 | C | 0.18 | 25.6 | C | 0.09 | 24.5 | C | 0.15 | 25.2 | C | 0.21 | 21.7 | C | 0.27 | 22.5 | C | 0.16 | 21.0 | C | 0.22 | 21.9 | C |
| | NB - L | 0.23 | 8.8 | A | 0.26 | 9.2 | A | 0.11 | 7.7 | A | 0.15 | 8.2 | A | 0.17 | 11.0 | B | 0.24 | 12.0 | B | 0.18 | 11.2 | B | 0.26 | 12.3 | B |
| | NB - T | 0.15 | 7.8 | A | 0.17 | 8.0 | A | 0.24 | 8.5 | A | 0.26 | 8.7 | A | 0.29 | 11.9 | B | 0.33 | 12.3 | B | 0.29 | 11.8 | B | 0.32 | 12.2 | B |
| | SB - TR | 0.19 | 8.1 | A | 0.22 | 8.3 | A | 0.31 | 9.0 | A | 0.36 | 9.6 | A | 0.24 | 11.2 | B | 0.30 | 11.9 | B | 0.26 | 11.5 | B | 0.33 | 12.2 | B |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.31 | 37.8 | D | 0.31 | 37.8 | D | 0.41 | 39.8 | D | 0.41 | 39.8 | D | 0.36 | 38.7 | D | 0.36 | 38.7 | D | 0.44 | 40.6 | D | 0.44 | 40.6 | D |
| | WB - LTR | 0.54 | 46.2 | D | 0.54 | 46.2 | D | 0.65 | 51.6 | D | 0.65 | 51.6 | D | 0.58 | 47.6 | D | 0.58 | 47.6 | D | 0.56 | 46.9 | D | 0.56 | 46.9 | D |
| | NB - L | 0.57 | 19.0 | B | 0.65 | 25.4 | C | 0.68 | 27.2 | C | 0.76 | 32.4 | C | 0.75 | 31.2 | C | 0.85 | 39.6 | D | 0.66 | 20.8 | C | 0.80 | 32.8 | C |
| | NB - TR | 0.52 | 14.6 | B | 0.54 | 14.9 | B | 0.58 | 15.4 | B | 0.60 | 15.7 | B | 0.59 | 15.4 | B | 0.62 | 15.9 | B | 0.61 | 15.8 | B | 0.64 | 16.4 | B |
| | SB - L | 0.03 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.4 | C | 0.04 | 20.6 | C | 0.04 | 20.6 | C |
| | SB - TR | 0.88 | 33.8 | C | 0.91 | 35.9 | D | 0.97 | 39.9 | D | 1.01 | 48.1 | D * | 1.04 | 53.8 | D | 1.09 | 74.1 | E * | 0.81 | 31.4 | C | 0.86 | 33.5 | C |
| 17. Lamberts Lane/ Christopher Lane (E-W) @ Richmond Avenue (N-S) | EB - LT | 0.50 | 26.1 | C | 0.50 | 26.1 | C | 0.70 | 30.6 | C | 0.70 | 30.6 | C | 0.47 | 25.4 | C | 0.47 | 25.4 | C | 0.79 | 33.7 | C | 0.79 | 33.7 | C |
| | EB - R | 0.20 | 21.7 | C | 0.26 | 22.6 | C | 0.24 | 22.1 | C | 0.33 | 23.4 | C | 0.25 | 22.4 | C | 0.35 | 23.9 | C | 0.20 | 21.4 | C | 0.30 | 22.7 | C |
| | NB - L | 0.36 | 16.8 | B | 0.38 | 17.7 | B | 0.41 | 21.3 | C | 0.45 | 24.2 | C | 0.60 | 31.1 | C | 0.68 | 39.5 | D | 0.44 | 19.6 | B | 0.48 | 22.1 | C |
| | NB - TR | 0.45 | 13.6 | B | 0.48 | 14.0 | B | 0.51 | 14.3 | B | 0.55 | 14.8 | B | 0.56 | 14.9 | B | 0.60 | 15.5 | B | 0.53 | 14.5 | B | 0.58 | 15.2 | B |
| | SB - L | 0.26 | 13.9 | B | 0.29 | 14.8 | B | 0.38 | 16.7 | B | 0.43 | 18.7 | B | 0.49 | 22.2 | C | 0.57 | 28.2 | C | 0.35 | 17.0 | B | 0.43 | 20.9 | C |
| | SB - TR | 0.51 | 14.3 | B | 0.52 | 14.5 | B | 0.65 | 16.3 | B | 0.67 | 16.7 | B | 0.62 | 15.7 | B | 0.64 | 16.2 | B | 0.54 | 14.6 | B | 0.56 | 15.0 | B |

This table has been updated for the FEIS.

