Zoning for Context Sensitive Development

Enhanced EAF



MARCH 25, 2019

Proposed Local Law C - 2019
Re: Moratorium on Infill Housing

Village of Mamaroneck Planning Department
Gregory Cutler, AICP- Village Planner
Matthew da Silva- Assistant Village Planner

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Introduction

The proposed action will amend Chapter 342 by eliminating the infill housing provisions on the Boston Post Road and portions of Mamaroneck Avenue North, while retaining the infill housing provisions at existing FARs on Halstead Avenue, the TOD Overlay Zone, and the C-2 and require below market rate units. The proposed action is the result of a year-long study in relation to a moratorium on development involving the construction of three or more residential units and the subdivision of three or more residential parcels. The proposed zoning change is intended to:

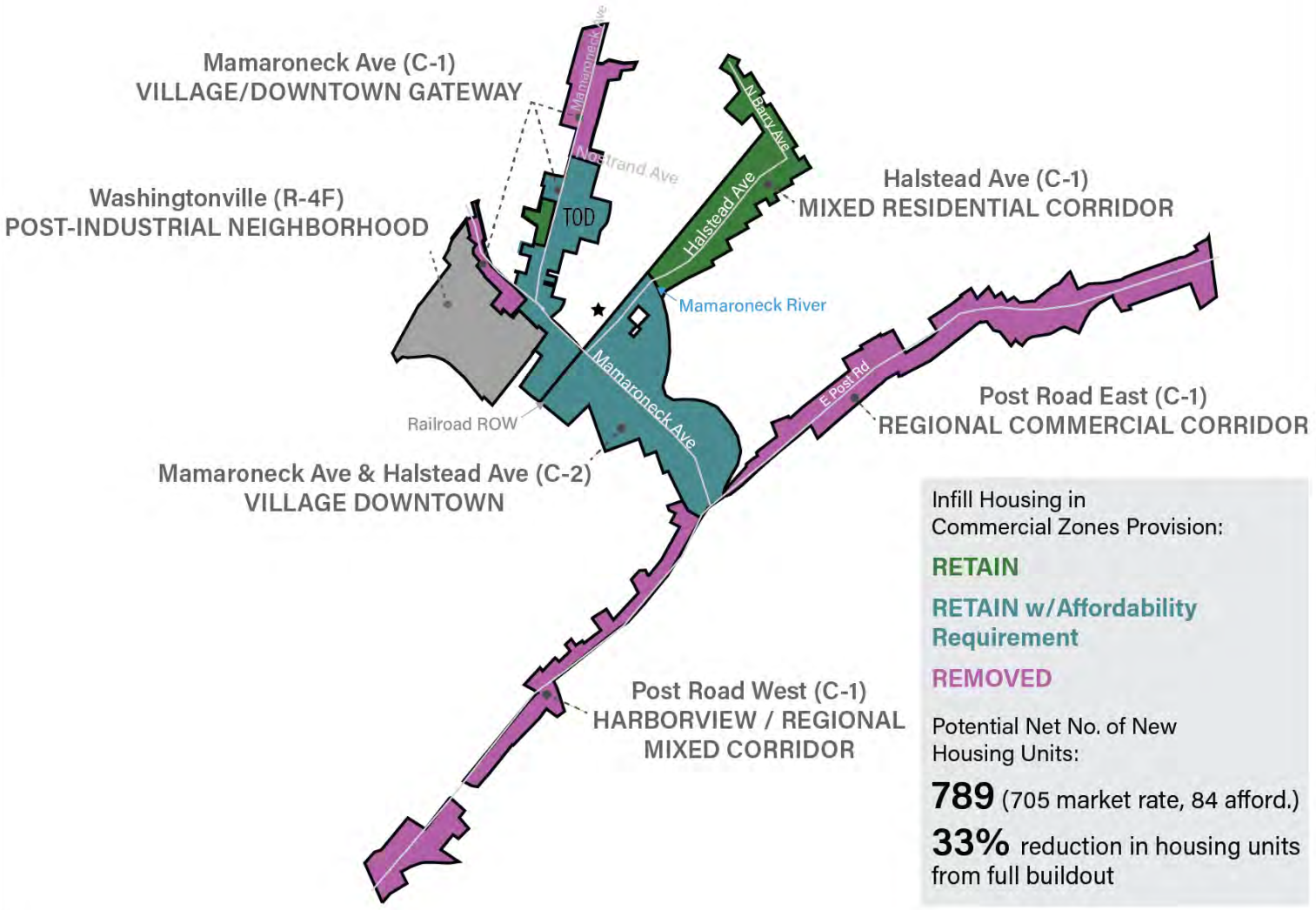
1) Alleviate concerns that development under the current zoning code will lead to excessive traffic and congestion, overtaxing of village infrastructure, and overcrowding in schools by reducing the overall residential development capacity in the commercial districts by approximately 33%; and
2) Expand the provision of affordable housing in the Village by requiring that 10% of units in any residential project with five or more units in the C-1, C-2, and TOD zones be reserved for below market rate units.

The moratorium study that supports the proposed zoning changes included a character analysis of the infill housing zones and an array of analysis that was based on a full build out scenario under the existing zoning including:

1) An analysis of fiscal impacts
2) Socioeconomic and housing impact analysis
3) Traffic study
4) Water, sewer & stormwater impact analysis

The proposed zoning amendments utilized the results of these analyses to determine appropriate changes to the zoning code to mitigate the anticipated impacts in each area of concern.

SCENARIO #1A
"Context-Sensitive Development w/Affordability Requirement"



Summary of Substantive Changes

C-1

Existing:	Proposed:
Eligible Areas: Anywhere in C-1 Zone	**Ineligible Areas:** C-1 district on Boston Post Road, on the southwestern side of Old White Plains Road northwest of Center Avenue and on Mamaroneck Avenue north of Nostrand Avenue.
• **FAR:** • 0.6 for market-rate Residential • 0.8 with BMR units (approved by Planning Board)	• **FAR:** • 0.6 for developments with four or less residential units • 0.8 for developments with five or more residential units. 10% of units are required to be BMR.

C-2

Existing:	Proposed:
• **FAR:** • 2.0 with no BMR requirement or mixed income bonus. • 2.5 with 100% of residential units BMR (approved by Planning Board).	• **FAR:** o 2.0 with 5 or more units. 10% of residential units required to be BMR. o 2.5 with 100% of residential units BMR (approved by Planning Board). o Residential developments with fewer than 5 units are not permitted.

TOD

Existing:	Proposed:
• **FAR:** o 0.6 for market-rate residential w/o incentives. o 0.8 with BMR bonus. o 1.5 inclusive of BMR bonus and other incentives. (.3 for a supermarket which is unlikely to be utilized, so functionally a 1.2 maximum).	• **FAR:** o 0.6 for developments with four or less residential units w/o incentives. o 0.8 with BMR bonus. o 1.5 inclusive of BMR bonus and other incentives. (.3 for a supermarket which is unlikely to be utilized, so functionally a 1.2 maximum).

BMR Requirements

Existing:	Proposed:
• **Period of Affordability (both C-1, C-2, and TOD):** o Owner-occupied-"In perpetuity" previously interpreted as 20 years. o Renter-occupied- code is silent but has been interpreted for as long as the site is used for residential purposes.	• **Period of Affordability (both C-1, C-2, and TOD):** o Owner-occupied-99 years. o Renter-occupied- so long as any portion of the site is used for residential purposes.
• **Other requirements:** o Aesthetic: code is silent. o Affirmative marketing: code is silent.	• **Other requirements:** o Aesthetic: units must not be distinguishable from the outside. o Affirmative marketing: in accordance with Westchester County Affirmative Marketing Plan.

Off-street Parking Requirements

Existing:	Proposed:
Multifamily dwelling: 1 space per dwelling unit, plus 1/2 space per bedroom; except that, in the C-2 District, it shall be 1 space per dwelling unit, plus 1/2 space per bedroom in excess of 1, and in the RM-3 District, it shall be 1 space per dwelling unit, plus 1/4 space per bedroom.	**Multifamily dwelling:** 1 space per dwelling unit, plus 1/2 space per bedroom; except that, in the C-2 District, it shall be 1 space per dwelling unit, plus 1/2 space per bedroom in excess of 1, and in the RM-3 District, it shall be 1 space per dwelling unit, plus 1/4 space per bedroom. Below-market-rate dwelling units shall be calculated at 3/4 space per dwelling unit plus 1/4 space per bedroom in excess of one.

