

III.H Traffic and Transportation

I. Former Project

The Former Project consisted of demolishing the existing hospital on the property to construct a three-story building with two levels of parking below. The building proposed a total of 188 apartments of which 19 were affordable rental units. The Former Project included amenities for the residents such as a swimming pool, fitness center, yoga studio, and club room.

A traffic study was prepared for the Former Project. Traffic counts were conducted at the nine intersections listed below as part of the traffic study on a weekday between 6:00-10:0 AM and 3:00-7:00 PM as well as on a Saturday between 9:00 AM and 1:00 PM.

- Dale Avenue & Pine Avenue
- Croton Dam Road & Hawkes Avenue
- Croton Dam Road & Pershing Avenue with Cherry Hill Circle
- Croton Dam Road & Site Driveway
- Croton Dam Road & Grandview Avenue
- Croton Dam Road & Narragansett Avenue
- Croton Dam Road & Pheasant Ridge Road with Feeney Road
- Croton Dam Road & Kitchawan State Road
- Croton Dam Road & NY 9A

The traffic counts were analyzed to determine the three peak hours: peak weekday AM hour, peak weekday PM hour, and peak Saturday midday hour. These counted peak hour volumes represented existing traffic volumes. The existing traffic volumes were projected to future conditions with and without the project.

Future conditions without the Former Project also known as No-Build included general growth volumes to the design year of the project, other planned or approved development volumes and reoccupied volumes associated with the former hospital use. Based on discussions with the Town and Village, the traffic volumes associated with the Parth Knolls, LLC residential development located at 87 Hawkes Avenue, Sunshine Children's Home & Rehabilitation Center in New Castle, Upper Westchester Muslim Society development in New Castle, and Hudson Ridge Wellness Center development in Cortlandt were considered in the traffic study. The No-Build condition also included the traffic volumes associated with the reoccupancy of the former hospital use. These hospital traffic volumes were based on 2006 turning movement count data (the record 2006 hospital traffic volumes are contained in Volume 3).

Future conditions with the Former Project also known as Build resulted from the no-build traffic volumes plus the site generated traffic volumes minus the reoccupied hospital traffic volumes. Traffic volumes for the Former Project were calculated based on data published by the Institute of Transportation Engineers (ITE). The Former Project also proposed to provide a jitney service to transport residents to and from the train station. The Former Project was projected to result in approximately 32, 43, and 24 net additional total volumes during the peak weekday AM, weekday PM, and Saturday midday hours, respectively, compared to the former hospital use.

The Former Project resulted in a few level of service changes during the studied peak hours. During the peak weekday AM hour, the site driveway was projected to increase in delay by 0.5 seconds from a level of service A under no-build conditions to a level of service B under build conditions. At the signalized intersection of NY 9A and Croton Dam Road, the westbound approach was projected to increase in delay by 0.7 seconds from a level of service B under no-build conditions to a level of service C under build conditions during the peak weekday AM hour.

During the peak weekday PM hour, the site driveway was projected to increase in delay by 0.7 seconds from a level of service A under no-build conditions to a level of service B under build conditions. The Grandview Avenue approach to Croton Dam Road was projected to increase in delay by 0.2 seconds from a level of service A under no-build conditions to a level of service B under build conditions. At the signalized intersection of NY 9A and Croton Dam Road, the eastbound approach was projected to increase in delay by 1.5 seconds from a level of service B under no-build conditions to a level of service C under build conditions during the peak weekday PM hour.

During the peak Saturday midday hour, the Pershing Avenue approach to its intersection with Croton Dam Road was projected to increase in delay by 0.3 seconds from a level of service A under no-build conditions to a level of service B under build conditions. The overall intersection of NY 9A and Croton Dam Road was projected to increase in delay by 16.6 seconds from a level of service C under no-build conditions to a level of service D under build conditions. The westbound left turn lane at the intersection of NY 9A & Croton Dam Road was projected to decrease in delay by 33.9 seconds from a level of service F under no-build conditions to a level of service E under build conditions.

As part of the Former Project, the Applicant proposed improvements at the intersection of NY 9A & Croton Dam Road. The improvements consisted of constructing right turn lanes on both Croton Dam Road approaches to NY 9A. Additionally, it recommended that the existing 150 second traffic signal cycle length be reduced to 110 seconds. This cycle change would reduce the delay experienced by vehicles due to the current long cycle length. With the proposed improvements, the overall intersection delay was projected to decrease under build conditions compared to no-build conditions.

The traffic study also contained a queuing analysis of the studied intersections. Based on the queuing analysis, the available storage length can accommodate the projected queue lengths for all approaches at the studied intersections, except for the eastbound

left turn lane northbound approach at the intersection of NY 9A & Croton Dam Road. These particular movements exceed the available queue length under existing conditions. With the proposed improvements to this intersection, the queue lengths are projected to reduce compared to the no-build condition.