Table 10-16
2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|---|------------|--------------------------------|-------------|----------|----------------------------------|-------------|----------|--------------------------------|-------------|----------|----------------------------------|-------------|----------|----------------------------|-------------|----------|------------------------------|-------------|----------|----------------------------|-------------|----------|------------------------------|-------------|----------|
| | | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS | V/C | Delay | LOS |
| | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | | RATIO | (sec.) | |
| 26. Barlow Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.21 | 21.7 | C | 0.22 | 21.9 | C | 0.42 | 28.8 | C | 0.46 | 29.7 | C | 0.31 | 23.2 | C | 0.34 | 23.6 | C | 0.30 | 23.1 | C | 0.33 | 23.5 | C |
| | WB - LTR | 0.36 | 23.9 | C | 0.37 | 24.1 | C | 0.67 | 36.0 | D | 0.68 | 36.8 | D | 0.48 | 26.1 | C | 0.50 | 26.4 | C | 0.46 | 25.6 | C | 0.48 | 26.1 | C |
| | NB - LTR | 0.50 | 14.5 | B | 0.54 | 15.0 | B | 0.53 | 12.2 | B | 0.57 | 12.8 | B | 0.56 | 15.2 | B | 0.62 | 16.2 | B | 0.49 | 14.2 | B | 0.55 | 15.1 | B |
| | SB - LTR | 0.52 | 14.6 | B | 0.57 | 15.4 | B | 0.57 | 12.6 | B | 0.63 | 13.6 | B | 0.53 | 14.9 | B | 0.61 | 16.2 | B | 0.51 | 14.6 | B | 0.60 | 16.0 | B |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | EB - LTR | 0.26 | 22.5 | C | 0.27 | 22.7 | C | 0.37 | 28.0 | C | 0.40 | 28.4 | C | 0.24 | 22.2 | C | 0.26 | 22.5 | C | 0.25 | 22.3 | C | 0.28 | 22.7 | C |
| | WB - LTR | 0.17 | 21.3 | C | 0.19 | 21.5 | C | 0.35 | 27.6 | C | 0.37 | 27.9 | C | 0.21 | 21.8 | C | 0.23 | 22.0 | C | 0.23 | 22.0 | C | 0.24 | 22.2 | C |
| | NB - LTR | 0.42 | 13.4 | B | 0.45 | 13.7 | B | 0.47 | 11.3 | B | 0.50 | 11.8 | B | 0.45 | 13.8 | B | 0.50 | 14.4 | B | 0.39 | 13.1 | B | 0.44 | 13.6 | B |
| | SB - LTR | 0.88 | 26.4 | C | 0.96 | 35.9 | D | 0.94 | 26.9 | C | 1.02 | 45.2 | D * | 0.92 | 29.4 | C | 1.05 | 57.3 | E * | 0.95 | 32.1 | C | 1.10 | 73.7 | E * |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.81 | 32.8 | C | 0.91 | 40.5 | D | 0.97 | 43.0 | D | 1.11 | 85.6 | F * | 0.93 | 38.4 | D | 1.11 | 87.2 | F * | 0.96 | 41.5 | D | 1.13 | 96.2 | F * |
| | NB - T | 0.70 | 30.0 | C | 0.78 | 33.3 | C | 0.70 | 28.3 | C | 0.80 | 31.3 | C | 0.64 | 28.1 | C | 0.77 | 32.2 | C | 0.57 | 26.6 | C | 0.70 | 29.8 | C |
| | NB - R | 0.28 | 3.9 | A | 0.28 | 3.9 | A | 0.32 | 3.9 | A | 0.32 | 3.9 | A | 0.29 | 3.9 | A | 0.29 | 3.9 | A | 0.33 | 4.1 | A | 0.33 | 4.1 | A |
| | SB - L | 0.67 | 17.9 | B | 0.84 | 28.0 | C | 0.65 | 17.6 | B | 0.86 | 31.4 | C | 0.69 | 17.7 | B | 0.95 | 44.4 | D | 0.63 | 15.7 | B | 0.88 | 30.7 | C |
| | SB - T | 0.46 | 14.5 | B | 0.52 | 15.5 | B | 0.49 | 15.0 | B | 0.56 | 16.3 | B | 0.60 | 16.9 | B | 0.69 | 19.1 | B | 0.52 | 15.5 | B | 0.63 | 17.6 | B |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | 0.64 | 25.7 | C | 0.66 | 26.2 | C | 1.01 | 46.2 | D | 1.04 | 54.3 | D * | 0.79 | 29.3 | C | 0.82 | 30.8 | C | 0.82 | 30.2 | C | 0.85 | 31.9 | C |
| | NB - T | 0.80 | 35.6 | D | 0.85 | 39.7 | D | 0.89 | 41.9 | D | 0.96 | 51.5 | D * | 0.77 | 33.8 | C | 0.86 | 39.8 | D | 0.76 | 33.3 | C | 0.84 | 38.4 | D |
| | NB - R | 0.35 | 3.5 | A | 0.35 | 3.5 | A | 0.41 | 3.8 | A | 0.41 | 3.8 | A | 0.40 | 3.8 | A | 0.40 | 3.8 | A | 0.37 | 3.6 | A | 0.37 | 3.6 | A |
| | SB - L | 0.51 | 17.0 | B | 0.58 | 19.5 | B | 0.57 | 19.5 | B | 0.66 | 25.6 | C | 0.60 | 18.1 | B | 0.72 | 23.5 | C | 0.41 | 15.0 | B | 0.52 | 17.9 | B |
| | SB - T | 0.60 | 18.7 | B | 0.65 | 19.8 | B | 0.72 | 21.3 | C | 0.76 | 23.0 | C | 0.66 | 19.6 | B | 0.72 | 21.2 | C | 0.67 | 20.0 | B | 0.74 | 22.4 | C |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | WB - LT | 0.09 | 10.9 | B | 0.11 | 11.2 | B | 0.09 | 11.3 | B | 0.12 | 11.7 | B | 0.11 | 10.8 | B | 0.15 | 11.3 | B | 0.08 | 10.4 | B | 0.12 | 10.8 | B |
| | NB - LR | 0.48 | 50.5 | F | 0.59 | 60.1 | F * | 0.63 | 68.6 | F | 0.77 | 88.7 | F * | 0.44 | 39.4 | E | 0.58 | 49.2 | E * | 0.49 | 40.9 | E | 0.64 | 55.5 | F * |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L | 0.62 | 20.1 | C | 0.72 | 22.9 | C | 0.70 | 22.2 | C | 0.84 | 33.5 | C | 0.82 | 25.8 | C | 0.98 | 53.8 | D * | 0.76 | 23.1 | C | 0.93 | 43.5 | D |
| | EB - TR | 0.83 | 46.1 | D | 0.83 | 46.1 | D | 0.97 | 58.9 | E | 0.97 | 58.9 | E | 0.75 | 39.4 | D | 0.75 | 39.4 | D | 0.85 | 44.9 | D | 0.85 | 44.9 | D |
| | WB - L | 0.54 | 18.8 | B | 0.54 | 18.8 | B | 0.71 | 22.0 | C | 0.71 | 22.0 | C | 0.64 | 19.4 | B | 0.64 | 19.4 | B | 0.74 | 21.5 | C | 0.74 | 21.5 | C |
| | WB - TR | 0.30 | 29.9 | C | 0.30 | 29.9 | C | 0.46 | 31.1 | C | 0.46 | 31.1 | C | 0.37 | 30.4 | C | 0.37 | 30.4 | C | 0.39 | 30.6 | C | 0.39 | 30.6 | C |
| | NB - L | 0.16 | 20.3 | C | 0.16 | 20.3 | C | 0.41 | 31.5 | C | 0.41 | 31.5 | C | 0.43 | 34.3 | C | 0.43 | 34.3 | C | 0.49 | 38.9 | D | 0.49 | 38.9 | D |
| | NB - TR | 0.74 | 25.4 | C | 0.81 | 27.9 | C | 0.73 | 23.9 | C | 0.81 | 26.8 | C | 0.86 | 30.9 | C | 0.97 | 43.5 | D | 0.83 | 29.0 | C | 0.94 | 38.1 | D |
| | SB - LTR | 0.96 | 33.3 | C | 1.08 | 66.3 | E * | 1.13 | 83.6 | F | 1.24 | 135.6 | F * | 1.14 | 90.9 | F | 1.38 | 198.5 | F * | 1.14 | 91.1 | F | 1.37 | 193.2 | F * |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | EB - TR | 0.74 | 21.8 | C | 0.77 | 23.6 | C | 0.92 | 35.8 | D | 0.96 | 42.6 | D | 0.73 | 21.4 | C | 0.79 | 24.4 | C | 0.73 | 21.2 | C | 0.79 | 24.3 | C |
| | WB - LT | 0.66 | 18.2 | B | 0.83 | 26.4 | C | 1.20 | 110.8 | F | 1.42 | 209.1 | F * | 0.70 | 18.9 | B | 0.94 | 36.6 | D | 1.00 | 39.1 | D | 1.34 | 175.5 | F * |
| | NB - L | 0.10 | 20.3 | C | 0.10 | 20.3 | C | 0.17 | 21.2 | C | 0.17 | 21.2 | C | 0.14 | 20.8 | C | 0.14 | 20.8 | C | 0.20 | 21.5 | C | 0.20 | 21.5 | C |
| | NB - R | 0.28 | 22.9 | C | 0.34 | 24.1 | C | 0.36 | 24.3 | C | 0.44 | 26.0 | C | 0.43 | 25.6 | C | 0.53 | 28.1 | C | 0.35 | 24.0 | C | 0.45 | 26.0 | C |
| 33. Victory Boulevard (E-W) @ South Gannon Avenue (SB) (Unsignalized) | WB - L | 0.14 | 9.7 | A | 0.15 | 9.8 | A | 0.17 | 9.5 | A | 0.17 | 9.6 | A | 0.12 | 8.9 | A | 0.12 | 9.0 | A | 0.12 | 9.0 | A | 0.12 | 9.1 | A |
| | SB - L | 0.21 | 12.3 | B | 0.22 | 12.6 | B | 0.26 | 12.6 | B | 0.27 | 13.1 | B | 0.20 | 12.3 | B | 0.21 | 12.8 | B | 0.23 | 13.4 | B | 0.24 | 14.2 | B |
| 34. Victory Boulevard (E-W) @ North Gannon Avenue (NB) | EB - L | <u>0.20</u> | <u>26.8</u> | <u>C</u> | <u>0.21</u> | <u>27.0</u> | <u>C</u> | <u>0.32</u> | <u>31.6</u> | <u>C</u> | <u>0.33</u> | <u>32.3</u> | <u>C</u> | <u>0.23</u> | <u>27.9</u> | <u>C</u> | <u>0.24</u> | <u>28.3</u> | <u>C</u> | <u>0.18</u> | <u>26.2</u> | <u>C</u> | <u>0.18</u> | <u>26.4</u> | <u>C</u> |
| | EB - T | <u>0.49</u> | <u>29.3</u> | <u>C</u> | <u>0.50</u> | <u>29.5</u> | <u>C</u> | <u>0.40</u> | <u>27.8</u> | <u>C</u> | <u>0.41</u> | <u>28.0</u> | <u>C</u> | <u>0.37</u> | <u>27.3</u> | <u>C</u> | <u>0.38</u> | <u>27.5</u> | <u>C</u> | <u>0.38</u> | <u>27.5</u> | <u>C</u> | <u>0.40</u> | <u>27.8</u> | <u>C</u> |
| | WB - TR | <u>0.46</u> | <u>28.8</u> | <u>C</u> | <u>0.47</u> | <u>29.0</u> | <u>C</u> | <u>0.60</u> | <u>31.3</u> | <u>C</u> | <u>0.61</u> | <u>31.6</u> | <u>C</u> | <u>0.52</u> | <u>29.8</u> | <u>C</u> | <u>0.54</u> | <u>30.1</u> | <u>C</u> | <u>0.43</u> | <u>28.3</u> | <u>C</u> | <u>0.45</u> | <u>28.6</u> | <u>C</u> |
| | NB - L | <u>0.46</u> | <u>18.1</u> | <u>B</u> | <u>0.49</u> | <u>18.7</u> | <u>B</u> | <u>0.61</u> | <u>20.8</u> | <u>C</u> | <u>0.65</u> | <u>21.6</u> | <u>C</u> | <u>0.61</u> | <u>20.7</u> | <u>C</u> | <u>0.66</u> | <u>21.9</u> | <u>C</u> | <u>0.53</u> | <u>19.2</u> | <u>B</u> | <u>0.58</u> | <u>20.2</u> | <u>C</u> |
| | NB - TR | <u>0.11</u> | <u>14.1</u> | <u>B</u> | <u>0.11</u> | <u>14.1</u> | <u>B</u> | <u>0.16</u> | <u>14.6</u> | <u>B</u> | <u>0.16</u> | <u>14.6</u> | <u>B</u> | <u>0.15</u> | <u>14.5</u> | <u>B</u> | <u>0.15</u> | <u>14.5</u> | <u>B</u> | <u>0.13</u> | <u>14.3</u> | <u>B</u> | <u>0.13</u> | <u>14.3</u> | <u>B</u> |

This table has been updated for the FEIS.