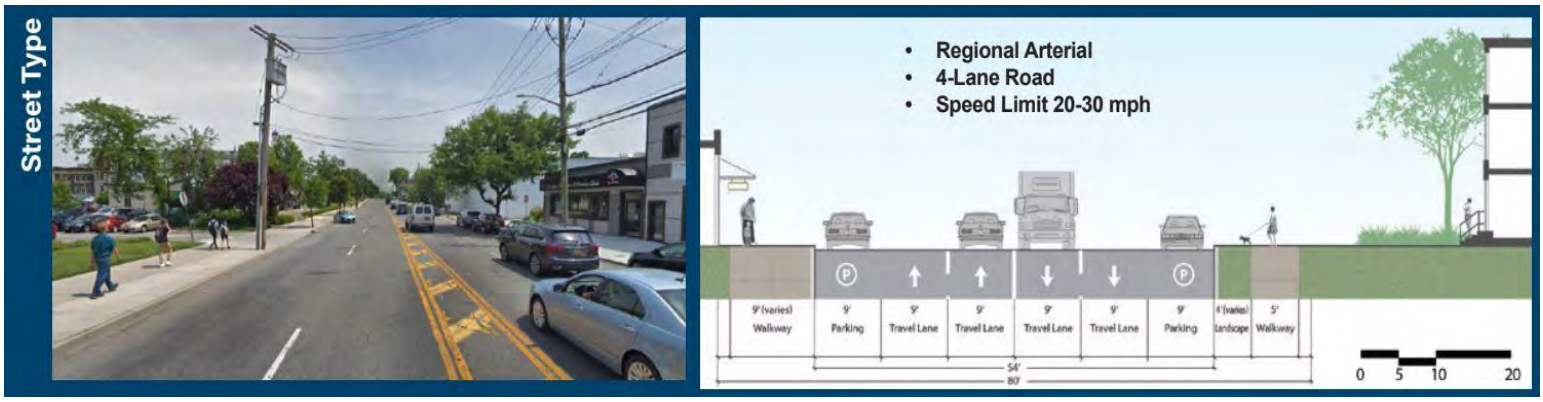
Environmental Analysis

C-1

Presently the all areas of the C-1 district are eligible for infill housing at an FAR of .6 up to .8 with the provision of BMR units. The proposed zoning change will make more than half of the areas within the C-1 zone ineligible for the infill housing provision. Based on the Planning Department analysis and Moratorium Study, this will lead to a 33% reduction in housing units (from 1171 to 789) relative to the no action full build out scenario (inclusive of the C-1 and TOD zones). The area of the C-1 zone that will remain eligible for infill housing, Halstead Avenue and N Barry Ave, was strategically chosen based on existing character, proximity to transit, and walkability. This means that modest development in these areas will attract residents who are less likely to drive and more likely to walk or take public transit to work, lessening the per capita traffic impact. The areas that will become ineligible are more likely to be developed as auto-oriented, disengaged from the public realm, and out of context.

Fundamentally the dimensional requirements in the areas that will remain eligible will not change and below-market-rate units will become mandatory. Based on the above analysis, the proposed action is not expected to result in any significant adverse environmental impact that would rise to the significance required for a positive declaration.

C-1 Character



Credit: NV5

C-2

The proposed zoning text amendment will not change the dimension requirements in the C-2 under the infill housing special permit. The only net change from the existing requirements are related to the provision of affordable housing. The new law will require that developments include 5 or more units and that they are required to reserve at least 10% of the residential units in the development as affordable units. Since there is no net increase in the dimensional requirements or in the development capacity within the district. The proposed action is not expected to result in any significant adverse environmental impact that would rise to the significance required for a positive declaration.

TOD

The proposed zoning text amendment will not change the dimension requirements in the TOD under the infill housing special permit. The only net change from the existing requirements are related to the provision of affordable housing. The new law will require that developments that include 5 or more units are required to reserve at least 10% of the residential units in the development as affordable units. Additionally, the new law mandates that buildings that have four units or fewer are not eligible for the additional 0.4 FAR bonus for the provision of green building elements and/or green infrastructure and the payment into the neighborhood stabilization fund. Since there is no net increase in the dimensional requirements or in the development capacity within the district, the proposed action is not expected to result in any significant adverse environmental impact that would rise to the significance required for a positive declaration.



Below Market Rate Units Requirements

The proposed zoning text amendment will not change the environmental impact of BMR housing units. The changes will change the length of their terms of affordability as well as require affirmative marketing of units. The only physical change will be the requirement that unit aesthetics must match the external aesthetic appearance of other units on premises. The proposed action is not expected to result in any significant adverse environmental impact that would rise to the significance required for a positive declaration.

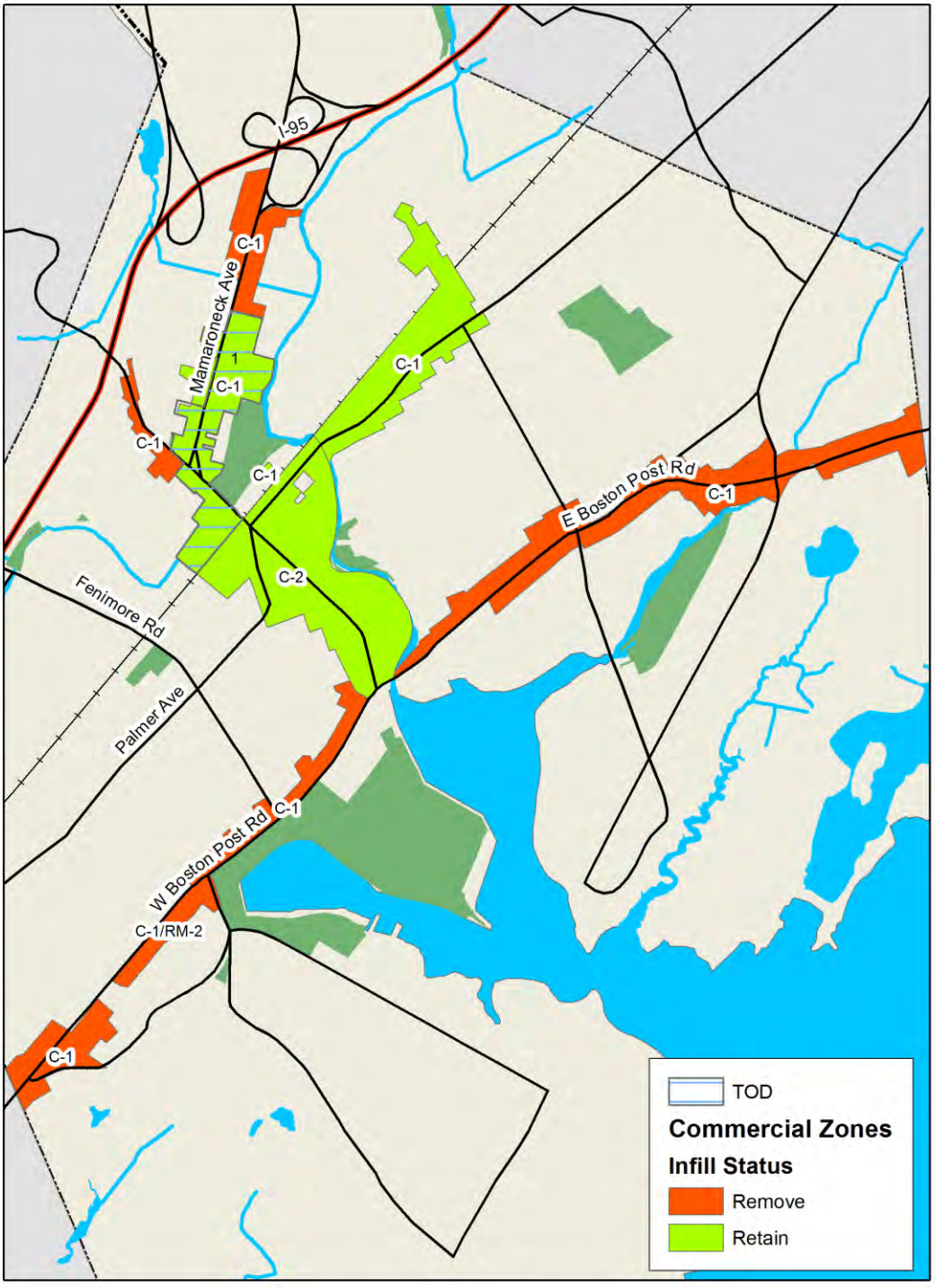
Schedule of Off-street parking

The proposed zoning text amendment will reduce the required parking for BMR units by ¼ to ½ a space per unit, depending on which zoning district the proposed unit is being built. Parking requirements for non-BMR units will remain the same. 10% of units in qualifying market-rate developments will be required to be BMR, meaning the typical 10-40 unit residential development will have between 0 and 2 fewer total parking spaces.