In addition to the traffic study, the Former Project reviewed the accident data within the study area when the former hospital was in operation and when it was closed. The data was tabulated and depicted in tables within the traffic study and compared to statewide averages.

A sight distance analysis was also conducted for the Former Project at the proposed site driveway. The analysis was based on the 85th percentile speed from a speed study that was conducted along the site's frontage along Croton Dam Road. Based on the analysis and relocation of decorative walls along the site's frontage, the desirable intersection sight distances were accommodated for the 85th percentile speed.

The DEIS for the Former Project also discussed the construction impacts as well as the potential impacts on public transportation. Based on the proposed grading plan of the Former Project there would have been approximately 2,500 cubic yards of export (approximately 125 trucks). The majority of the construction truck traffic was anticipated to utilize Route 9A to Croton Dam Road to access the property. There is no available public transportation in the vicinity of the property which also lead to the decision to provide a jitney service to and from the train station for the Former Project. There were no existing school bus stops in the vicinity of the property; however, a new bus stop along an existing bus route was to be coordinated with the school district for the Former Project. Based on the traffic counts in the study area, there was not a significant amount of bicycle or pedestrian traffic at the studied intersections.

2. Proposed Project

The Proposed Project will have a reduced peak hour traffic volumes to the Former Project. This chapter discusses the peak hour traffic volumes as well as the potential for adverse impacts that may occur as a result of the construction of the Proposed Project.

i. Updated Traffic Study

The previously completed Traffic Study for the property has been updated to reflect the currently proposed redevelopment ([Appendix D SDEIS Volume 3](#)). The study includes and continues to analyze the 8 previously studied intersections along Croton Dam Road and the intersection of Dale Avenue & Pine Avenue.

The existing peak hour volumes for the studied intersections were counted prior to the pandemic and reflect typical traffic conditions. The existing peak hour volumes were increased by an annual growth rate to the design year 2025. The general growth volumes plus the traffic volumes from the Parth Knolls, LLC residential development and the re-occupancy of the former hospital use represent 2025 no-build volumes. The no-build volumes represent future traffic volumes in 2025 without the proposed redevelopment.

Traffic volumes for the proposed redevelopment were projected based on Institute of Transportation Engineers' data. The no-build volumes plus the proposed redevelopment's traffic minus the reoccupied hospital volumes results in 2025 build volumes. The build volumes represent future traffic volumes in 2025 with the completion and occupancy of the proposed redevelopment.

The intersections have been analyzed based on the methodologies of the Highway Capacity Manual 6th Edition for all the studied peak hours during the existing, no-build and build conditions. Intersection capacity analysis computed

based on the Build Volumes indicate that the intersections will operate at the same or better levels of service as projected for the No-Build Volumes except for one turning movement during the peak Saturday midday hour. The minor delay increase which results in level of service degradation during the peak Saturday midday hour occurs at the Pershing Avenue approach to its intersection with Croton Dam Road.

When the proposed redevelopment's traffic is compared to the other traffic volumes at the intersection of NY 9A & Croton Dam Road, the proposed redevelopment's traffic represents less than 0.6% of the traffic at the intersection. The proposed redevelopment's traffic represents 0.24%, 0.36%, and 0.58% of the overall intersection volumes at the NY 9A and Croton Dam Road under build conditions during the peak weekday AM, weekday PM, and Saturday midday hours, respectively.

ii. Former Project and Proposed Project Comparison

The Former Project was projected to generate approximately 83, 103 and 84 trips during the peak weekday AM, weekday PM, and Saturday midday hours, respectively, including the jitney bus trips. Based on Table I of the former project's traffic study, the redevelopment resulted in 32, 43, and 24 net additional trips during the peak weekday AM, weekday PM, and Saturday midday hours, respectively, compared to the reoccupied hospital volumes.

The currently proposed age-restricted redevelopment is projected to generate approximately 19, 25, and 32 trips during the peak weekday AM, weekday PM, and Saturday midday hours, respectively. When compared to the reoccupied hospital volumes, the currently proposed project represents a reduction in traffic volumes during the studied peak hours. The proposed project results in a reduction of 32, 35, and 28 trips during the peak weekday AM, weekday PM, and Saturday midday hours, respectively, compared to the reoccupied hospital

volumes. These projected peak hour volumes for the age-restricted housing are relatively low compared to other residential uses.

We have performed capacity analyses for the studied intersections for a 2025 build year with the previously proposed development. The operations with the previously proposed development are depicted in Tables 2 thru 4 in the Traffic Study and also included at the end of this chapter. The previously proposed development generally has a greater impact at the studied intersections compared to the currently proposed development since the age-restricted development is a relatively low traffic generator.