Table 10-16
2019 With-Action Traffic Levels of Service

| | LANE GROUP | NO-ACTION WEEKDAY MD PEAK HOUR | | | WITH-ACTION WEEKDAY MD PEAK HOUR | | | NO-ACTION WEEKDAY PM PEAK HOUR | | | WITH-ACTION WEEKDAY PM PEAK HOUR | | | NO-ACTION SAT MD PEAK HOUR | | | WITH-ACTION SAT MD PEAK HOUR | | | NO-ACTION SAT PM PEAK HOUR | | | WITH-ACTION SAT PM PEAK HOUR | | |
|--|------------|--------------------------------|--------------|----------|----------------------------------|--------------|----------|--------------------------------|--------------|----------|----------------------------------|--------------|----------|----------------------------|--------------|----------|------------------------------|--------------|----------|----------------------------|--------------|----------|------------------------------|--------------|----------|
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 85.6 | F * | 1.05 | 77.1 | E | 1.05 | 77.2 | E | 0.83 | 43.9 | D | 0.86 | 47.6 | D | 0.89 | 48.9 | D | 0.91 | 53.1 | D |
| | EB - TR | 0.47 | 25.5 | C | 0.48 | 25.6 | C | 0.54 | 30.0 | C | 0.55 | 30.1 | C | 0.41 | 24.8 | C | 0.42 | 25.0 | C | 0.41 | 24.8 | C | 0.42 | 24.9 | C |
| | WB - L | 0.88 | 41.8 | D | 0.97 | 56.9 | E * | 0.81 | 24.0 | C | 0.91 | 39.7 | D | 0.96 | 51.5 | D | 1.08 | 86.7 | F * | 0.84 | 38.4 | D | 0.96 | 57.2 | E * |
| | WB - TR | 0.78 | 34.0 | C | 0.79 | 34.4 | C | 0.98 | 55.2 | E | 1.00 | 59.9 | E * | 0.79 | 33.4 | C | 0.81 | 34.4 | C | 0.65 | 30.0 | C | 0.67 | 30.6 | C |
| | NB - L | 0.11 | 16.4 | B | 0.11 | 16.5 | B | 0.20 | 17.5 | B | 0.21 | 17.6 | B | 0.18 | 17.2 | B | 0.21 | 17.5 | B | 0.07 | 16.1 | B | 0.08 | 16.2 | B |
| | NB - TR | 1.16 | 101.6 | F | 1.23 | 130.2 | F * | 1.15 | 95.0 | F | 1.22 | 127.7 | F * | 1.18 | 108.5 | F | 1.27 | 149.2 | F * | 1.18 | 107.9 | F | 1.28 | 154.4 | F * |
| | SB - L | 0.82 | 73.5 | E | 0.82 | 73.5 | E | 0.95 | 83.2 | F | 0.95 | 83.2 | F | 0.77 | 61.5 | E | 0.77 | 61.5 | E | 0.68 | 52.4 | D | 0.68 | 52.4 | D |
| | SB - T | 0.74 | 27.9 | C | 0.76 | 28.7 | C | 0.95 | 39.4 | D | 0.97 | 43.5 | D | 0.85 | 32.6 | C | 0.88 | 35.2 | D | 0.71 | 26.9 | C | 0.74 | 27.9 | C |
| SB - R | 0.39 | 20.2 | C | 0.39 | 20.2 | C | 0.74 | 26.5 | C | 0.74 | 26.5 | C | 0.38 | 19.8 | B | 0.38 | 19.8 | B | 0.33 | 19.2 | B | 0.33 | 19.2 | B | |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L | 0.78 | 26.2 | C | 0.83 | 30.0 | C | 0.78 | 24.2 | C | 0.84 | 28.5 | C | 0.87 | 36.0 | D | 0.96 | 51.3 | D * | 0.80 | 26.8 | C | 0.89 | 35.5 | D |
| | EB - TR | 0.48 | 16.1 | B | 0.50 | 16.3 | B | 0.45 | 15.4 | B | 0.46 | 15.6 | B | 0.40 | 15.0 | B | 0.42 | 15.2 | B | 0.42 | 15.2 | B | 0.44 | 15.5 | B |
| | WB - LTR | 0.89 | 36.0 | D | 0.92 | 38.1 | D | 0.82 | 32.6 | C | 0.85 | 34.3 | C | 0.95 | 39.3 | D | 0.98 | 45.3 | D * | 0.79 | 31.6 | C | 0.83 | 33.4 | C |
| | NB - LTR | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B | 0.03 | 17.1 | B |
| | SB - LTR | 0.78 | 30.9 | C | 0.81 | 32.4 | C | 1.05 | 57.7 | E | 1.08 | 70.9 | E * | 0.77 | 29.9 | C | 0.81 | 32.0 | C | 0.68 | 27.1 | C | 0.72 | 28.5 | C |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | EB - TR | 0.71 | 18.9 | B | 0.78 | 21.6 | C | 0.69 | 19.1 | B | 0.77 | 22.0 | C | 0.89 | 24.8 | C | 0.99 | 39.1 | D | 0.72 | 19.2 | B | 0.85 | 24.8 | C |
| | WB - LT | 0.54 | 15.2 | B | 0.60 | 16.6 | B | 1.10 | 72.8 | E | 1.22 | 123.0 | F * | 0.84 | 23.3 | C | 0.97 | 38.6 | D | 0.74 | 19.4 | B | 0.87 | 26.3 | C |
| | NB - LR | 0.30 | 23.1 | C | 0.33 | 23.5 | C | 0.39 | 35.3 | D | 0.43 | 36.2 | D | 0.25 | 22.4 | C | 0.29 | 23.0 | C | 0.28 | 22.8 | C | 0.33 | 23.5 | C |
| 38. Forest Avenue (E-W) @ Richmond Avenue-Morningstar Road (N-S) | EB - L | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.40</u> | <u>28.2</u> | <u>C</u> | <u>0.41</u> | <u>27.7</u> | <u>C</u> | <u>0.41</u> | <u>27.7</u> | <u>C</u> | <u>0.30</u> | <u>25.8</u> | <u>C</u> | <u>0.30</u> | <u>25.8</u> | <u>C</u> |
| | EB - TR | <u>0.97</u> | <u>46.4</u> | <u>D</u> | <u>0.97</u> | <u>46.4</u> | <u>D</u> | <u>0.96</u> | <u>44.8</u> | <u>D</u> | <u>0.96</u> | <u>44.8</u> | <u>D</u> | <u>1.06</u> | <u>70.8</u> | <u>E</u> | <u>1.06</u> | <u>70.8</u> | <u>E</u> | <u>1.00</u> | <u>51.1</u> | <u>D</u> | <u>1.00</u> | <u>51.1</u> | <u>D</u> |
| | WB - L | 0.91 | 56.9 | E | 0.91 | 56.9 | E | 1.20 | 138.7 | F | 1.20 | 138.7 | F | 1.00 | 75.3 | E | 1.00 | 75.3 | E | 0.98 | 70.4 | E | 0.98 | 70.4 | E |
| | WB - TR | 0.45 | 16.5 | B | 0.45 | 16.5 | B | 0.51 | 17.2 | B | 0.51 | 17.2 | B | 0.49 | 16.9 | B | 0.49 | 16.9 | B | 0.46 | 16.5 | B | 0.46 | 16.5 | B |
| | NB - L | <u>0.55</u> | <u>21.6</u> | <u>C</u> | <u>0.57</u> | <u>22.4</u> | <u>C</u> | <u>0.41</u> | <u>19.9</u> | <u>B</u> | <u>0.43</u> | <u>20.5</u> | <u>C</u> | <u>0.53</u> | <u>21.3</u> | <u>C</u> | <u>0.56</u> | <u>22.5</u> | <u>C</u> | <u>0.57</u> | <u>22.6</u> | <u>C</u> | <u>0.61</u> | <u>24.0</u> | <u>C</u> |
| | NB - T | 0.40 | 20.8 | C | 0.44 | 21.5 | C | 0.44 | 21.6 | C | 0.48 | 22.3 | C | 0.46 | 21.7 | C | 0.52 | 22.8 | C | 0.46 | 21.6 | C | 0.52 | 22.8 | C |
| | NB - R | 0.32 | 10.7 | B | 0.32 | 10.7 | B | 0.27 | 10.2 | B | 0.27 | 10.2 | B | 0.29 | 10.4 | B | 0.29 | 10.4 | B | 0.29 | 10.3 | B | 0.29 | 10.3 | B |
| | SB - LTR | 0.80 | 43.4 | D | 0.86 | 49.0 | D * | 1.00 | 64.3 | E | 1.07 | 83.8 | F * | 0.86 | 47.0 | D | 0.96 | 62.4 | E * | 0.98 | 58.2 | E | 1.09 | 89.5 | F * |

Notes:
 EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound
 L-Left, T-Through, R-Right, Dfl-Analysis considers a Defacto Left Lane on this approach
 V/C Ratio - Volume to Capacity Ratio, sec. - Seconds
 LOS - Level of Service
 * - Denotes a significant adverse impact
 Analysis is based on the 2000 Highway Capacity Manual methodology (HCS+, version 5.5)

This table has been updated for the FEIS.