Reduced parking requirements for BMR units are appropriate since low-income households in the United States on average own half as many vehicles as non-low-income households[1]. These national numbers have been confirmed by a relatively local analysis, where affordable housing provider Westhab observed that actual peak on-site parking utilization in four of their affordable housing developments in Yonkers was more than two-thirds smaller than the standard required on-site parking requirements in Yonkers' code[2]. Consequently, low-income households have fewer parking needs and produce less parking demand than non-low-income households. Based on available data on BMR parking demand, the marginally reduced parking requirement for the units is not anticipated to create a parking capacity problem for multifamily developments. As such, the proposed action is not expected to result in any significant adverse environmental impact that would rise to the significance required for a positive declaration.

[1] Klein, N.J. & Smart, M.J. Transportation (2017) 44: 495. https://doi.org/10.1007/s11116-015-9664-4
[2] Pearson, Richard, JMC Site Development, Parking Analysis for Westhab Apartment Building (2018)

Context Sensitive Development, PLL-C

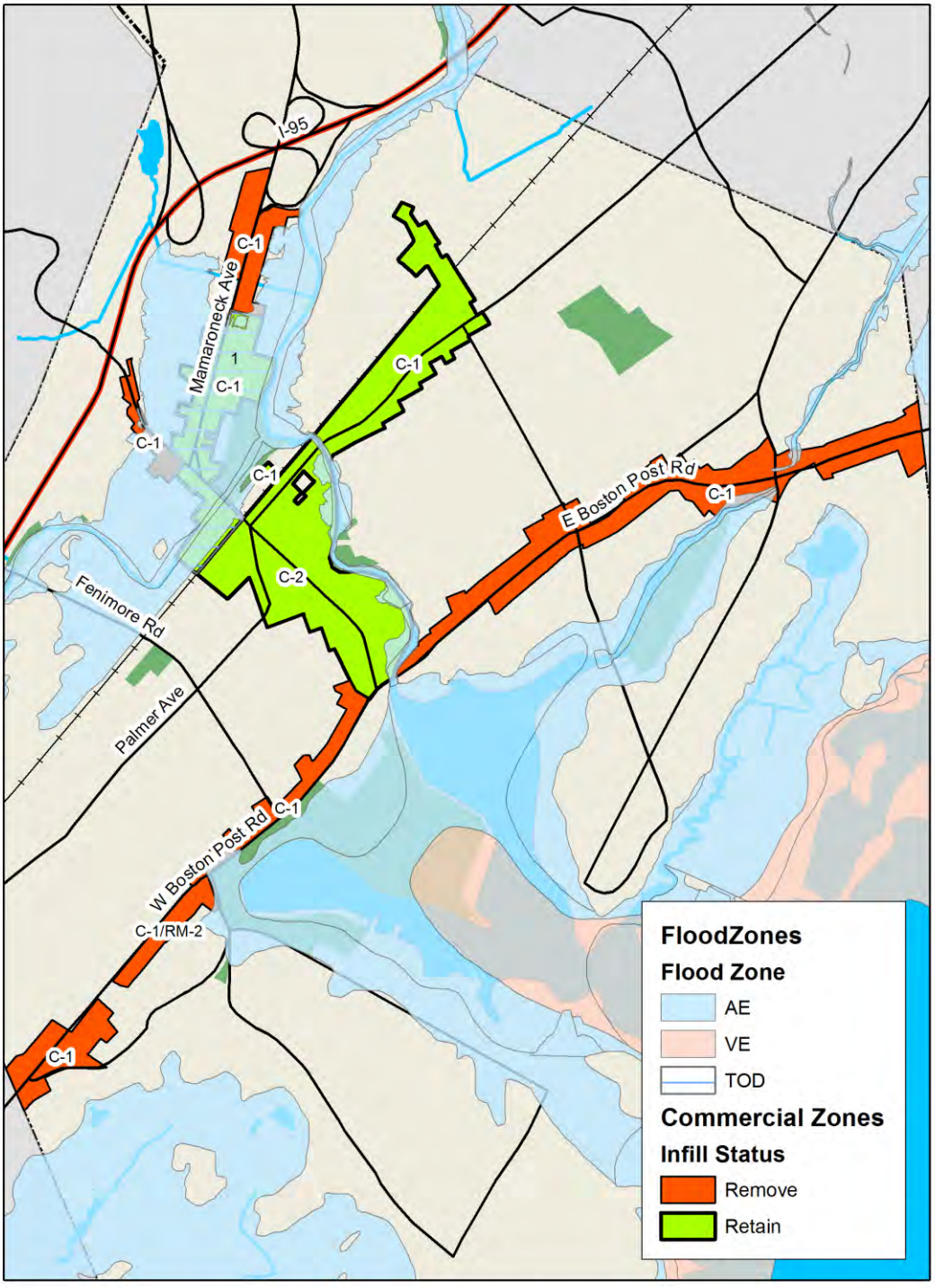


Author: Greg Cutler
Date: 3/22/2019

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Feet

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Context Sensitive Development, Flood Zones

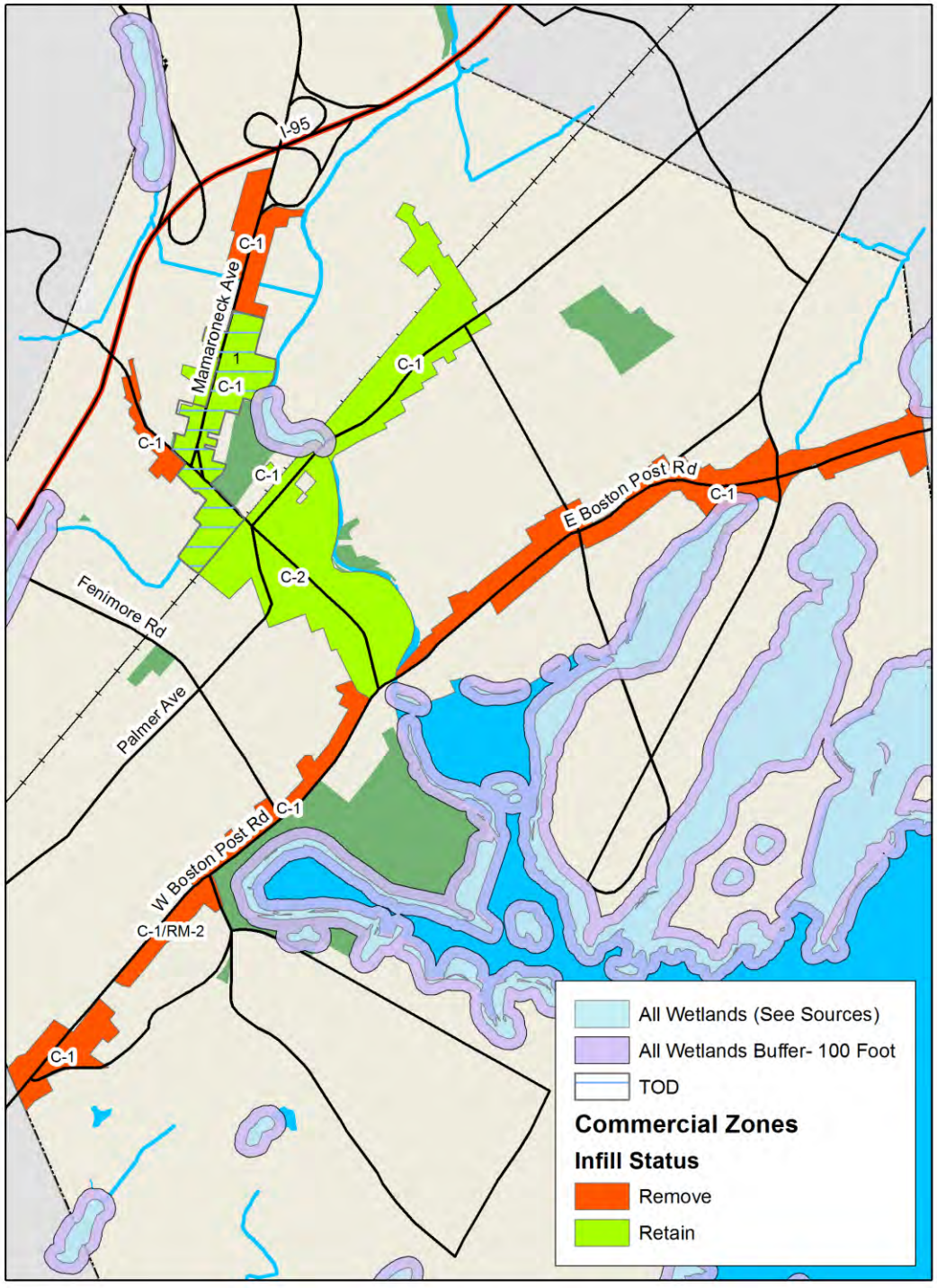


Author: Greg Cutler
Date: 3/21/2019

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Context Sensitive Development, Wetlands and Buffer