During the peak weekday AM hour, there are two level of service degradations from the build conditions with the currently proposed development to the build conditions with the previously proposed development. The Grandview Avenue approach to Croton Dam Road is projected to operate at a level of service B with the previously proposed development compared to a level of service A with the currently proposed development. At the intersection of Croton Dam Road and NY 9A, the NY 9A westbound approach is projected to operate at a level of service C with the previously proposed development compared to a level of service B with the currently proposed development.

During the peak weekday PM hour, there are three level of service degradations from the build conditions with the currently proposed development to the build conditions with the previously proposed development. The site driveway approach to Croton Dam Road is projected to operate at a level of service B with the previously proposed development compared to a level of service A with the currently proposed development. The Grandview Avenue approach to Croton Dam Road is projected to operate at a level of service B with the previously proposed development compared to a level of service A with the currently proposed development. At the intersection of Croton Dam Road and NY 9A, the NY 9A eastbound approach is projected to operate at a level of

service C with the previously proposed development compared to a level of service B with the currently proposed development.

During the peak Saturday midday hour, there is one level of service degradation from the build conditions with the currently proposed development to the build conditions with the previously proposed development. The NY 9A eastbound left turn onto Croton Dam Road is projected to operate at a level of service E with the previously proposed development compared to a level of service D with the currently proposed development.

iii. Proposed Mitigation and Traffic Signal Warrants

As part of the proposed age-restricted redevelopment, the Applicant proposes to improve the existing driveway by widening the driveway width as well as relocating the existing decorative wall in the vicinity of the proposed site driveway. The relocation of the existing decorative wall will accommodate the intersection sight distances for vehicles exiting the site driveway and turning onto Croton Dam Road.

None of the currently unsignalized intersections in the study area are shown to operate at unacceptable levels of service under build conditions during the studied peak hours. Most of the movements at these intersections are projected to operate at a level of service B or better under build conditions. These levels of service typically would not warrant a review of the intersection being operated by a traffic signal.

iv. Intersection Sight Distance Analysis

Our office performed a sight distance analysis for the proposed vehicular site access along Croton Dam Road. A speed study was conducted for vehicles traveling along Croton Dam Road in the vicinity of the existing site access. The speed study data is included in the updated Traffic Study for the redevelopment.

The speed study collected data from 9/18/2015 to 9/27/2015 for both directions of travel along Croton Dam Road (160 feet north of the existing property access on Croton Dam Road). Based on the speed study, the 85th percentile speed for both directions along Croton Dam Road is 43 mph in the vicinity of the existing site access.

Utilizing the 85th percentile speed, our office calculated the desirable stopping and intersection sight distances based on AASHTO guidelines. The desirable stopping sight distance based on 43 mph is 335 feet in both directions along Croton Dam Road. For vehicles making a left turn (looking right) from the proposed site driveway, the desirable intersection sight distance based on 43 mph is 474 feet. For vehicles making a right turn (looking left) from the proposed site driveway, the desirable intersection sight distance based on 43 mph is 411 feet. The sight distances in plan and profile view are shown on Drawing SD-1 contained within the updated Traffic Study for the redevelopment.

The existing decorative walls adjacent to the existing site access are proposed to be relocated as part of the proposed redevelopment for the proposed site access to outside of the driver's intersection sight line. Based on the sight distance analysis and the relocation of the existing decorative walls outside of the sight line, the intersection sight distances based on 43 mph are accommodated for the proposed site driveway along Croton Dam Road.

v. Construction Traffic

The Proposed Project will have a similar timeline for its construction sequence as the former project, 18 to 21 months, and would take place at times conforming to the Town Code, specifically, between 8:00 am and 8:00 pm from Monday through Friday and occasionally between 9:00 am to 5:00 pm on Saturdays, Sundays, and Holidays. See Section III.K “Construction Impacts” for Table III.K-1, “Construction Phasing”, showing the estimated duration of each phase as well as the estimated number of employees by phase.

Construction of the Proposed Project will create construction-related traffic to and from the Project Site, including trips related to workers as well as delivery of materials and equipment. In addition, there will be truck traffic associated with removing construction debris and excavated materials from the Project Site. See Section III.K “Construction Impacts” for tables of total construction vehicle by vehicle type for each phase of construction.

Most construction-related trucking will utilize NY 9A from the south, and NY 9 to NY 9A from the north. Trucks will exit NY 9A at its intersection with NY 134 (Croton Dam Road) and proceed along NY 134 to the existing site entrance, which will continue to be used. Construction related traffic is not anticipated to have a significant impact on public transportation since there are no County Bee-Line routes or stops along the property’s Croton Dam Road frontage. Construction related traffic is not anticipated to have a significant impact on school bus routes or stops since the construction workers would generally arrive and depart of the property outside of the school bus traffic time periods. Construction traffic during the day would be limited to materials being delivered or exported as the construction workers would remain on the property during the daytime.