Table 10-17
2019 With-Action Significantly Impacted Lane Groups

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | | | | WEEKDAY PM PEAK HOUR | | | | | |
|--|------------|--------------------------|--------------|-----|-------------|--------------|-----|----------------------|--------------|-----|-------------|--------------|-----|
| | | NO-ACTION | | | WITH-ACTION | | | NO-ACTION | | | WITH-ACTION | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R | | | | | | | 0.98 | 39.3 | D | 1.07 | 65.7 | E |
| | SB - L | 1.13 | 125.0 | F | 1.23 | 165.0 | F | 0.77 | 45.0 | D | 0.89 | 56.0 | E |
| | SB - TR | | | | | | | 1.10 | 80.1 | F | 1.20 | 124.2 | F |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 0.95 | 58.9 | E | 1.20 | 141.0 | F | 0.76 | 37.8 | D | 1.07 | 78.6 | E |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | 0.79 | 38.8 | D | 0.97 | 57.8 | E |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | 0.88 | 39.1 | D | 0.96 | 47.9 | D |
| | WB - LR | | | | | | | 1.02 | 61.6 | E | 1.10 | 87.5 | F |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | | | | | | | 0.81 | 47.8 | D | 0.87 | 54.0 | D |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR | 1.18 | 122.2 | F | 1.59 | 304.0 | F | 1.17 | 118.2 | F | 1.64 | 324.7 | F |
| | NB - TR | 1.00 | 61.1 | E | 1.03 | 68.5 | E | 1.06 | 76.0 | E | 1.09 | 86.6 | F |
| | SB - TR | 1.17 | 116.4 | F | 1.24 | 147.0 | F | 1.14 | 102.6 | F | 1.22 | 135.7 | F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | NB - LTR | 1.07 | 93.4 | F | 1.37 | 214.1 | F | 0.92 | 52.2 | D | 1.21 | 143.9 | F |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | SB - L | 0.54 | 44.3 | D | 0.76 | 57.7 | E | 0.70 | 52.2 | D | 0.96 | 86.3 | F |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | | | | | | | 0.31 | 20.1 | C | 0.52 | 31.8 | D |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | | | | 0.97 | 39.9 | D | 1.01 | 48.1 | D |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | WB - L | 1.09 | 95.9 | F | 1.18 | 133.1 | F | 1.29 | 177.0 | F | 1.38 | 221.2 | F |
| | NB - T | | | | | | | | | | | | |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.13 | 97.2 | F | 1.17 | 114.7 | F | 1.13 | 96.2 | F | 1.17 | 116.8 | F |
| | NB - L | 0.95 | 75.1 | E | 1.00 | 87.4 | F | 1.05 | 94.4 | F | 1.11 | 113.9 | F |
| | SB - TR | | | | | | | 1.12 | 78.2 | E | 1.20 | 113.8 | F |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | NB - L | 1.13 | 112.2 | F | 1.19 | 134.9 | F | 1.11 | 102.8 | F | 1.18 | 130.6 | F |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.84 | 49.3 | D | 0.80 | 56.2 | E | 0.81 | 45.9 | D | 0.88 | 52.4 | D |
| | NB - TR | | | | | | | 0.92 | 34.5 | C | 1.02 | 50.8 | D |
| 24. Drumgoole Road West (E-W) @ | SB - T | | | | | | | 0.98 | 32.8 | C | 1.04 | 48.5 | D |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | NB - TR | | | | | | | 1.04 | 61.5 | E | 1.12 | 92.4 | F |
| | SB - L | 1.03 | 75.2 | E | 1.08 | 89.0 | F | 1.08 | 83.4 | F | 1.12 | 100.6 | F |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | | | | | | | 0.94 | 26.9 | C | 1.02 | 45.2 | D |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | | | | | | | 0.97 | 43.0 | D | 1.11 | 85.6 | F |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | | | | | | | 1.01 | 46.2 | D | 1.04 | 54.3 | D |
| | NB - T | | | | | | | 0.89 | 41.9 | D | 0.96 | 51.5 | D |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.48 | 50.5 | F | 0.59 | 60.1 | F | 0.63 | 68.6 | F | 0.77 | 88.7 | F |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | SB - LTR | 0.96 | 33.3 | C | 1.08 | 66.3 | E | 1.13 | 83.6 | F | 1.24 | 135.6 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | | | | | | | 1.20 | 110.8 | F | 1.42 | 209.1 | F |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 85.6 | F | | | | | | |
| | WB - L | 0.88 | 41.8 | D | 0.97 | 56.9 | E | | | | | | |
| | WB - TR | | | | | | | 0.98 | 55.2 | E | 1.00 | 59.9 | E |
| | NB - TR | 1.16 | 101.6 | F | 1.23 | 130.2 | F | 1.15 | 95.0 | F | 1.22 | 127.7 | F |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | SB - LTR | | | | | | | 1.05 | 57.7 | E | 1.08 | 70.9 | E |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | WB - LT | | | | | | | 1.10 | 72.8 | E | 1.22 | 123.0 | F |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | SB - LTR | 0.80 | 43.4 | D | 0.86 | 49.0 | D | 1.00 | 64.3 | E | 1.07 | 83.8 | F |

DESIGNATION TABLE HAS BEEN UPDATED

Table 10-17

2019 With-Action Significantly Impacted Lane Groups

| | LANE GROUP | SATURDAY MIDDAY PEAK HOUR | | | | | | SATURDAY PM PEAK HOUR | | | | | |
|---|---------------------------------------|------------------------------|------------------------------|------------------|------------------------------|-------------------------------|------------------|-----------------------|-------------------------|-------------|----------------------|-------------------------|-------------|
| | | NO-ACTION | | | WITH-ACTION | | | NO-ACTION | | | WITH-ACTION | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R SB - L SB - TR | 0.98 1.13 1.00 | 43.6 118.1 42.6 | D F D | 1.10 1.28 1.12 | 80.8 177.1 84.3 | F F F | 1.12 1.12 1.12 | 83.1 118.7 84.3 | F F F | 1.27 1.27 1.27 | 146.6 177.3 146.6 | F F F |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 1.10 | 90.4 | F | 1.45 | 242.9 | F | 0.95 | 54.7 | D | 1.29 | 172.9 | F |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.84 | 40.9 | D | 1.04 | 75.3 | E | 0.92 | 48.0 | D | 1.15 | 113.8 | F |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - LR NB - T | 1.06 1.08 | 77.5 64.1 | E E | 1.15 1.23 | 112.4 129.0 | F F | 1.01 | 65.3 | E | 1.12 | 100.3 | F |
| 6. Richmond Hill Road (E-W) @ SI Mall North Driveway (N-S) | NB - L | 0.82 | 38.3 | D | 0.97 | 58.1 | E | 0.76 | 34.6 | C | 0.94 | 53.3 | D |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | 0.97 | 66.4 | E | 1.06 | 90.8 | F | 0.93 | 58.6 | E | 1.04 | 81.8 | F |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR NB - TR SB - TR | 1.19 1.17 1.16 | 123.5 117.6 112.2 | F F F | 1.84 1.21 1.26 | 416.6 133.5 153.7 | F F F | 1.19 1.14 1.16 | 122.9 103.4 111.4 | F F F | 1.86 1.18 1.26 | 427.0 119.9 167.3 | F F F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L NB - LTR SB - LTR | 0.72 1.21 | 25.3 141.2 | C F | 0.98 1.63 | 56.0 322.2 | E F | 1.21 0.78 | 142.0 30.1 | F C | 1.71 1.00 | 360.6 56.6 | F E |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | SB - L | 0.63 | 47.5 | D | 0.93 | 78.4 | E | 0.65 | 48.1 | D | 0.98 | 89.2 | F |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.46 | 24.3 | C | 0.78 | 55.8 | F | 0.53 | 30.1 | D | 0.97 | 101.3 | F |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | | | | | | | 0.65 | 30.3 | C | 0.89 | 45.9 | D |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | 1.04 | 53.8 | D | 1.09 | 74.1 | E | | | | | | |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | WB - L NB - T SB - TR | 1.15 0.92 0.95 | 117.4 45.4 46.1 | F D D | 1.28 1.01 1.04 | 174.3 59.5 65.8 | F E E | 1.15 0.91 | 119.9 44.7 | F D | 1.28 1.01 | 175.4 60.3 | F E |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR NB - L SB - TR | 1.13 0.94 1.06 | 98.4 70.2 54.9 | F E D | 1.20 1.01 1.16 | 127.6 87.5 97.1 | F F F | 0.85 1.00 | 47.3 80.1 | D F | 0.92 1.09 | 56.0 106.6 | E F |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | NB - L SB - TR | 1.13 1.07 | 105.4 64.7 | F E | 1.20 1.20 | 134.0 120.2 | F F | 1.12 0.91 | 102.1 33.2 | F C | 1.21 1.03 | 139.2 54.0 | F D |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR NB - TR | 1.05 0.93 | 88.6 30.5 | F C | 1.15 1.03 | 125.6 48.1 | F D | 0.86 0.96 | 51.4 34.4 | D C | 0.95 1.08 | 64.1 67.6 | E E |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L EB - LR NB - T SB - T | 0.96 1.02 0.94 0.97 | 35.2 48.5 33.1 32.9 | D D C C | 1.12 1.19 1.03 1.05 | 86.1 114.2 51.7 54.1 | F F D D | 0.89 | 31.9 | C | 1.05 | 63.1 | E |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | NB - TR SB - L | 1.09 1.11 | 77.1 95.9 | E F | 1.19 1.16 | 118.8 115.3 | F F | 0.94 0.99 | 39.9 60.1 | D E | 1.04 1.05 | 62.1 77.6 | E E |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | 0.92 | 29.4 | C | 1.05 | 57.3 | E | 0.95 | 32.1 | C | 1.10 | 73.7 | E |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.93 | 38.4 | D | 1.11 | 87.2 | F | 0.96 | 41.5 | D | 1.13 | 96.2 | F |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.44 | 39.4 | E | 0.58 | 49.2 | E | 0.49 | 40.9 | E | 0.64 | 55.5 | F |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L SB - LTR | 0.82 1.14 | 25.8 90.9 | C F | 0.98 1.38 | 53.8 198.5 | D F | 1.14 | 91.1 | F | 1.37 | 193.2 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | | | | | | | 1.00 | 39.1 | D | 1.34 | 175.5 | F |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | WB - L NB - TR | 0.96 1.18 | 51.5 108.5 | D F | 1.08 1.27 | 86.7 149.2 | F F | 0.84 1.18 | 38.4 107.9 | D F | 0.96 1.28 | 57.2 154.4 | E F |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L WB - LTR | 0.87 0.95 | 36.0 39.3 | D D | 0.96 0.98 | 51.3 45.3 | D D | | | | | | |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | SB - LTR | 0.86 | 47.0 | D | 0.96 | 62.4 | E | 0.98 | 58.2 | E | 1.09 | 89.5 | F |