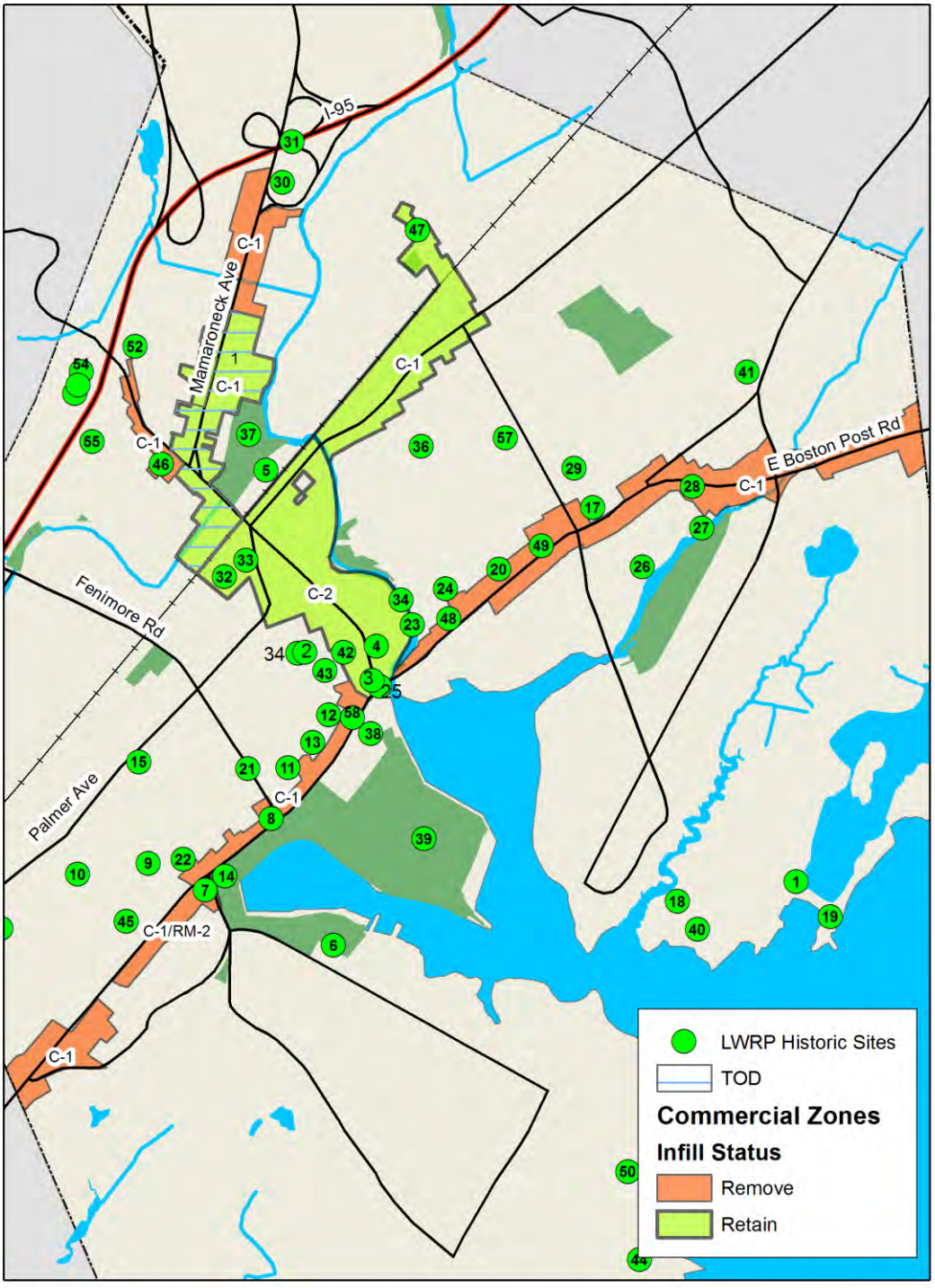


Author: Greg Cutler
Date: 3/22/2019

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Feet

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Context Sensitive Development, LWRP Historic Resources



Author: Greg Cutler
Date: 3/22/2019

Site	Map ID No.	National Register - listed	National Register - eligible	Designated VoM Landmark	Other LWRP Historic Resources	AIA - Recipient
"Old Mill"	1			X		
The American Legion Hall	2			X		
100 Mamaroneck Avenue	3			X		
Hook and Ladder Company No. 1 Firehouse	4			X		
Mamaroneck Railroad Stationhouse (1888)	5		X			
John Richbell Monument & Cemetery	6				X	
Site of Disbrow House (1677)	7				X	
DeLancey House (Fenimore Cooper House) (1792) Development	8				X	
Disbrow Cemetery	9				X	
Site of Flandreau House	10				X	
Site of Polycarpus Nelson House	11				X	
St. Thomas Episcopal Church Complex	12	X				
John Flandreau Cottage ("Vue de L'Eau") Church Rectory (1867); Banta House (Staff, 1890)	13		X			
Site of First School House	14				X	
DeLancey Cemetery	15				X	
Florence and Powell Cemetery	16				X	
Gedney Farmhouse - Circa 1800 (demolished)	17				X	
The Gatehouse	18				X	
Site of Deall's Dock	19				X	
The Mamaroneck United Methodist Church	20	X				X
Site of Battle of Heathcote Hill (1776)	21				X	
Site of Heathcote Manor House (at Women's Club overlooking harbor circa 1702)	22				X	
Site of 18th Century Dam and Mill Pond	23				X	

Site	Map ID No.	National Register - listed	National Register - eligible	Designated VoM Landmark	Other LWRP Historic Resources	AIA - Recipient
Site of "Closet Hall" of Fenimore Cooper	24				X	
Old Village Square (Madison Square)	25				X	
Guion Cemetery	26				X	
Town of Rye Dock Property	27			X		
Toll Gate House (1805)	28				X	
Gedney Cemetery	29				X	
Later Gedney Cemetery	30				X	
Dingee Cemetery	31				X	
Site of Depot School (1885)	32				X	
The Town of Mamaroneck Cemetery	33			X		
Tompkins Avenue Bridge ("Where the Salt Water Meets the Fresh")	34				X	
Site of First Kindergarten (1901)	35				X	
Melbourne Avenue Historic District (Old Rye Neck)	36				X	
Columbus Park Monument	37				X	
Mamaroneck Project Building (Sewage Treatment Plant Tower & Administration, 1931)	38		X			
Harbor Island Park (Pavilion, 1934; Seawalls; Memorial Grove and Firemen's Memorial)	39				X	
Stanford White-designed Gatehouse and Stables (Mamaroneck Beach and Yacht Club,1885); Cottage Gatehouse	40				X	
Daniel Warren Schoolhouse (Conrad Henne, Architect, 1930)	41					X
Mamaroneck Free Library (1927); Emelin Theatre (1972)	42				X	
Mamaroneck Village Hall (Johnson Park and World War II Memorial)	43				X	

Site	Map ID No.	National Register - listed	National Register - eligible	Designated VoM Landmark	Other LWRP Historic Resources	AIA - Recipient
Weatherbee Mansion (Westchester Day School, circa, 1880)	44				X	
Old Central School (First High School, 1888)	45				X	
Strait Gate Church (1945); Rev. Martin Luther King Center	46				X	
Barry Avenue A.M.E. Zion Church (1903)	47				X	
Holy Trinity Church (1885)	48				X	
Tompkins Park (Memorial to World War I Veterans) with Milestone "23 Miles to N.Y. City"	49				X	
Orienta Beach Club	50				X	
Beach Point Club Mansion	51				X	
St. Vito's Church (1930)	52				X	
Satan's Toe, Site of Flagler Estate and D.W. Griffith Studio	53				X	
Highview Street Historic District	54				X	
The "Skinny House"	55	X		X		
Walter's Hot Dog Stand	56	X				
Albert E. & Emily Wilson House	57	X				
The Lichtenstein Building	59			X		
The Bedelle Homestead and Cottage	60			X		

Notes: Any site or structure that has been deemed eligible under the State Office of Parks, Recreation and Historic Preservation Program merits the same protection under the LWRP.