There is no County Bee-Line Route which travels along Croton Dam Road along the Project’s frontage. Since there are no nearby routes or stops for public transportation, there is not anticipated to be a significant impact from the proposed age-restricted community on public transportation.

Since the Project is proposed to be an age-restricted (55 or over) community, the project would not have school-aged children. Furthermore, there would be no impact or need for a school bus route or stop associated with the Project due to the lack of school-aged children in this community.

vi. **Potential Increase of Capacity at NY 9A and Croton Dam Road Intersection**

A potential way to increase capacity at the intersection of NY 9A & Croton Dam Road is to widen both Croton Dam Road approaches to the intersection and modify the traffic signal timing. These potential improvements were previously analyzed as part of the previous traffic study for the Former Project's market rate apartment development.

As previously mentioned, the projected peak hour volumes for the age-restricted housing are relatively low compared to other residential uses. When you compare the proposed redevelopment's traffic to the other traffic volumes at the intersection of NY 9A & Croton Dam Road, the proposed redevelopment's traffic represents less than 0.6% of the traffic at the intersection. The proposed redevelopment's traffic represents 0.24%, 0.36%, and 0.58% of the overall intersection volumes at the NY 9A and Croton Dam Road under build conditions during the peak weekday AM, weekday PM, and Saturday midday hours, respectively.

The potential improvements to increase capacity at the intersection of NY 9A & Croton Dam Road consist of widening both Croton Dam Road approaches to provide separate right turn lanes on the approaches. These two additional turn lanes would provide additional capacity to the intersection. In addition to the widening, the traffic signal timing would be modified. The existing traffic signal has a cycle length of 150 seconds and the improvement would be to reduce it to 110 seconds. This cycle length change would reduce the delay experienced by vehicles due to the current long cycle length. The combination of these potential improvements would improve traffic flow through the intersection.

As shown in the updated traffic study, there is no level of service degradation at the intersection of NY 9A and Croton Dam Road between the build and no-build conditions, so these potential improvements are not proposed as part of

this age-restricted redevelopment. These potential improvements could be pursued and coordinated between the New York State Department of Transportation (who have jurisdiction of this intersection and approaching roadways) and the Town to be implemented as part of a State improvement project.

Based on comments from the Town's traffic consultant, we have analyzed the intersection of Croton Dam Road and NY 9A with these potential improvements for the build condition with the currently and previously proposed developments. The operations with these potential improvements are shown on Tables 2 thru 4 in the Traffic Study. The currently proposed age-restricted development does not propose any improvements at this intersection and is only shown for reference. In general, the potential improvements provide an improved overall intersection delay and improved overall level of service compared to no-build conditions.

vii. Jitney Service

As part of the Former Project's proposal for the property, the Applicant proposed a jitney service to transport residents of the 188 apartment redevelopment to and from the nearest train station. The proposed shuttle volumes were depicted and included in the traffic volume figures contained in the previous traffic study. The proposed shuttle bus route anticipated that the bus would travel between the proposed redevelopment and the existing Croton-Harmon train station utilizing Route 9A. Based on U.S. Census Bureau data, approximately 20% of the Town's residents utilize public transportation and carpooling as means to travel to and from work which assisted in the Applicant's decision to provide a jitney service to and from the train station.

The currently proposed redevelopment consists of 95 units of age-restricted (55 or older) housing. Since the proposed redevelopment is age-restricted, many residents of these types of communities are retired and no longer work. Since

many residents are anticipated to be retired, there is less of a need to provide a jitney service for residents to and from the train station which is why the Applicant no longer proposes a jitney service with the currently proposed redevelopment. The updated traffic study for the currently proposed redevelopment no longer incorporates the jitney service volumes from the previous redevelopment.

viii. Potential Impact to Pedestrians and Bicyclists

As previously mentioned, the proposed age-restricted development is anticipated to generate 19, 25, and 32 trips during the peak weekday AM, weekday PM, and Saturday midday hours, respectively, based on ITE data. These projected peak hour volumes are relatively low compared to other residential uses. During the peak weekday AM hour, the projected number of trips equate to one trip every 3 minutes during the peak hour. During the peak weekday PM hour, the projected number of trips equate to one trip every 2.4 minutes during the peak hour. During the peak Saturday midday hour, the projected number of trips equate to one trip every 1.8 minutes during the peak hour.