DESIGNER'S TABLE HAS BEEN UPDATED

Table 10-17
2019 With-Action Significantly Impacted Lane Groups

| | LANE GROUP | WEEKDAY MIDDAY PEAK HOUR | | | | | | WEEKDAY PM PEAK HOUR | | | | | |
|--|------------|--------------------------|--------------|-----|-------------|--------------|-----|----------------------|--------------|-----|-------------|--------------|-----|
| | | NO-ACTION | | | WITH-ACTION | | | NO-ACTION | | | WITH-ACTION | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R | | | | | | | 0.98 | 39.3 | D | 1.07 | 65.7 | E |
| | SB - L | 1.13 | 125.0 | F | 1.23 | 165.0 | F | 0.77 | 45.0 | D | 0.89 | 56.0 | E |
| | SB - TR | | | | | | | 1.10 | 80.1 | F | 1.20 | 124.2 | F |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 0.95 | 58.9 | E | 1.20 | 141.0 | F | 0.76 | 37.8 | D | 1.07 | 78.6 | E |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | 0.79 | 38.8 | D | 0.97 | 57.8 | E |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - L | | | | | | | 0.88 | 39.1 | D | 0.96 | 47.9 | D |
| | WB - LR | | | | | | | 1.02 | 61.6 | E | 1.10 | 87.5 | F |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | | | | | | | 0.81 | 47.8 | D | 0.87 | 54.0 | D |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR | 1.18 | 122.2 | F | 1.59 | 304.0 | F | 1.17 | 118.2 | F | 1.64 | 324.7 | F |
| | NB - TR | 1.00 | 61.1 | E | 1.03 | 68.5 | E | 1.06 | 76.0 | E | 1.09 | 86.6 | F |
| | SB - TR | 1.17 | 116.4 | F | 1.24 | 147.0 | F | 1.14 | 102.6 | F | 1.22 | 135.7 | F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | NB - LTR | 1.07 | 93.4 | F | 1.37 | 214.1 | F | 0.92 | 52.2 | D | 1.21 | 143.9 | F |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | SB - L | 0.54 | 44.3 | D | 0.76 | 57.7 | E | 0.70 | 52.2 | D | 0.96 | 86.3 | F |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | | | | | | | 0.31 | 20.1 | C | 0.52 | 31.8 | D |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | | | | | | | 0.97 | 39.9 | D | 1.01 | 48.1 | D |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | WB - L | 1.09 | 95.9 | F | 1.18 | 133.1 | F | 1.29 | 177.0 | F | 1.38 | 221.2 | F |
| | NB - T | | | | | | | | | | | | |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR | 1.13 | 97.2 | F | 1.17 | 114.7 | F | 1.13 | 96.2 | F | 1.17 | 116.8 | F |
| | NB - L | 0.95 | 75.1 | E | 1.00 | 87.4 | F | 1.05 | 94.4 | F | 1.11 | 113.9 | F |
| | SB - TR | | | | | | | 1.12 | 78.2 | E | 1.20 | 113.8 | F |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | NB - L | 1.13 | 112.2 | F | 1.19 | 134.9 | F | 1.11 | 102.8 | F | 1.18 | 130.6 | F |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR | 0.84 | 49.3 | D | 0.90 | 56.2 | E | 0.81 | 45.9 | D | 0.88 | 52.4 | D |
| | NB - TR | | | | | | | 0.92 | 34.5 | C | 1.02 | 50.8 | D |
| 24. Drumgoole Road West (E-W) @ | SB - T | | | | | | | 0.98 | 32.8 | C | 1.04 | 48.5 | D |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | NB - TR | | | | | | | 1.04 | 61.5 | E | 1.12 | 92.4 | F |
| | SB - L | 1.03 | 75.2 | E | 1.08 | 89.0 | F | 1.08 | 83.4 | F | 1.12 | 100.6 | F |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | | | | | | | 0.94 | 26.9 | C | 1.02 | 45.2 | D |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | | | | | | | 0.97 | 43.0 | D | 1.11 | 85.6 | F |
| 29. Clarke Avenue (E-W) @ Arthur Kill Road (N-S) | WB - LR | | | | | | | 1.01 | 46.2 | D | 1.04 | 54.3 | D |
| | NB - T | | | | | | | 0.89 | 41.9 | D | 0.96 | 51.5 | D |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.48 | 50.5 | F | 0.59 | 60.1 | F | 0.63 | 68.6 | F | 0.77 | 88.7 | F |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | SB - LTR | 0.96 | 33.3 | C | 1.08 | 66.3 | E | 1.13 | 83.6 | F | 1.24 | 135.6 | F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | | | | | | | 1.20 | 110.8 | F | 1.42 | 209.1 | F |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | EB - L | 1.03 | 81.4 | F | 1.05 | 85.6 | F | | | | | | |
| | WB - L | 0.88 | 41.8 | D | 0.97 | 56.9 | E | | | | | | |
| | WB - TR | | | | | | | 0.98 | 55.2 | E | 1.00 | 59.9 | E |
| | NB - TR | 1.16 | 101.6 | F | 1.23 | 130.2 | F | 1.15 | 95.0 | F | 1.22 | 127.7 | F |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | SB - LTR | | | | | | | 1.05 | 57.7 | E | 1.08 | 70.9 | E |
| 37. Richmond Road (E-W) @ Wilder Avenue (N-S) | WB - LT | | | | | | | 1.10 | 72.8 | E | 1.22 | 123.0 | F |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | SB - LTR | 0.80 | 43.4 | D | 0.86 | 49.0 | D | 1.00 | 64.3 | E | 1.07 | 83.8 | F |

Table 10-17

2019 With-Action Significantly Impacted Lane Groups

| | LANE GROUP | SATURDAY MIDDAY PEAK HOUR | | | | | | SATURDAY PM PEAK HOUR | | | | | |
|---|---------------------------------------|------------------------------|------------------------------|------------------|------------------------------|-------------------------------|------------------|-----------------------|-------------------------|-------------|----------------------|-------------------------|-------------|
| | | NO-ACTION | | | WITH-ACTION | | | NO-ACTION | | | WITH-ACTION | | |
| | | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS | V/C RATIO | Delay (sec.) | LOS |
| 1. Richmond Hill Road (E-W) @ Richmond Avenue (N-S) | WB - R SB - L SB - TR | 0.98 1.13 1.00 | 43.6 118.1 42.6 | D F D | 1.10 1.28 1.12 | 80.8 177.1 84.3 | F F F | 1.12 1.12 1.12 | 83.1 118.7 F | F F F | 1.27 1.27 1.27 | 146.6 177.3 F | F F F |
| 2. SI Mall Northwest Driveway (E-W) @ Richmond Avenue (N-S) | SB - L | 1.10 | 90.4 | F | 1.45 | 242.9 | F | 0.95 | 54.7 | D | 1.29 | 172.9 | F |
| 4. Platinum Avenue (E-W) @ Richmond Avenue (N-S) | WB - L | 0.84 | 40.9 | D | 1.04 | 75.3 | E | 0.92 | 48.0 | D | 1.15 | 113.8 | F |
| 5. Forest Hill Road (E-W) @ Richmond Avenue (N-S) | WB - LR NB - T | 1.06 1.08 | 77.5 64.1 | E E | 1.15 1.23 | 112.4 129.0 | F F | 1.01 | 65.3 | E | 1.12 | 100.3 | F |
| 6. Richmond Hill Road (E-W) @ SI Mall North Driveway (N-S) | NB - L | 0.82 | 38.3 | D | 0.97 | 58.1 | E | 0.76 | 34.6 | C | 0.94 | 53.3 | D |
| 7. Richmond Hill Road (E-W) @ Marsh Avenue (N-S) | NB - L | 0.97 | 66.4 | E | 1.06 | 90.8 | F | 0.93 | 58.6 | E | 1.04 | 81.8 | F |
| 8. Richmond Hill Road (E-W) @ Forest Hill Road (N-S) | WB - LTR NB - TR SB - TR | 1.19 1.17 1.16 | 123.5 117.6 112.2 | F F F | 1.84 1.21 1.26 | 416.6 133.5 153.7 | F F F | 1.19 1.14 1.16 | 122.9 103.4 111.4 | F F F | 1.86 1.18 1.26 | 427.0 119.9 157.3 | F F F |
| 10. Platinum Avenue (E-W) @ Staten Island Mall Drive (N-S) | EB - L NB - LTR SB - LTR | 0.72 1.21 | 25.3 141.2 | C F | 0.98 1.63 | 56.0 322.2 | E F | 1.21 0.78 | 142.0 30.1 | F C | 1.71 1.00 | 360.6 56.6 | F E |
| 11. Platinum Avenue (E-W) @ Marsh Avenue (N-S) | SB - L | 0.63 | 47.5 | D | 0.93 | 78.4 | E | 0.65 | 48.1 | D | 0.98 | 89.2 | F |
| 13. SI Mall East Driveway (E-W) @ Marsh Avenue (N-S) (Unsignalized) | EB - L | 0.46 | 24.3 | C | 0.78 | 55.8 | F | 0.53 | 30.1 | D | 0.97 | 101.3 | F |
| 14. SI Mall Northeast Driveway (E-W) @ Marsh Avenue (N-S) | EB - L | | | | | | | 0.65 | 30.3 | C | 0.89 | 45.9 | D |
| 16. SI Expressway EB Off-Ramp/ W Caswell Avenue/Goethals Road N (E-W) @ Richmond Avenue (N-S) | SB - TR | 1.04 | 53.8 | D | 1.09 | 74.1 | E | | | | | | |
| 19. Victory Boulevard (E-W) @ Richmond Avenue (N-S) | WB - L NB - T SB - TR | 1.15 0.92 0.95 | 117.4 45.4 46.1 | F D D | 1.28 1.01 1.04 | 174.3 59.5 65.8 | F E E | 1.15 0.91 0.91 | 119.9 44.7 44.7 | F D D | 1.28 1.01 1.01 | 175.4 60.3 60.3 | F E E |
| 20. Signs Road (E-W) @ Richmond Avenue (N-S) | EB - LR NB - L SB - TR | 1.13 0.94 1.06 | 98.4 70.2 54.9 | F E D | 1.20 1.01 1.16 | 127.6 87.5 97.1 | F F F | 0.85 1.00 1.00 | 47.3 80.1 80.1 | D F F | 0.92 1.09 1.09 | 56.0 106.6 106.6 | E F F |
| 22. Draper Place (E-W) @ Richmond Avenue (N-S) | NB - L SB - TR | 1.13 1.07 | 105.4 64.7 | F E | 1.20 1.20 | 134.0 120.2 | F F | 1.12 0.91 | 102.1 33.2 | F C | 1.21 1.03 | 139.2 54.0 | F D |
| 23. Nome Avenue (E-W) @ Richmond Avenue (N-S) | WB - LR NB - TR | 1.05 0.93 | 88.6 30.5 | F C | 1.15 1.03 | 125.6 48.1 | F D | 0.86 0.96 | 51.4 34.4 | D C | 0.95 1.08 | 64.1 67.6 | E E |
| 24. Drumgoole Road West (E-W) @ Richmond Avenue (N-S) | EB - L EB - LR NB - T SB - T | 0.96 1.02 0.94 0.97 | 35.2 48.5 33.1 32.9 | D D C C | 1.12 1.19 1.03 1.05 | 86.1 114.2 51.7 54.1 | F F D D | 0.89 | 31.9 | C | 1.05 | 63.1 | E |
| 25. Arthur Kill Road (E-W) @ Richmond Avenue (N-S) | NB - TR SB - L | 1.09 1.11 | 77.1 95.9 | E F | 1.19 1.16 | 118.8 115.3 | F F | 0.94 0.99 | 39.9 60.1 | D E | 1.04 1.05 | 62.1 77.6 | E E |
| 27. Katan Avenue (E-W) @ Richmond Avenue (N-S) | SB - LTR | 0.92 | 29.4 | C | 1.05 | 57.3 | E | 0.95 | 32.1 | C | 1.10 | 73.7 | E |
| 28. Richmond Road (E-W) @ Arthur Kill Road-Richmond Hill Road (N-S) | WB - LR | 0.93 | 38.4 | D | 1.11 | 87.2 | F | 0.96 | 41.5 | D | 1.13 | 96.2 | F |
| 30. Arthur Kill Road (E-W) @ Corbin Avenue (N-S) (Unsignalized) | NB - LR | 0.44 | 39.4 | E | 0.58 | 49.2 | E | 0.49 | 40.9 | E | 0.64 | 55.5 | F |
| 31. Arthur Kill Road (E-W) @ Drumgoole Road West (N-S) | EB - L SB - LTR | 0.82 1.14 | 25.8 90.9 | C F | 0.98 1.38 | 53.8 198.5 | D F | 1.14 1.00 | 91.1 39.1 | F D | 1.37 1.34 | 193.2 175.5 | F F |
| 32. Arthur Kill Road (E-W) @ Woodrow Road (N-S) | WB - LT | | | | | | | 1.00 | 39.1 | D | 1.34 | 175.5 | F |
| 35. Rockland Avenue (E-W) @ Forest Hill Road (N-S) | WB - L NB - TR | 0.96 1.18 | 51.5 108.5 | D F | 1.08 1.27 | 86.7 149.2 | F F | 0.84 1.18 | 38.4 107.9 | D F | 0.96 1.28 | 57.2 154.4 | E F |
| 36. Rockland Avenue (E-W) @ Brielle Avenue (N-S) | EB - L WB - LTR | 0.87 0.95 | 36.0 39.3 | D D | 0.96 0.98 | 51.3 45.3 | D D | | | | | | |
| 38. Forest Avenue (E-W) @ Richmond Avenue/Morningstar Road (N-S) | SB - LTR | 0.86 | 47.0 | D | 0.96 | 62.4 | E | 0.98 | 58.2 | E | 1.09 | 89.5 | F |