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: PLL C 2019- Zoning for Context Sensitive Development		
Project Location (describe, and attach a general location map): C-1 Zoning District, C-2 Zoning District, TOD Overlay Zone		
Brief Description of Proposed Action (include purpose or need): The proposed action will amend Chapter 342 by eliminating the infill housing provisions on the Boston Post Road and portions of Mamaroneck Avenue North, while retaining the infill housing provisions at existing FARs on Halstead Avenue, the TOD Overlay Zone, and the C-2 and require below market rate units. The proposed action is the result of a year-long study in relation to a moratorium on development involving the construction of three or more residential units and the subdivision of three or more residential parcels. The proposed zoning change is 1) intended to alleviate concerns that development under the current zoning code will lead to excessive traffic and congestion, overtaxing of village infrastructure, and overcrowding in schools by reducing the overall residential development capacity in the commercial districts by approximately 33% and 2) intended to expand the provision of affordable housing in the Village by requiring that 10% of units in any residential project with five or more units in the C-1, C-2, and TOD zones be reserved for below market rate units.		
Name of Applicant/Sponsor: Village of Mamaroneck	Telephone: 914-777-7701 E-Mail: Mayorandboard@vomny.org	
Address: 123 Mamaroneck AVe		
City/PO: Mamaroneck	State: NY	Zip Code: 10543
Project Contact (if not same as sponsor; give name and title/role): Gregory Cutler, Village Planner	Telephone: 914-825-8757 E-Mail: Gcutler@vomny.org	
Address: 169 Mt Pleasant Avenue: 3rd Floor		
City/PO: Mamaroneck	State: NY	Zip Code: 10543
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Zoning text amendment	3/25/19
b. City, Town or Village Planning Board or Commission ☐Yes ☑No		
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☐Yes ☑No		
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☑Yes ☐No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
C-1, C-2, TOD Overlay

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Mamaroneck UFSD & Rye Neck UFSD

b. What police or other public protection forces serve the project site?
Village of Mamaroneck Police Department

c. Which fire protection and emergency medical services serve the project site?
Village of Mamaroneck Fire Department and the Mamaroneck Emergency Medical Service

d. What parks serve the project site?
Columbus Park and Harbor Island Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?

b. a. Total acreage of the site of the proposed action? _____ acres
b. Total acreage to be physically disturbed? _____ acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☐No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☐Yes ☐No

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☐No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☐No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☐No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☐No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☐No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☐No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☐No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

_____

_____

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

n. Will the proposed action have outdoor lighting? ☐ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

_____

_____

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

_____

_____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☐ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

_____

_____

_____

_____

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____

  _____
- Operation: _____

  _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____

  _____
- Operation: _____

  _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☐ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☐ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

_____

_____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

_____

_____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

_____

_____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

_____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

_____

_____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)

☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

_____

_____

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces			
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____ _____			

c. Is the project site presently used by members of the community for public recreation? ☐Yes ☐No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐Yes ☐No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐Yes ☐No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐Yes ☐No

If Yes:

i. Has the facility been formally closed? ☐Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐Yes ☐No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐Yes ☐No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐Yes ☐No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

_____

_____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☐ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: _____ _____%
_____ _____%
_____ _____%

d. What is the average depth to the water table on the project site? Average: _____ feet

e. Drainage status of project site soils: ☐ Well Drained: _____% of site
☐ Moderately Well Drained: _____% of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes: ☐ 0-10%: _____% of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☐ No
If Yes, describe: _____

_____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

_____

i. Is the project site in a designated Floodway? ☐ Yes ☐ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☐ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☐ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

_____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): _____

_____

_____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☐ No

If Yes:

i. Species and listing: _____

_____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☐ No

If yes, give a brief description of how the proposed action may affect that use: _____

_____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☐ No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☐ No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☐ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

_____

_____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☐ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☐ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☐ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☐ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Mayor and Board of Trustees Date 3/25/19

Signature Gregory Cutler, AICP Title Village Planner

PRINT FORM

Agency Use Only [If applicable]

Project : PLL-C 2019

Date : 3/25/19

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes"** to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No"** to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)

☑ NO ☐ YES

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☐	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g)

☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	□	□
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	□	□
c. Other impacts: _____ _____		□	□

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h)

☑ NO ☐ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	□	□
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	□	□
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	□	□
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	□	□
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	□	□
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	□	□
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	□	□
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	□	□
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	□	□
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	□	□
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	□	□

l. Other impacts: _____ _____		□	□

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	□	□
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	□	□
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	□	□
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	□	□
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	□	□
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	□	□
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	□	□
h. Other impacts: _____ _____		□	□

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	□	□
b. The proposed action may result in development within a 100 year floodplain.	E2j	□	□
c. The proposed action may result in development within a 500 year floodplain.	E2k	□	□
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	□	□
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	□	□
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	□	□

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. ☑ NO ☐ YES
(See Part 1. D.2.f., D.2.h, D.2.g)
If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑ NO ☐ YES
If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	□	□
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	□	□
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	□	□
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	□	□
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	□	□
j. Other impacts: _____ _____		□	□

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	□	□
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	□	□
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	□	□
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	□	□
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	□	□
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	□	□
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	□	□
h. Other impacts: _____		□	□

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)

☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	 ☐ ☐	 ☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	 ☐ ☐	 ☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____ _____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)

☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☐	☐

d. Other impacts: _____ _____		□	□
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	□	□
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	□	□
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	□	□

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	□	□
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	□	□
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	□	□
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	□	□
e. Other impacts: _____ _____		□	□

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	□	□
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	□	□
c. Other impacts: _____ _____		□	□

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. ☑ NO ☐ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____ _____		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. ☑ NO ☐ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____ _____			

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☑ NO ☐ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☐	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☐	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☐	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. ☑ NO ☐ YES

(See Part 1. C.1, C.2. and C.3.)

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. ☑ NO ☐ YES

(See Part 1. C.2, C.3, D.2, E.3)

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

VILLAGE OF MAMARONECK
HARBOR & COASTAL ZONE MANAGEMENT
COMMISSION APPLICATION

HCZM meets on the third Wednesday of the month, 7:30PM, Village Hall Courtroom, 169 Mt. Pleasant Ave.

Local Waterfront Revitalization Program
Coastal Assessment Form

I. INSTRUCTIONS (please print or type all answers)

For Type I and unlisted actions, the Harbor and Coastal Zone Management Commission shall determine whether the actions are consistent, to the maximum extent practicable, with the policies of the Village of Mamaroneck Local Waterfront Revitalization Program.

For Type II actions, the lead agency shall determine whether the actions are consistent, to the maximum extent practicable, with the policies of the Village of Mamaroneck Local Waterfront Revitalization Program.

For direct agency actions, the agency shall complete, and for approval of an action, the agency shall cause the applicant to complete, a coastal assessment form (CAF). The CAF shall be completed prior to the agency's determination of the environmental significance pursuant to the State Environmental Quality Review Act.

Where any question on the CAF is answered "yes", a brief and precise description of the nature and extent of the action shall be provided on the CAF, and a copy of the CAF shall be forwarded to the Harbor and Coastal Zone Management Commission.

Please classify/determine if your application is Type I, Type II or Unlisted under SEQRA.

☒ **Type I**: An action which is likely to have a significant adverse impact on the environment.

☐ **Type II**: An action which will not have a significant adverse impact on the environment.

☐ **Unlisted**: An action which does not exceed the thresholds for Type I.

For further information, please see http://www.dec.state.ny.us/website/dcs/seqr.

II. 15 copies of the application and supporting documents should be submitted to the Building Dept. for review by the Bldg. Inspector to place on the HCZM Agenda and must comply with the Notification Law. Applications will not be reviewed unless all relevant materials are submitted.