Based on traffic counts which were performed at the intersections, there is not a significant number of pedestrians or bicyclists at the studied intersections during the studied peak hours. There were no bicyclists counted at the studied intersections during the peak weekday AM, weekday PM, or Saturday midday hours. During the peak weekday AM hour, there were a total of 23 pedestrians counted at the studied intersections with 12 of them counted at the intersection of Croton Dam Road & Hawkes Avenue. During the peak weekday PM hour, there were a total of 18 counted pedestrians at the studied intersections with 12 of them counted at the intersection of Dale Avenue & Pine Avenue. During the peak Saturday midday hour, there were a total of 10 counted pedestrians at the studied intersections with 5 of them counted at the intersection of Dale Avenue & Pine Avenue. There were no pedestrians counted during the studied peak hours at the Croton Dam Road's intersections with Kitchawan State Road

or NY 9A. As mentioned above, the proposed age-restricted development is anticipated to generate a low amount of traffic and is not anticipated to impact the small amount of peak hour pedestrians and bicyclists within the study area.

The Town of Ossining ~~Town Board adopted has adopted~~ a Complete Streets Policy ~~Resolution on March 23, 2021. which was reviewed by the Applicant.~~ “Complete Streets” is characterized as designing and operating the entire roadway with all users in mind, including for example sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crosswalks, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more. There is no singular design prescription for Complete Streets. Each one is unique and responds to its community context. The context and needs of users are different in rural, suburban, and urban communities, and streets will look different as a result, even when using a Complete Streets approach.

The Town of Ossining Complete Streets resolution notes that the purpose of the Complete Streets program will be to explore the potential to advance the Town’s adoption of Complete Streets practices by forming complementary recommendations. The Complete Streets program will coordinate the Town staff and boards with local non-profits and civic organizations, such as walking, biking and recreation clubs, local schools, health organizations, business groups, arts organizations, and other interested parties to study and review and update land-use policies and regulations as necessary and appropriate to incorporate Complete Streets. In other words, as expressed in the Resolution, the Town Board intends to achieve Complete Streets over time, project by project.

As such, the Town does not yet have specific policy guidelines for specific projects. Based on general principals, the Proposed Project will provide a bicycle rack at the proposed clubhouse as an amenity for residents of the community. Sidewalk is proposed from the proposed clubhouse to an adjacent proposed

surface parking lot. Because the development is age-restricted, it is anticipated to generate a low amount of traffic, and that as a result pedestrians and bicyclists could share the utilization of the 26 foot wide roads in the private development. The development's roads will provide sufficient lighting for usability via LED street lighting. There are no sidewalks, bike lanes or County Bee-Line bus stops along Croton Dam Road for which the Proposed Project would provide connectivity. However, the Project will provide an emergency access between the cul-de-sac and Narragansett Avenue on the northeasterly portion of the Site and another emergency access between the westerly site roadway and Croton Dam Road on the northwesterly portion of the Site. Both are 15 feet in width will be paved and have a bollard and chain assembly at either end to prevent non-emergency vehicular access. However, pedestrian and bicycle use would be anticipated. The northeasterly emergency access provides access to Veterans Memorial Park in the Village of Ossining.

~~The development proposes a clubhouse with a swimming pool and a bicycle rack as amenities for residents of the community. Sidewalk is proposed from the proposed clubhouse to an adjacent proposed surface parking lot. Since the development is an age-restricted development which is anticipated to generate a low amount of traffic, pedestrians and bicyclists could share the utilization of the 26 foot wide roads in the private development. The development's roads will provide sufficient lighting for usability via LED street lighting. There are no sidewalks, bike lanes or County Bee-Line bus stops along Croton Dam Road.~~