In the With-Action condition, the westbound right turn movement would operate at LOS E in the weekday PM peak hour with 65.7 seconds of delay, while the increase in delay compared to the No-Action condition would total 26.4 seconds. In the Saturday midday and PM peak hours, it would operate at with 80.8 and 146.6 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 37.2 and 63.5 seconds respectively.

In the With-Action condition, the southbound left turn lane group would operate at LOS F in the weekday midday and Saturday midday and PM peak hours with 165.0, 177.1, and 177.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 40.0, 59.0, and 58.6 seconds respectively. In the weekday PM peak hour, it would operate at LOS E with 56.0 seconds of delay while the increase in delay compared to the No-Action condition would total 11.0 seconds.

In the With-Action condition, the southbound through right lane group would operate at LOS F in the weekday PM and Saturday midday peak hours with 124.2 and 84.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 44.1 and 41.7 seconds respectively.

Staten Island Mall Northwest Driveway at Richmond Avenue

The southbound left turn lane group on Richmond Avenue would be significantly adversely impacted in all peak hours.

In the With-Action condition, the southbound left turn lane group would operate at LOS F in the weekday midday and Saturday midday and PM peak hours with 141.0, 242.9, and 172.9 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 82.1, 152.5, and 118.2 seconds respectively. In the weekday PM peak hour, it would operate at LOS E with 78.6 seconds of delay while the increase in delay compared to the No-Action condition would total 40.8 seconds.

Platinum Avenue at Richmond Avenue

The westbound left turn lane group on Platinum Avenue would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

In the With-Action condition, the westbound left turn lane group would operate at LOS E in the weekday PM and Saturday midday peak hours with 57.8 and 75.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 19.0 and 34.4 seconds respectively. In the Saturday PM peak hour, it would operate at LOS F with 113.8 seconds of delay while the increase in delay compared to the No-Action condition would total 65.8 seconds.

Forest Hill Road at Richmond Avenue

The westbound left turn lane group on Forest Hill Road would be significantly adversely impacted in the weekday PM peak hour. The westbound left-right lane group on Forest Hill Road would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours. The northbound through lane group on Richmond Avenue would be significantly adversely impacted in the Saturday midday peak hour.

In the With-Action condition, the westbound left turn lane group would operate at LOS D in the weekday PM peak hour with 47.9 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 8.8 seconds.

In the With-Action condition, the westbound left-right lane group would operate at LOS F in the weekday PM and Saturday midday and PM peak hours with 87.5, 112.4, and 100.3 seconds of

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delay respectively, while increases in delay compared to the No-Action condition would total 25.9, 34.9, and 35.0 seconds respectively.

In the With-Action condition, the northbound through lane group would operate at LOS F in the Saturday midday peak hour with 129.0 seconds of delay, while the increase in delay compared to the No-Action condition would total 64.9 seconds.

Richmond Hill Road at Staten Island Mall North Driveway

The northbound left turn lane group on the Staten Island Mall North Driveway would be significantly adversely impacted in the Saturday midday and PM peak hours.

In the With-Action condition, the northbound left turn lane group would operate at LOS E in the Saturday midday peak hour with 58.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 19.8 seconds. The northbound left turn lane group would operate at LOS D in the Saturday PM peak hour with 53.3 seconds of delay, while the increase in delay compared to the No-Action condition would total 18.7 seconds.

Richmond Hill Road at Marsh Avenue

The northbound left turn lane group on Marsh Avenue would be significantly adversely impacted in the weekday PM and the Saturday midday and PM peak hours.

In the With-Action condition, the northbound left turn lane group would operate at LOS D in the weekday PM peak hour with 54.0 seconds of delay, while the increase in delay compared to the No-Action condition would total 6.2 seconds. The northbound left turn lane group would operate at LOS F in the Saturday midday and PM peak hours with 90.8 and 81.8 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 24.4 and 23.2 seconds respectively.

Richmond Hill Road at Forest Hill Road

The westbound left-through-right lane group on Richmond Hill Road and the northbound and southbound through-right lane groups on Forest Hill Road would be significantly adversely impacted in all peak hours.

In the With-Action condition, the westbound left-through-right lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 304.0, 324.7, 416.6, and 427.0 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 181.8, 206.5, 293.1, and 304.1 seconds respectively.

In the With-Action condition, the northbound through-right lane group would operate at LOS E in the weekday midday peak hour with 68.5 seconds of delay, while the increase in delay compared to the No-Action condition would total 7.4 seconds. The northbound through-right lane group would operate at LOS F in the weekday PM and Saturday midday and PM peak hours with 86.6, 133.5, and 119.9 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 10.6, 15.9, and 16.5 seconds respectively.

In the With-Action condition, the southbound through-right lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 147.0, 135.7, 153.7, and 157.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 30.6, 33.1, 41.5, and 45.9 seconds respectively.

Platinum Avenue at Staten Island Mall Drive

The eastbound left turn lane group on Platinum Avenue would be significantly adversely impacted in the Saturday Midday peak hour. The northbound left-through-right lane group on Staten Island Mall Drive would be significantly adversely impacted in all peak hours. The southbound left-through-right lane group on Staten Island Mall Drive would be significantly adversely impacted in the Saturday PM peak hour.

In the With-Action condition, the westbound left turn lane group would operate at LOS E in the Saturday midday peak hour with 56.0 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 30.7 seconds.

In the With-Action condition, the northbound left-through-right lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 214.1, 143.9, 322.2, and 360.6 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 120.7, 91.7, 181.0, and 218.6 seconds respectively.

In the With-Action condition, the southbound left-through-right lane group would operate at LOS E in the Saturday PM peak hour with 56.6 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 26.5 seconds.

Platinum Avenue at Marsh Avenue

The southbound left turn lane group on Marsh Avenue would be significantly adversely impacted in all peak hours.

In the With-Action condition, the southbound left turn lane group would operate at LOS E in the weekday and Saturday midday peak hours with 57.7 and 78.4 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 13.4 and 30.9 seconds respectively. The southbound left turn lane group would operate at LOS F in the weekday and Saturday PM peak hours with 86.3 and 89.2 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 34.1 and 41.1 seconds respectively.

Staten Island Mall East Driveway at Marsh Avenue

The eastbound left turn lane group on the Staten Island Mall East Driveway would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

In the With-Action condition, the eastbound left turn lane group would operate at LOS D in the weekday PM peak hour with 31.8 seconds of delay, while the increase in delay compared to the No-Action condition would total 11.7 seconds. The eastbound left turn lane group would operate at LOS F in the Saturday midday and PM peak hours with 55.8 and 101.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 31.5 and 71.2 seconds respectively.

Staten Island Mall Northeast Driveway at Marsh Avenue

The eastbound left turn lane group on the Staten Island Mall East Driveway would be significantly adversely impacted in the Saturday PM peak hour.

In the With-Action condition, the eastbound left turn lane group would operate at LOS D in the Saturday PM peak hour with 45.9 seconds of delay, while the increase in delay compared to the No-Action condition would total 15.6 seconds.

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Staten Island Expressway Eastbound Off-Ramp, West Caswell Avenue, and Goethals Road North at Richmond Avenue

The southbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday peak hours.

In the With-Action condition, the southbound through-right lane group would operate at LOS D in the weekday PM peak hour with 48.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 8.2 seconds. The southbound through-right lane group would operate at LOS E in the Saturday midday peak hour with 74.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 20.3 seconds.