☐ Short Environmental Assessment Form (for Unlisted actions only)
☒ Full Environmental Assessment Form (if Type I action)
☐ Construction drawing plans certified and signed by an architect or engineer licensed by the State of New York
☐ Topographical survey by a licensed land surveyor dated within one year

w/FEMA lines

- ☐ Completed Building Permit Application
- ☐ Elevation Certificate showing compliance with FEMA by a licensed architect or engineer licensed by the State of New York.
- ☐ Soil Erosion Mitigation Plan - See Building Department for details
- ☐ Storm Water Management Plan - See Building Department for details
- ☐ If Perimeter permit is required, proof of compliance with LL 4-2006 Section 1 (F)
- ☒ Coastal Assessment Form

III. Has this property come before this commission or a former Harbor & Coastal Zone Management Commission in the past 3 years? If so, when? NA

IV. **It is the applicant's obligation to determine whether permitting is required** by any state/federal agencies including but not limited to the Department of State Dept. of Environmental Conservation, NY State Army Corp of Engineers or Federal Consistency Review.

II. DESCRIPTION OF PROPOSED ACTION

A. Type of Action – is action a direct agency action (an action planned and proposed for implementation by the Village of Mamaroneck) or does it involve the application for an approval or permit to be granted by a Village agency? Check one:

1. Direct Agency Action ☒
2. Application for an Approval ☐

If this is an Application for an Approval or Permit, identify which board or commission has the permit authority? Click here to enter text.

B. Describe nature and extent of proposed activity:

The proposed action will amend Chapter 342 by eliminating the infill housing provisions on the Boston Post Road and portions of Mamaroneck Avenue North, while retaining the infill housing provisions at existing FARs on Halstead Avenue, the TOD Overlay Zone, and the C-2 and require below market rate units. The proposed action is the result of a year-long study in relation to a moratorium on development involving the construction of three or more residential units and the subdivision of three or more residential parcels.

C. Location of proposed activity (include street or site description): C-1, C-2, TOD Overlay Zone

D. If an application for the proposed action has been filed with the agency, the following information shall be provided:

a.) Name of Applicant: Village of Mamaroneck Board of Trustees

b.) Mailing Address: Village Hall at the Regatta, 123 Mamaroneck Ave, Mamaroneck NY, 10543

c.) Telephone Number: Area Code 914-777-7703

The foregoing is affirmed by Gregory Cutler Date: 3/25/2019

3. Will the action to be directly undertaken, require funding or approval by either a state or federal agency? No☒ Yes ☐
If yes, which state or federal agency? Click here to enter text.

III. Coastal Assessment Form (Check either "Yes" or "No" for each of the following questions). (See Chapter 342 of the Village code for additional information.)

A. Will the proposed action be located in, or contiguous to, or to have a significant effect upon any of the resource areas identified in the Local Waterfront Revitalization Program?

	(Check) Yes	or No
1. Significant fish/ wildlife habitats (7, 7a, 44)	☒	☐
2. Flood Hazard Areas (11, 12, 17)	☒	☐
3. Tidal or Freshwater Wetland (44)	☒	☐
4. Scenic Resource (25)	☒	☐
5. Critical Environmental Areas (7, 7a, 8, 44)	☒	☐
6. Structures, sites or districts of historic, Archeological or cultural significance (23)	☒	☐

B. Will the proposed action have a significant effect on any of the following?

1. Commercial or recreational use of the fish and wildlife resource (9, 10)	☐	☒
2. Development of the future or existing water-dependent uses (2)	☐	☒
3. Land and water uses (2, 4)	☐	☒
4. Existing or potential public recreation opportunities (2, 3)	☐	☒
5. Large physical change to a site within the coastal area which will require the preparation of an environmental impact statement (11, 13, 17, 19, 22, 25, 37, 38)	☐	☒
6. Physical alteration of one or more areas of land along the shoreline, land under water or coastal waters (2, 4, 11, 12, 17, 20, 28, 35,44)	☐	☒

7. Physical alteration of three or more acres of land located elsewhere in the coastal area (11, 12, 17, 33, 37, 38)	☐	☒
8. Sale or change in use of state-owned lands, located under water (2, 4, 19, 20, 21)	☐	☒
9. Revitalization/redevelopment of deteriorated or underutilized waterfront site (1)	☐	☒
10. Reduction of existing or potential public access to or along coastal waters (19, 20)	☐	☒
11. Excavation or dredging activities or the placement of fill materials in coastal waters of Mamaroneck (35)	☐	☒
12. Discharge of toxic, hazardous substances, or other pollutants into coastal waters of Mamaroneck (34, 35, 36)	☐	☒
13. Draining of storm water runoff either directly into coastal waters of Mamaroneck or into any river or tributary which empties into them (33, 37)	☐	☒
14. Transport, storage, treatment or disposal or solid waste or hazardous materials (36, 39)	☐	☒
15. Development affecting a natural feature which provides protection against flooding or erosion (12)	☐	☒

C. Will the proposed activity require any of the following:

1. Waterfront site (2, 4, 6, 19, 20, 21, 22)	☐	☒
2. Construction or reconstruction of a flood or erosion control structure (13, 14)	☐	☒

V**. Remarks or Additional Information**:

The proposed zoning change is 1) intended to alleviate concerns that development under the current zoning code will lead to excessive traffic and congestion, overtaxing of village infrastructure, and overcrowding in schools by reducing the overall residential development capacity in the commercial districts by approximately 33% and 2) intended to expand the provision of affordable housing in the Village by requiring that 10% of units in any residential project with five or more units in the C-1, C-2, and TOD zones be reserved for below market rate units. While the proposal will change the zoning requirements in areas that are within or contiguous to the identify resource areas (i.e. Sig. Fish and Wildlife Habitats, Flood Hazard Areas, Tidal and Freshwater Wetlands, Scenic Resources, CEAs, and historic resources) it will not have a significant effect upon them.

Preparer's Signature: Gregory Cutler, AICP

Preparer's Name/Title: Gregory Cutler - Village Planner

Coastal Assessment Form – Narrative

Compliance with LWRP Policies

INSTRUCTIONS-Please indicate how your project complies with each LWRP policy. If a policy does not pertain to your project, please indicate "N/A." A response must be provided for each policy. If additional space for responses is needed, please add an addendum. The Village of Mamaroneck LWRP can be viewed at http://www.village.mamaroneck.ny.us/pages/mamaroneckny_webdocs/LWRP.pdf

Development Policies

Policy 1. Restore, revitalize, and redevelop deteriorated and under-utilized waterfront areas.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 2. Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 3. Not applicable.

Policy 4. Strengthen the economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 5. Not applicable.

Policy 6. Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.

Not applicable. The proposed action will not advance nor hinder this policy.

Fish and Wildlife Policies

Policy 7. Significant coastal fish and wildlife habitats, as identified on the N.Y. Coastal Area Map (when finalized), shall be protected, preserved, and where practical, restored so as to maintain their viability as habitats.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 7a. Significant coastal fish and wildlife habitats, as identified in this document, shall be protected, preserved, and where practical, restored so as to maintain their viability as habitats.

While the proposed action will eliminate the provision of infill housing in areas that are contiguous to significant fish and wildlife habitats, this change is not anticipated to impact these resources in any way. The proposed action will not advance nor hinder this policy.

Policy 8. Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bioaccumulate in the food chain or which cause significant sub-lethal or lethal effect on those resources.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 9. Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks and developing new resources.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 10. Further develop commercial finfish, shell-fish and crustacean resources in the coastal area.

Not applicable. The proposed action will not advance nor hinder this policy.

Flooding and Erosion Hazards Policies

Policy 11. Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 12. Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 13. The construction and reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 14. Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 15. Not applicable.

Policy 16. Not applicable.

Policy 17. Wherever possible, use nonstructural measures to minimize damage to natural resources and property from flooding and erosion.

Not applicable. The proposed action will not advance nor hinder this policy.

General

Policy 18. To safeguard the vital economic, social and environmental interests of the State and the Village of Mamaroneck, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the State and this Village have established to protect valuable coastal resource areas.

Not applicable. The proposed action will not advance nor hinder this policy.

Public Access Policies

Policy 19. Protect, maintain and increase the levels and types of access to public water related recreation resources and facilities so that these resources and facilities may be fully utilized by all the public in accordance with reasonably anticipated public recreation needs and the protection of historic and natural resources. In providing such access, priority shall be given to public beaches, boating facilities, fishing areas, and waterfront parks.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 20. Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly owned shall be provided, and it should be provided in a manner compatible with adjoining uses. Such lands shall be retained in public ownership.

Not applicable. The proposed action will not advance nor hinder this policy.