TABLE 2

INTERSECTION OPERATIONS-PEAK WEEKDAY AM HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2025 NO BUILD			2025 BUILD			2025 BUILD WITH PREVIOUSLY PROPOSED DEVELOPMENT		
			V/C ₁₆	DELAY ₁₆	LOS ₁₆	V/C ₂₅	DELAY ₂₅	LOS ₂₅	V/C ₂₅	DELAY ₂₅	LOS ₂₅	V/C ₂₅	DELAY ₂₅	LOS ₂₅
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.24	12.5	B	0.28	13.5	B	0.28	13.4	B	0.28	13.5	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	8.1	A	0.07	8.2	A	0.07	8.2	A	0.07	8.2	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.20	11.6	B	0.24	12.3	B	0.23	12.2	B	0.25	12.4	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.01	8.3	A	0.01	8.4	A	0.01	8.4	A	0.01	8.4	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.3	A	0.01	9.4	A	0.01	9.4	A	0.01	9.6	A
	WESTBOUND	LEFT/THRU /RIGHT	0.04	10.7	B	0.06	10.8	B	0.05	11.1	B	0.05	10.7	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.5	A	0.00	7.5	A	0.00	7.5	A	0.00	7.5	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	8.2	A	0.01	8.2	A	0.01	8.2	A	0.04	8.3	A
	INTERSECTION	COMPOSITE	-	-	-	-	-	-	-	-	-	-	-	-
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.03	9.8	A	0.02	9.8	A	0.04	9.7	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.02	7.7	A	0.00	7.6	A	0.01	7.6	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.01	9.8	A	0.01	10.0	B	0.01	9.9	A	0.01	10.1	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	8.7	A	0.00	8.8	A	0.00	8.8	A	0.00	8.9	A
6. Croton Dam Road & Narragansett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.06	9.3	A	0.07	9.5	A	0.07	9.4	A	0.07	9.6	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.10	7.9	A	0.11	8.1	A	0.11	8.0	A	0.12	8.1	A
7. Croton Dam Road & Pheasant Ridge Road /Feeney Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.03	11.0	B	0.04	11.6	B	0.03	11.4	B	0.04	11.7	B
	WESTBOUND	LEFT/THRU /RIGHT	0.04	11.6	B	0.05	12.3	B	0.04	12.1	B	0.05	12.5	B
	NORTHBOUND	LEFT/THRU /RIGHT	-	-	A	-	-	A	-	-	A	-	-	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	8.0	A	0.00	8.1	A	0.00	8.1	A	0.00	8.2	A
	INTERSECTION	COMPOSITE	-	-	-	-	-	-	-	-	-	-	-	-
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.18	11.7	B	0.24	13.0	B	0.23	12.7	B	0.24	13.0	B
	NORTHBOUND	LEFT/THRU	0.01	7.7	A	0.02	7.9	A	0.02	7.8	A	0.02	7.8	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.82	67.1	E	0.83	69.0	E	0.83	69.1	E	0.83	69.5	E
		THRU	0.92	25.7	C	0.99	37.8	D	0.99	38.0	D	0.99	39.1	D
		RIGHT	0.11	8.8	A	0.13	8.8	A	0.12	8.7	A	0.12	8.9	A
		COMPOSITE	-	27.1	C	-	37.9	D	-	38.2	D	-	39.2	D
	WESTBOUND	LEFT	0.90	210.9	F	0.94	199.4	F	0.95	195.7	F	0.98	173.1	F
		THRU/RIGHT	0.48	17.3	B	0.52	18.1	B	0.52	18.1	B	0.52	18.0	B
		COMPOSITE	-	18.3	B	-	19.3	B	-	19.5	B	-	20.0	C
	NORTHBOUND	LEFT/THRU /RIGHT	0.77	58.9	E	1.02	111.7	F	0.95	91.3	F	1.08	128.9	F
	SOUTHBOUND	LEFT/THRU /RIGHT	0.89	72.6	E	1.06	119.5	F	1.06	119.2	F	1.06	119.7	F
	INTERSECTION	COMPOSITE	-	30.9	C	-	45.6	D	-	44.2	D	-	48.0	D
	9a. Croton Dam Road & NY 9A (Signalized w/ Considered Improvements Which Were Part of the Previously Proposed Development)	LEFT	-	-	-	-	-	-	0.81	54.7	D	0.81	55.3	E
		THRU	-	-	-	-	-	-	0.98	30.1	C	0.98	32.5	C
		RIGHT	-	-	-	-	-	-	0.12	6.6	A	0.12	6.9	A
		COMPOSITE	-	-	-	-	-	-	-	30.3	C	-	32.5	C
		LEFT	-	N/A	-	-	N/A	-	0.93	172.4	F	0.99	165.1	F
		THRU/RIGHT	-	-	-	-	-	-	0.52	14.1	B	0.52	14.4	B
		COMPOSITE	-	-	-	-	-	-	-	15.3	B	-	16.3	B
		LEFT/THRU	-	-	-	-	-	-	0.70	48.5	D	0.75	51.8	D
		RIGHT	-	-	-	-	-	-	0.34	40.7	D	0.37	41.0	D
		COMPOSITE	-	-	-	-	-	-	-	46.3	D	-	48.7	D
		LEFT/THRU	-	-	-	-	-	-	0.54	42.9	D	0.54	43.0	D
		RIGHT	-	-	-	-	-	-	0.85	62.5	E	0.82	59.9	E
		COMPOSITE	-	-	-	-	-	-	-	53.9	D	-	52.4	D
	INTERSECTION	COMPOSITE	-	-	-	-	-	-	-	29.8	C	-	31.5	C

Notes:

- (1) V/C represents volume/capacity ratio
- (2) Delay is average seconds delay per vehicle
- (3) LOS represents level of service