Victory Boulevard at Richmond Avenue

The westbound left turn lane group on Victory Boulevard would be significantly adversely impacted in all peak hours. The northbound through lane group on Richmond Avenue would be significantly adversely impacted in the Saturday midday and PM peak hours. The southbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the Saturday midday peak hour.

In the With-Action condition, the westbound left turn lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 133.1, 221.2, 174.3, and 175.4 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 37.2, 44.2, 56.9, and 55.5 seconds respectively.

In the With-Action condition, the northbound through lane group would operate at LOS E in the Saturday midday and PM peak hours with 59.5 and 60.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 14.1 and 15.6 seconds respectively.

In the With-Action condition, the southbound through-right lane group would operate at LOS E in the Saturday midday peak hour with 65.8 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 19.7 seconds.

Signs Road at Richmond Avenue

The eastbound left-right lane group on Signs Road and the northbound left turn lane group on Richmond Avenue would be significantly adversely impacted in all peak hours. The southbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday peak hours.

In the With-Action condition, the eastbound left-right lane group would operate at LOS F in the weekday midday and PM and Saturday midday peak hours with 114.7, 116.8, and 127.6 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 17.5, 20.6, and 29.2 seconds respectively. The eastbound left-right lane group would operate at LOS E in the Saturday PM peak hour with 56.0 seconds of delay, while the increase in delay compared to the No-Action condition would total 8.7 seconds.

In the With-Action condition, the northbound left turn lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 87.4, 113.9, 87.5, and 106.6 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 12.3, 19.5, 17.3, and 26.5 seconds respectively.

In the With-Action condition, the southbound through-right lane group would operate at LOS F in the weekday PM and Saturday midday peak hours with 113.8 and 97.1 seconds of delay,

while the increase in delay compared to the No-Action condition would total would total 35.6 and 42.2 seconds respectively.

Draper Place at Richmond Avenue

The northbound left turn lane group on Richmond Avenue would be significantly adversely impacted in all peak hours. The southbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the Saturday midday and PM peak hours.

In the With-Action condition, the northbound left turn lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 134.9, 130.6, 134.0, and 139.2 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 22.7, 27.8, 28.6, and 37.1 seconds respectively.

In the With-Action condition, the southbound through-right lane group would operate at LOS F in the Saturday midday peak hour with 120.2 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 55.5 seconds. The southbound through-right lane group would operate at LOS D in the Saturday PM peak hour with 54.0 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 20.8 seconds.

Nome Avenue at Richmond Avenue

The westbound left-right lane group on Nome Avenue would be significantly adversely impacted in all peak hours. The northbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

In the With-Action condition, the westbound left-right lane group would operate at LOS E in the weekday midday and Saturday PM peak hours with 56.2 and 64.1 seconds of delay respectively, while the increase in delay compared to the No-Action condition would total would total 6.9 and 12.7 seconds respectively. The westbound left-right lane group would operate at LOS D in the weekday PM peak hour with 52.4 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 6.5 seconds. The westbound left-right lane group would operate at LOS F in the Saturday midday peak hour with 125.6 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 37.0 seconds.

In the With-Action condition, the northbound through-right lane group would operate at LOS D in the weekday PM and Saturday midday peak hours with 50.8 and 48.1 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 16.3 and 17.6 seconds respectively. The northbound through-right lane group would operate at LOS E in the Saturday PM peak hour with 67.6 seconds of delay, while the increase in delay compared to the No-Action condition would total would total 33.2 seconds.

Drumgoole Road West at Richmond Avenue

The eastbound left lane group on Drumgoole Road West and the northbound through lane group on Richmond Avenue would be significantly adversely impacted in the Saturday midday peak hour. The eastbound left-right lane group on Drumgoole Road West would be significantly adversely impacted in the Saturday midday and PM peak hours. The southbound through lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

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In the With-Action condition, the eastbound left turn lane group would operate at LOS F in the Saturday midday peak hour with 86.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 50.9 seconds.

In the With-Action condition, the eastbound left-right lane group would operate at LOS F in the Saturday midday peak hour with 114.2 seconds of delay, while the increase in delay compared to the No-Action condition would total 65.7 seconds. The eastbound left-right lane group would operate at LOS E in the Saturday PM peak hour with 63.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 31.2 seconds.

In the With-Action condition, the northbound through lane group would operate at LOS D in the Saturday midday peak hour with 51.7 seconds of delay, while the increase in delay compared to the No-Action condition would total 18.6 seconds.

In the With-Action condition, the southbound through lane group would operate at LOS D in the weekday PM and Saturday midday and PM peak hours with 48.5, 54.1, and 45.6 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 15.7, 21.2, and 16.2 seconds respectively.

Arthur Kill Road at Richmond Avenue

The northbound through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours. The southbound left turn lane group on Richmond Avenue would be significantly adversely impacted in all peak hours.

In the With-Action condition, the northbound through-right group would operate at LOS F in the weekday PM and Saturday midday peak hours with 92.4 and 118.8 seconds of delay respectively, while the increase in delay compared to the No-Action condition would total 30.9 and 41.7 seconds respectively. The northbound through-right lane group would operate at LOS E in the Saturday PM peak hour with 62.1 seconds of delay, while the increase in delay compared to the No-Action condition would total 22.2 seconds.

In the With-Action condition, the southbound left turn lane group would operate at LOS F in the weekday midday and PM and Saturday midday peak hours with 89.0, 100.6, and 115.3 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 13.8, 17.2, and 19.4 seconds respectively. The southbound left turn lane group would operate at LOS E in the Saturday PM peak hour with 77.6 seconds of delay, while the increase in delay compared to the No-Action condition would total 17.5 seconds.

Katan Avenue at Richmond Avenue

The southbound left-through-right lane group on Richmond Avenue would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

In the With-Action condition, the southbound left-through-right lane group would operate at LOS D in the weekday PM peak hour with 45.2 seconds of delay, while the increase in delay compared to the No-Action condition would total 18.3 seconds. The southbound left-through-right lane group would operate at LOS E in the Saturday midday and PM peak hours with 57.3 and 73.7 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 27.9 and 41.6 seconds respectively.

Richmond Road at Arthur Kill Road and Richmond Hill Road

The westbound left-right lane group on Richmond Road would be significantly adversely impacted in the weekday PM and Saturday midday and PM peak hours.

In the With-Action condition, the westbound left-right lane group would operate at LOS F in the weekday PM and Saturday midday and PM peak hours with 85.6, 87.2, and 96.2 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 42.6, 48.8, and 54.7 seconds respectively.

Clarke Avenue at Arthur Kill Road

The westbound left-right lane group on Clarke Avenue and the northbound through lane group on Arthur Kill Road would be significantly adversely impacted in the weekday PM peak hour.

In the With-Action condition, the westbound left-right lane group would operate at LOS D in the weekday PM peak hour with 54.3 seconds of delay, while the increase in delay compared to the No-Action condition would total 8.1 seconds.

In the With-Action condition, the northbound through lane group would operate at LOS D in the weekday PM peak hour with 51.5 seconds of delay, while the increase in delay compared to the No-Action condition would total 9.6 seconds.

Arthur Kill Road at Corbin Avenue

The northbound left-right lane group on Corbin Avenue would be significantly adversely impacted in all peak hours.

In the With-Action condition, the northbound left-right lane group would operate at LOS F in the weekday midday and PM and Saturday PM peak hours with 60.1, 88.7, and 55.5 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 9.6, 20.1, and 14.6 seconds respectively. The northbound left-right lane group would operate at LOS E in the Saturday midday peak hour with 49.2 seconds of delay, while the increase in delay compared to the No-Action condition would total 9.8 seconds.

Arthur Kill Road at Drumgoole Road West

The eastbound left turn lane group on Arthur Kill Road would be significantly adversely impacted in the Saturday midday peak hour. The southbound left-through-right lane group on Drumgoole Road West would be significantly adversely impacted in all peak hours.

In the With-Action condition, the eastbound left turn lane group would operate at LOS D in the Saturday midday peak hour with 53.8 seconds of delay, while the increase in delay compared to the No-Action condition would total 28.0 seconds.

In the With-Action condition, the southbound left-through-right lane group would operate at LOS E in the weekday midday peak hour with 66.3 seconds of delay, while the increase in delay compared to the No-Action condition would total 33.0 seconds. The southbound left-through-right lane group would operate at LOS F in the weekday PM and Saturday midday and PM peak hours with 135.6, 198.5, and 193.2 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 52.0, 107.6, and 102.1 seconds respectively.

Arthur Kill Road at Woodrow Road

The westbound left-through lane group on Arthur Kill Road would be significantly adversely impacted in the weekday and Saturday PM peak hours.

In the With-Action condition, the westbound left-through lane group would operate at LOS F in the weekday and Saturday PM peak hours with 209.1 and 175.5 seconds of delay respectively, while the increase in delay compared to the No-Action condition would total would total 98.3 and 136.4 seconds respectively.

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Rockland Avenue at Forest Hill Road

The eastbound left turn lane group on Rockland Avenue would be significantly adversely impacted in the weekday midday peak hour. The westbound left turn lane group on Rockland Avenue would be significantly adversely impacted in the weekday and Saturday midday and Saturday PM peak hours. The westbound through-right lane group on Rockland Avenue would be significantly adversely impacted in the weekday PM peak hour. The northbound through-right lane group on Forest Hill Road would be significantly adversely impacted in all peak hours.

In the With-Action condition, the eastbound left turn lane group would operate at LOS F in the weekday midday peak hour with 85.6 seconds of delay, while the increase in delay compared to the No-Action condition would total 4.2 seconds.

In the With-Action condition, the westbound left turn lane group would operate at LOS E in the weekday midday and Saturday PM peak hours with 56.9 and 57.2 seconds of delay respectively, while the increase in delay compared to the No-Action condition would total would total 15.1 and 18.8 seconds respectively. The westbound left turn lane group would operate at LOS F in the Saturday midday peak hour with 86.7 seconds of delay, while the increase in delay compared to the No-Action condition would total 35.2 seconds.