Recreation Policies

Policy 21. Water-dependent and water-enhanced recreation shall be encouraged and facilitated and shall be given priority over non-water-related uses along the coast, provided it is consistent with the preservation and enhancement of other coastal resources and takes into account demand for such facilities. In facilitating such activities, priority shall be given to areas where access to the recreation opportunities of the coast can be provided by new or existing public transportation services and to those areas where the use of the shore is severely restricted by existing development. In addition, water-dependent recreation uses shall have a higher priority over water-enhanced recreation uses.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 22. Development, when located adjacent to the shore, shall provide for water-related recreation, as a multiple use, whenever such recreational use is appropriate in light of reasonably anticipated demand for such activities and the primary purpose of the of the development. In the Village of Mamaroneck, this also applies to redevelopment of waterfront property.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 23. Protect, enhance and restore structures, districts, areas, or sites that are of significance in the history, architecture, or archeology or culture of the Village of Mamaroneck.

Not applicable. The proposed action will not advance nor hinder this policy.

Scenic Quality Policies

Policy 24. Not applicable.

Policy 25. Prevent impairment of scenic resources of Statewide or local significance. *Note Harbor Island Park is a scenic resource of local significance.

While the propose local law will eliminate the provision of infill housing in areas adjacent to Harbor Island Park, the action is not anticipated to impair the scenic viewshed. The proposed action will not advance nor hinder this policy.

Policy 26. (Agricultural Lands Policy) Not applicable.

Energy and Ice Management Policies

Policy 27. Not included.

Policy 28. Not applicable.

Policy 29. Not included.

Water and Air Resources Policies

Policy 30. Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, and sewage, into coastal waters will conform to State and National water quality standards.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 31. State coastal area policies and purposes of approved Local Waterfront Revitalization Programs will be considered while modifying water quality standards; however, those waters already overburdened with contaminants will be recognized as being a development constraint.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 32. Not applicable.

Policy 33. Best Management Practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 34. Discharge of waste materials from vessels into coastal waters will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 35. Dredging and dredge spoil disposal in coastal waters will be undertaken in a manner that meets existing State dredging permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 36. Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 37. Best Management Practices will be utilized to minimize the nonpoint discharge of excess nutrients, organics and eroded soils into coastal waters.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 38. The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 39. The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas, will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land and scenic resources.

Not applicable. The proposed action will not advance nor hinder this policy.

Policy 40. Not applicable.

Policy 41. Not included.

Policy 42. Not included.

Policy 43. Not included.

Policy 44. Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

Not applicable. The proposed action will not advance nor hinder this policy.

Village of Mamaroneck
Planning Department

Memo

To: Dan Sarnoff, Acting Village Manager

From: Greg Cutler, Village Planning; Matthew da Silva, Assistant Village Planner

CC: Mayor and Board of Trustees; Neil Desai, NV5

Date: February 7, 2019

Re: Below-Market Rate Housing in Mamaroneck

In response to a request from the Board of Trustees for more information regarding Mamaroneck's policies related to below-market-rate housing, this document contains the following components:

1. **The planning rationale for providing below-market-rate housing, organized around the Comprehensive Plan themes of:**
    a. Quality of Life
    b. Diversity
2. **An overview of the mechanics of the existing Below-Market-Rate Housing Bonus including:**
    a. Required Units
    b. Size of Density Bonus
    c. Affordability Standards
    d. Terms of Affordability
3. **An evaluation of the policy's impacts and effectiveness with regards to:**
    a. Number of below-market-rate housing units produced by density bonuses and by other means
    b. Changes in the rate in which developers utilize the policy
    c. Differences in the rate in which developers utilize the policy in different zoning districts
    d. Long-term preservation of unit affordability
4. **Policy ideas for consideration to overcome the policy's shortcomings, including:**
    a. Changing requirements in the C-2 to conform more closely to that of the C-1
    b. Reducing parking requirements for affordable housing units
    c. Providing higher density bonus for higher affordability percentages and/or deeper levels of affordability
    d. Providing assistance to non-profit developers interested in producing affordable housing
5. **Integration of Analysis Findings in the Context of the post-Moratorium Scenarios**

The Planning Rationale for Providing Below-Market-Rate Housing

- ***QUALITY OF LIFE***
- ***SMALL-TOWN CHARACTER***
- ***DIVERSITY***
- ***ENVIRONMENT***

These are the four themes of the Vision Statement of Mamaroneck's current Comprehensive Plan. Housing affordability directly contributes to two of the four themes of the Vision Statement, *Quality of Life* and *Diversity*, by relieving financial pressure on residents struggling to afford housing and allowing residents of many professions, incomes, and races to find a home in the Village. The role affordable housing can play in advancing these goals is directly recognized in the following goal in the Comprehensive Plan:

> *"Develop workforce and senior housing at appropriate densities"*

Quality of Life

Financial ability to pay for market-rate housing has not kept pace with the rise in value of new and existing homes. (The Affordability Gap)

Over the past several decades, the affordability of housing in Mamaroneck has eroded in the face of a multitude of economic trends that have caused housing prices to rise much faster than that of wages and other commodities.

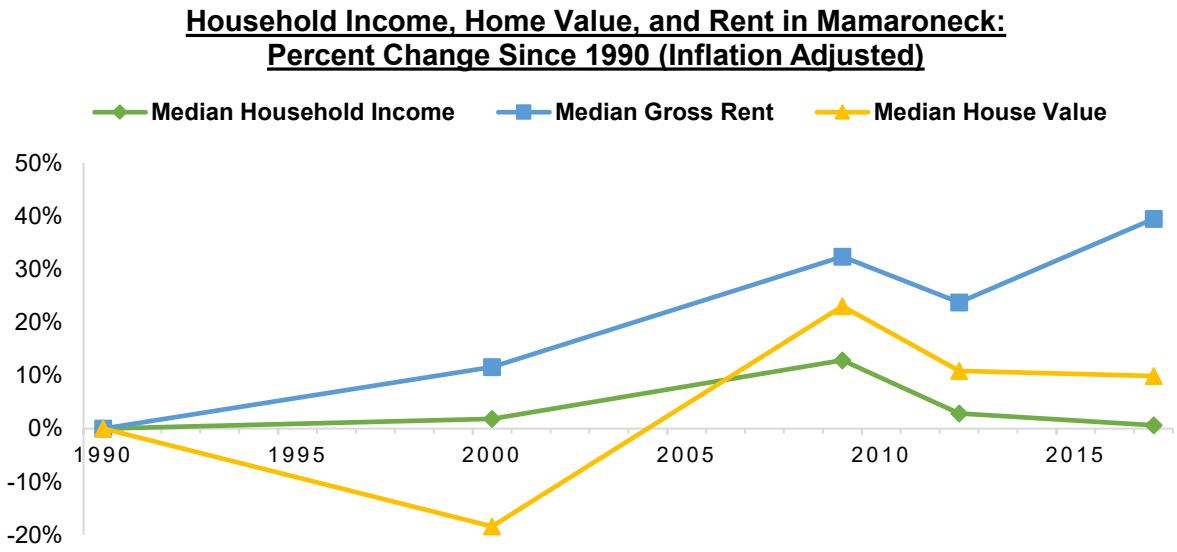


Figure 1 Source: US Census Decennial Census and ACS Five-Year Estimates. All Values in 2017 Dollars.

Incomes have stagnated in Mamaroneck and nationwide, but rents have continued to grow, straining the affordability of housing in the Village, especially rental housing, to all but the highest-income households. In Mamaroneck, growth in median gross rent has been outpacing income growth since the 1990s. Unlike for-sale homes, whose prices have begun to re-converge with income trends after the 2000s housing bubble burst, rent growth has continued to

accelerate in the aftermath of the Great Recession. As of 2017, incomes are still roughly equivalent to those in 1990 (after adjusting for inflation), while rents are 40% higher (See Figure 1).

High housing costs are negatively impacting the quality of life of Mamaroneck residents.

This growing gap between incomes and rents has manifested itself in renters having to spend an ever-increasing share of their income on housing. According to U.S. Department of Housing and Urban Development (HUD) guidelines, a household ideally should not be paying more than 30% of their income in rent. Households exceeding this threshold are rent burdened. Rent-burdened households face the tough choice to either reduce expenses elsewhere or leave Mamaroneck for other communities with lower housing prices. This choice is even graver for low-income families, who typically have few nonessential expenditures that can be sacrificed to accommodate rising rents.