TABLE 3

INTERSECTION OPERATIONS-PEAK WEEKDAY PM HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2025 NO BUILD			2025 BUILD			2025 BUILD WITH PREVIOUSLY PROPOSED DEVELOPMENT		
			V/C _(R)	DELAY _(R)	LOS _(R)	V/C _(R)	DELAY _(R)	LOS _(R)	V/C _(R)	DELAY _(R)	LOS _(R)	V/C _(R)	DELAY _(R)	LOS _(R)
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.20	11.3	B	0.23	11.9	B	0.23	11.9	B	0.23	12.0	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.03	7.9	A	0.04	8.0	A	0.04	8.0	A	0.04	8.0	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.18	11.0	B	0.22	11.6	B	0.21	11.6	B	0.22	11.6	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	-	-	A	-	-	A	-	-	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.2	A	0.01	9.3	A	0.01	9.3	A	0.01	9.4	A
	WESTBOUND	LEFT/THRU /RIGHT	0.03	10.3	B	0.04	10.4	B	0.03	10.6	B	0.04	10.6	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.4	A	0.00	7.5	A	0.00	7.5	A	0.00	7.5	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.5	A	0.01	7.5	A	0.01	7.5	A	0.02	7.6	A
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.06	9.5	A	0.02	9.6	A	0.06	10.1	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.00	7.5	A	0.01	7.5	A	0.04	7.6	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.01	9.7	A	0.01	10.0	B	0.01	9.9	A	0.01	10.1	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	7.4	A	0.00	7.5	A	0.00	7.5	A	0.00	7.5	A
6. Croton Dam Road & Narragansett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.12	9.3	A	0.14	9.6	A	0.13	9.5	A	0.14	9.6	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	7.6	A	0.07	7.7	A	0.06	7.6	A	0.07	7.7	A
7. Croton Dam Road & Pleasant Ridge Road /Fossey Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.02	11.4	B	0.02	12.2	B	0.02	12.0	B	0.03	12.6	B
	WESTBOUND	LEFT/THRU /RIGHT	0.04	11.1	B	0.04	11.8	B	0.04	11.5	B	0.05	11.9	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.6	A	0.00	7.7	A	0.00	7.7	A	0.00	7.8	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.9	A	0.01	8.1	A	0.01	8.0	A	0.01	8.0	A
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.11	11.7	B	0.14	12.8	B	0.14	12.6	B	0.15	13.2	B
	NORTHBOUND	LEFT/THRU	0.03	7.8	A	0.03	7.9	A	0.03	8.0	A	0.04	8.1	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.85	80.5	F	0.86	84.1	F	0.86	84.1	F	0.85	84.1	F
		THRU	0.45	10.8	B	0.49	11.2	B	0.50	11.7	B	0.51	13.1	B
		RIGHT	0.13	8.1	A	0.14	8.2	A	0.14	8.5	A	0.15	9.6	A
		COMPOSITE	-	17.9	B	-	18.6	B	-	19.0	B	-	20.2	C
	WESTBOUND	LEFT	0.84	142.2	F	0.84	139.3	F	0.80	111.4	F	0.76	87.1	F
		THRU/RIGHT	1.02	61.4	F	1.13	100.8	F	1.13	100.8	F	1.13	100.8	F
		COMPOSITE	-	61.6	E	-	100.2	F	-	100.1	F	-	99.7	F
	NORTHBOUND	LEFT/THRU /RIGHT	0.81	75.0	E	1.32	232.8	F	1.05	133.6	F	1.15	167.8	F
		COMPOSITE	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU /RIGHT	0.83	73.9	E	0.92	90.4	F	0.93	91.9	F	0.95	95.8	F
		COMPOSITE	-	-	-	-	-	-	-	-	-	-	-	-
	INTERSECTION	COMPOSITE	-	75.0	E	-	79.6	E	-	73.4	E	-	76.2	E
9a. Croton Dam Road & NY 9A (Signalized w/ Considered Improvements Which Were Part of the Previously Proposed Development)	EASTBOUND	LEFT							1.10	151.5	F	1.10	151.5	F
		THRU							0.49	8.3	A	0.50	9.3	A
		RIGHT							0.14	6.1	A	0.15	6.8	A
		COMPOSITE							-	23.3	C	-	24.1	C
	WESTBOUND	LEFT		N/A			N/A		0.82	99.3	F	0.77	71.7	E
		THRU/RIGHT							1.07	69.1	F	1.07	69.1	F
		COMPOSITE							-	68.8	E	-	68.6	E
	NORTHBOUND	LEFT/THRU							0.78	62.5	E	0.84	70.4	E
		RIGHT							0.28	45.0	D	0.29	45.2	D
		COMPOSITE							-	58.8	E	-	65.0	E
	SOUTHBOUND	LEFT/THRU							0.49	47.1	D	0.52	47.7	D
		RIGHT							0.94	95.0	F	0.94	95.0	F
		COMPOSITE							-	75.4	E	-	75.1	E
	INTERSECTION	COMPOSITE							-	53.0	D	-	53.6	D

Notes:

(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

(3) LOS represents level of service

TABLE 4

INTERSECTION OPERATIONS-PEAK SATURDAY MIDDAY HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2025 NO BUILD			2025 BUILD			2025 BUILD WITH PREVIOUSLY PROPOSED DEVELOPMENT		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.15	11.0	B	0.18	11.6	B	0.18	11.5	B	0.18	11.6	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.03	7.9	A	0.04	8.0	A	0.04	8.0	A	0.04	8.0	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.16	10.5	B	0.20	10.9	B	0.19	10.9	B	0.20	10.9	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	-	-	A	-	-	A	-	-	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.1	A	0.02	9.2	A	0.02	9.2	A	0.02	9.2	A
	WESTBOUND	LEFT/THRU /RIGHT	0.01	10.3	B	0.02	9.9	A	0.02	10.3	B	0.02	10.3	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	8.2	A	0.00	8.2	A	0.00	8.2	A	0.00	8.2	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	7.5	A	0.01	7.5	A	0.01	7.5	A	0.02	7.5	A
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.05	9.3	A	0.02	9.4	A	0.05	9.7	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.00	7.5	A	0.01	7.5	A	0.02	7.5	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.02	9.3	A	0.02	9.5	A	0.02	9.5	A	0.02	9.6	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	7.4	A	0.00	7.5	A	0.00	7.4	A	0.02	7.5	A
6. Croton Dam Road & Nanamagett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.10	9.1	A	0.11	9.4	A	0.01	9.2	A	0.11	9.3	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	7.6	A	0.06	7.7	A	0.06	7.6	A	0.06	7.7	A
7. Croton Dam Road & Pleasant Ridge Road /Feeney Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.02	11.4	B	0.03	12.1	B	0.03	12.0	B	0.03	12.3	B
	WESTBOUND	LEFT/THRU /RIGHT	0.01	9.6	A	0.02	9.9	A	0.02	9.8	A	0.02	9.9	A
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.9	A	0.00	8.0	A	0.00	8.0	A	0.00	8.1	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.6	A	0.01	7.7	A	0.01	7.6	A	0.01	7.7	A
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.12	11.3	B	0.16	12.2	B	0.16	12.1	B	0.17	12.4	B
	NORTHBOUND	LEFT/THRU	0.02	7.7	A	0.02	7.8	A	0.02	7.8	A	0.02	7.9	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.77	45.8	D	0.80	57.7	E	0.80	54.8	D	0.80	56.2	E
		THRU	0.46	11.2	B	0.49	13.8	B	0.49	13.3	B	0.50	14.2	B
		RIGHT	0.14	8.9	A	0.15	10.8	B	0.15	10.4	B	0.16	11.2	B
		COMPOSITE	-	14.4	B	-	17.8	B	-	17.1	B	-	18.1	B
	WESTBOUND	LEFT	0.76	97.4	F	0.79	113.1	F	0.82	91.8	F	0.79	79.0	E
		THRU/RIGHT	0.82	21.9	C	0.89	33.9	C	0.88	31.0	C	0.89	32.6	C
		COMPOSITE	-	22.4	C	-	34.5	C	-	31.9	C	-	33.5	C
	NORTHBOUND	LEFT/THRU /RIGHT	0.63	33.8	C	0.84	57.2	E	0.76	46.4	D	0.80	51.1	D
		LEFT/THRU /RIGHT	0.75	36.4	D	0.79	49.1	D	0.82	49.8	D	0.82	50.6	D
	INTERSECTION	COMPOSITE	-	21.6	C	-	31.5	C	-	29.2	C	-	30.8	C
10. Croton Dam Road & NY 9A (Signalized w/ Considered Improvements Which Were Part of the Previously Proposed Development)	EASTBOUND	LEFT							0.78	44.2	D	0.78	45.0	D
		THRU							0.47	9.3	A	0.48	10.0	A
		RIGHT							0.15	7.3	A	0.15	7.8	A
		COMPOSITE							-	12.6	B	-	13.2	B
	WESTBOUND	LEFT		N/A			N/A		0.84	86.1	F	0.81	71.8	E
		THRU/RIGHT							0.84	21.3	C	0.85	22.2	C
		COMPOSITE							-	22.2	C	-	23.1	C
	NORTHBOUND	LEFT/THRU							0.63	36.0	D	0.64	36.5	D
		RIGHT							0.31	32.4	C	0.31	32.5	C
		COMPOSITE							-	35.0	D	-	35.4	D
	SOUTHBOUND	LEFT/THRU							0.52	34.5	C	0.52	34.6	C
		RIGHT							0.70	37.2	D	0.66	36.6	D
		COMPOSITE							-	35.9	D	-	35.6	D
	INTERSECTION	COMPOSITE							-	20.9	C	-	21.6	C

Notes:

(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

(3) LOS represents level of service

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