In the With-Action condition, the westbound through-right lane group would operate at LOS E in the weekday midday peak hour with 59.9 seconds of delay, while the increase in delay compared to the No-Action condition would total 4.7 seconds.

In the With-Action condition, the northbound through-right lane group would operate at LOS F in the weekday midday and PM and Saturday midday and PM peak hours with 130.2, 127.7, 149.2, and 154.4 seconds of delay respectively, while increases in delay compared to the No-Action condition would total 28.6, 32.7, 40.7, and 46.5 seconds respectively.

Rockland Avenue at Brielle Avenue

The eastbound left turn lane group on Rockland Avenue would be significantly adversely impacted in the Saturday midday peak hour. The westbound left-through-right lane group would be significantly adversely impacted in the Saturday midday peak hour. The southbound left-through-right lane group on Brielle Avenue would be significantly adversely impacted in the weekday PM peak hour.

In the With-Action condition, the eastbound left turn lane group would operate at LOS D in the Saturday midday peak hour with 51.3 seconds of delay, while the increase in delay compared to the No-Action condition would total 15.3 seconds.

In the With-Action condition, the westbound left-through-right lane group would operate at LOS D in the Saturday midday peak hour with 45.3 seconds of delay, while the increase in delay compared to the No-Action condition would total 6.0 seconds.

In the With-Action condition, the southbound left-through-right lane group would operate at LOS E in the weekday PM peak hour with 70.9 seconds of delay, while the increase in delay compared to the No-Action condition would total 13.2 seconds.

Richmond Road at Wilder Avenue

The westbound left-through lane group on Richmond Road would be significantly adversely impacted in the weekday PM peak hour.

In the With-Action condition, the westbound left-through lane group would operate at LOS F in the weekday PM peak hour with 123.0 seconds of delay, while the increase in delay compared to the No-Action condition would total 50.2 seconds.

Forest Avenue at Richmond Avenue and Morningstar Road

The southbound left-through-right lane group on Morningstar Road would be significantly adversely impacted in all peak hours.

In the With-Action condition, the southbound left-through-right lane group would operate at LOS D in the weekday midday peak hour with 49.0 seconds of delay, while the increase in delay compared to the No-Action condition would total 5.6 seconds. The southbound left-through-right lane group would operate at LOS F in the weekday and Saturday PM peak hours with 83.8 and 89.5 seconds of delay respectively, while the increase in delay compared to the No-Action condition would total 19.5 and 31.3 seconds respectively. The westbound left turn lane group would operate at LOS E in the Saturday midday peak hour with 62.4 seconds of delay, while the increase in delay compared to the No-Action condition would total 15.4 seconds.

Potential measures to mitigate these significant adverse traffic impacts are discussed in Chapter 18, "Mitigation."

G. PEDESTRIAN AND VEHICULAR SAFETY EVALUATION

Under 2014 CEQR Technical Manual guidelines, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high accident locations. These are defined as locations where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes have occurred in any consecutive 12 months of the most recent three-year period for which data are available. (Reportable accidents are defined as those involving injuries, fatalities, and/or \$1,000 or more in property damage.)

Table 10-18 shows summary accident data for the years 2010 through 2012 that were obtained from DOT. This is the most recent three-year period for which data are available. The table shows the total number of crashes each year, the total number of crashes involving injury each year, and the numbers of crashes each year involving pedestrians and cyclists at intersections in proximity to the Mall where the majority of new vehicular and pedestrian trips would be concentrated. As shown in **Table 10-18**, no intersections were found to have experienced a total of 48 or more crashes in any one year, the threshold for high accident location for vehicles. The maximum number of crashes at a single intersection in a single year was 22, which occurred in three separate places: in 2010 at the intersection of Richmond Hill Road and Richmond Avenue, in 2012 at Arthur Kill Road and Richmond Avenue, and in 2010 at Richmond Road, Arthur Kill Road, and Richmond Hill Road. However, there are two intersections that experienced five or more pedestrian and/or bicyclist injury crashes in one or more years and are therefore considered high accident locations:

- Signs Road at Richmond Avenue experienced five pedestrian and no bicycle crashes in 2012;
- Forest Avenue at Richmond Avenue-Morningstar Road experienced 10 pedestrian and no bicycle crashes in 2012.

At all other locations in the study area, the number of pedestrian/bicyclist injury crashes per year totaled four or fewer during the 2010 through 2012 period.

Table 10-18

Summary of Motor Vehicle Accident Data, 2010-2012

| Intersection | | Pedestrian Injury Accidents | | | Cyclist Injury Accidents | | | Total Pedestrian/Cyclist Injury Accidents | | | Total Accidents (Reportable + Non-Reportable) | | |
|------------------------------|-------------------------------------|-----------------------------|------|------|--------------------------|------|------|---|------|------|---|------|------|
| East-West Roadway | North-South Roadway | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Richmond Hill Road | Richmond Avenue | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 22 | 11 | 13 |
| SI Mall NW Driveway | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SI Mall Main Entrance | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Platinum Avenue | | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 14 | 8 | 12 |
| Forest Hill Road | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 5 | 19 |
| Richmond Hill Road | SI Mall N Driveway | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 4 |
| | Marsh Avenue | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 1 |
| | Forest Hill Road | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 15 | 5 |
| Platinum Avenue | SI Mall SW Driveway | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| | Staten Island Mall Drive | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| | Marsh Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| | Forest Hill Road | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 |
| SI Mall E Driveway | Marsh Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SI Mall NE Driveway | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Staten Island Mall Drive | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| Goethals Rd North | Richmond Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 10 |
| Christopher-Lamberts Lanes | | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 10 | 5 | 2 |
| Merrill Avenue-Morani Street | | 1 | 1 | 3 | 0 | 0 | 1 | 1 | 1 | 4 | 6 | 5 | 8 |
| Victory Boulevard | | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 14 | 15 |
| Signs Road | | 1 | 2 | 5 | 0 | 0 | 0 | 1 | 2 | 5 | 15 | 6 | 11 |
| Rockland Avenue | | 2 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 3 | 7 | 7 | 14 |
| Draper Place | | 2 | 2 | 1 | 0 | 0 | 0 | 2 | 2 | 1 | 13 | 15 | 14 |
| Nome Avenue | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 6 |
| Drumgoole Road West | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 5 | 9 |
| Arthur Kill Road | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 21 | 16 | 22 |
| Barlow Avenue | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 |
| Katan Avenue | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 5 |
| Richmond Road | Arthur Kill Road-Richmond Hill Road | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 11 | 8 |
| Clarke Avenue | Arthur Kill Road | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 8 | 6 |
| Arthur Kill Road | Corbin Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| | Drumgoole Road West | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 10 |
| | Woodrow Road | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 5 |
| Victory Boulevard | South Gannon Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 1 |
| | North Gannon Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 1 |
| Rockland Avenue | Forest Hill Road | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 7 | 7 |
| | Brielle Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 2 |
| Richmond Road | Wilder Avenue | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 |
| Forest Avenue | Richmond Avenue-Morningstar Road | 1 | 3 | 10 | 0 | 1 | 0 | 1 | 4 | 10 | 10 | 12 | 21 |

It should be noted that these high-accident locations are not immediately adjacent to the Mall where project-generated pedestrian trips would be most concentrated. As discussed earlier the proposed project would generate a very low number of pedestrian trips and therefore very few new pedestrians are anticipated at these locations. Under Existing conditions, 4,160 and 4,505 vph use the intersection of Signs Road at Richmond Avenue during the weekday PM and Saturday midday peak hours, respectively, and 2,705 and 2,750 vph use the intersection of Forest Avenue at Richmond Avenue-Morningstar Road during the weekday PM and Saturday midday peak hours, respectively. Pedestrian volume would typically be highest in the weekday commuting peaks, including the weekday PM peak hour.

With net project-generated vehicle trips of 334 and 436 vph during the weekday PM and Saturday midday peak hours, respectively, the vehicular traffic volumes at the intersection of Signs Road at Richmond Avenue would only increase by 8 percent and 10 percent, respectively. With net project-generated vehicle trips of 53 and 70 vph during the weekday PM and Saturday midday peak hours, respectively, the vehicular traffic volumes at the intersection of Forest Avenue at Richmond Avenue-Morningstar Road would only increase 2 percent and 3 percent, respectively. Furthermore, it should be noted that crashes involving pedestrians often involve conflicts with turning vehicles. It is therefore important to note that, out of the 334 and 436 project-generated vehicle trips per hour at the intersection of Signs Road at Richmond Avenue, only 31 and 40 vph are turning movements during the weekday PM and Saturday midday peak hours, respectively, as shown in **Figures 10-11b and 10-12b**. There would be no project-generated turning vehicles at the intersection of Forest Avenue at Richmond Avenue-Morningstar Road.

Additionally, in both 2010 and in 2011 the number of pedestrian/bicyclist injury crashes was lower at both intersections than in 2012. The average of 2.7 and 4.7 pedestrian/bicyclist injury crashes per year at the intersections of Signs Road at Richmond Avenue and Forest Avenue at Richmond Avenue-Morningstar Road, respectively, over the course of the three analyzed years also indicates that these intersections are typically safe locations for pedestrians and bicyclists.

Although the intersection of Signs Road at Richmond Avenue is equipped with marked crosswalks and pedestrian signals at all four pedestrian crossings, pedestrian and bicyclist safety could potentially be improved by striping high visibility crosswalks ~~and installing reminder signs for turning vehicles to yield to pedestrians. The reminder signs also could be added at the intersection of Forest Avenue at Richmond Avenue-Morningstar Road, especially since At Forest Avenue at Richmond Avenue-Morningstar Road, three of the four crosswalks are already~~ striped as school crosswalks. *