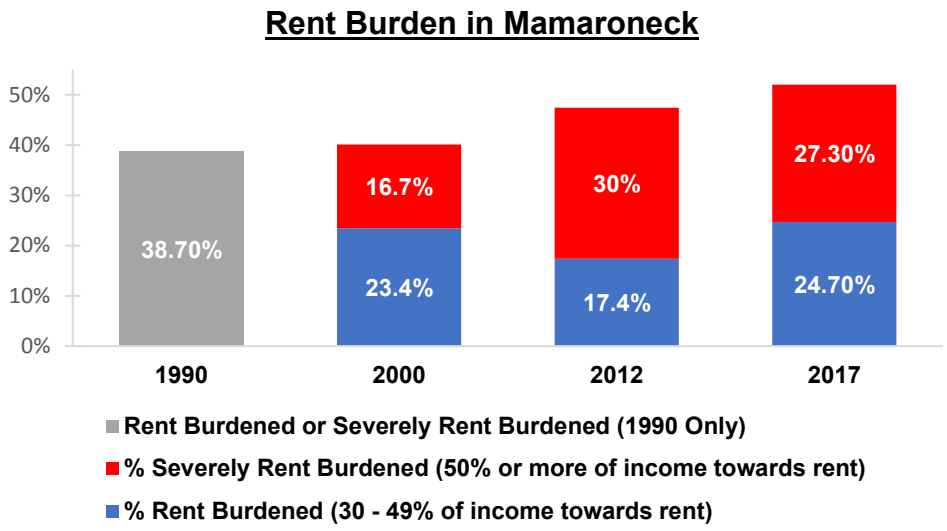


Figure 2 Source: US Census Decennial Census and ACS Five-Year Estimates

Over the past 30 years, the proportion of Mamaroneck residents who are rent burdened has grown from roughly a third of all renters to more than half of all renters as of 2017 (see Figure 2). Half of those renters are severely rent burdened, paying more than half of their income in rent. The opportunity to live in below-market-rate housing can take undue financial pressure off of the household budgets of many of these families.

Diversity

Low-and moderate-income households can no longer afford to purchase homes in the Village of Mamaroneck.

According to Zillow, the median home sale price in Mamaroneck is nearly $750,000. While these high home sale prices have been good news for residents who currently own a home, the high sales price can be too much for residents who currently rent to put down roots and for families seeking to move to the Village. Prospective homebuyers in Mamaroneck generally need incomes in excess of $200,000 in order to find a home they can afford. The result of this is that

those moving to the Village now are considerably wealthier than the population. If this trend continues, Mamaroneck could start losing the socioeconomic diversity that makes Mamaroneck a unique and welcoming community.

A disproportionate percentage of the population in need of affordable housing consists of people of color.

Mamaroneck's continued racial and ethnic diversity depends on the ability of low- and moderate-income households to be able to find housing affordable to their needs, particularly for the Village's long-standing Latino community.

Latino households in the Village have incomes nearly half the size of white households in the Village (See Figure 3). Displacement of the Village's lower-income populations due to high housing costs will likely mean displacement of the Village's Latino residents.

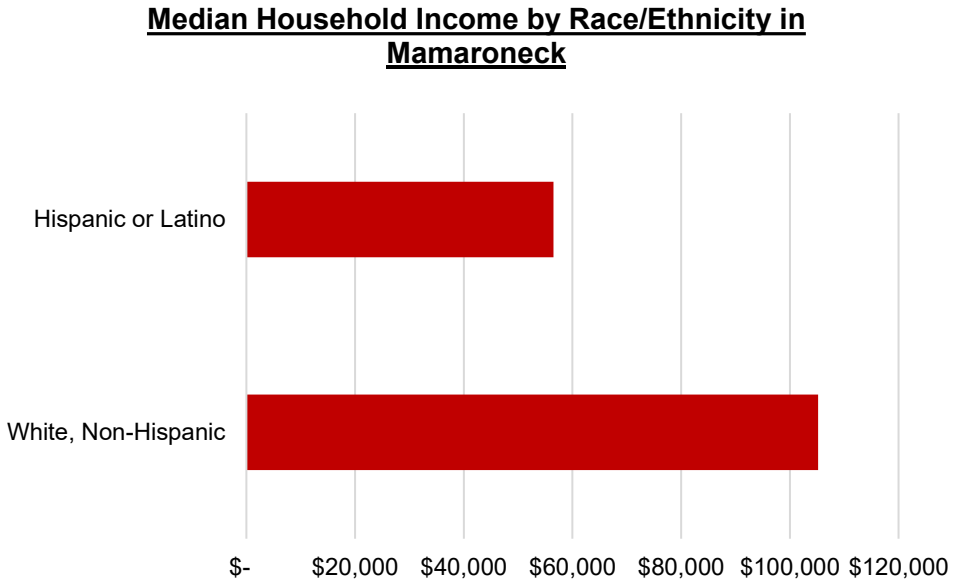


Figure 3 Source: US Census 2017 ACS Five-Year Estimates

Failure to provide for the maintenance and expansion of housing opportunity for a socioeconomically and racially diverse population may have a disparate impact on racial and ethnic minorities.

Because of its longstanding racial and socioeconomic diversity and its early commitment to providing affordable housing, Mamaroneck was not implicated in the housing settlement Westchester County entered with the US Department of Housing and Urban Development (HUD) in response to the failure by many communities in the County to affirmatively advance fair and affordable housing and the disparate impact that had on racial and ethnic minorities. Continuing to ensure our affordable housing laws result in the actual production of affordable housing can ensure that Mamaroneck will continue to avoid such disparate impacts and the consequences they may carry.

Below-Market Rate Housing Bonus Provisions

Mamaroneck currently incentivizes below-market-rate housing in the form of additional Floor Area Ratio (FAR) in exchange for a certain percentage of the additional units in a building being affordable to tenants or purchasers meeting certain income requirements. This mechanism, known as the affordable housing bonus, has been responsible for the lion's share of affordable housing production in the Village. The provisions of the bonus are codified in the Village's below-market-rate housing ordinance (342 Article XV).

Required Units and Bonus Size

The precise size of the bonus and the number of affordable units required by the ordinance is different depending on the zoning district. Most notably, the C-2 district differs from others by only granting a bonus to developments that entirely consist of below-market-rate housing. A summary of these requirements can be seen in the below chart:

Schedule of Requirements for Below-Market-Rate Housing Bonus

Zoning District	Default FAR	FAR with Bonus	Affordability Requirement
C-1	0.6	0.8	50% of Bonus (10% of Development)
C-2	2	2.5	100% of Development
TOD	1 (including other bonuses	1.2	50% of Bonus (8.3% of Development)

Affordability Standards and Term

In the Village's below-market-rate housing ordinance, a unit is considered affordable if it is set aside for and made affordable to tenants or purchasers making 80% of the Area Median Income (AMI) or less. Rent charged is the equivalent of 30% of the monthly income for a household at 80% AMI assuming a household size equivalent to the maximum code-compliant occupancy of a housing unit. The incomes associated with 80% AMI are in line with many middle-class occupations such as teachers, social workers, nurses, architects, technicians, designers, and civil servants[1]. These income limits and monthly rents can be seen in the below chart:

Income and Rent Standards for Below-Market-Rate Units (80% AMI)

	Studio (1 person)	1 bedroom (2 persons)	2 bedroom (4 persons)
Rent Charged	$1,640	$1,874	$2,530
Maximum Income	$65,600	$74,950	$93,650

The Town of Mamaroneck Housing Authority has confirmed that households with lower incomes who cannot afford rental housing at 80% AMI can use federal Housing Choice Vouchers (formerly known as Section 8) to cover the difference between their ability to pay rent and the rent charged in affordable units produced by the bonus. This practice has rendered the 80% AMI rental units accessible to tenants to incomes as low as 30% AMI, which allows people with jobs such as food service workers, janitors, groundskeepers, childcare workers, and stylists to find homes they can afford.

[1] Source: New York State Department of Labor Occupational Wage Data: https://labor.ny.gov/stats/lswage2.asp

From a local policy perspective it is not advisable to solely rely on federal Housing Vouchers to continue to close the affordability gap because 1) there are too few vouchers at present to meet the housing demands of the community 2) there is a substantial wait list of qualified households and 3) additional federal/state funding aimed at expanding the Housing Choice Voucher Program has not yet materialized and may never materialize.

The terms of affordability in the below-market-rate housing ordinance are guaranteed ‘in perpetuity’. For rental units, this has been interpreted to mean the life of the project, but for for-sale condominiums this had been previously interpreted as twenty years, after which the owner is free to sell to anyone regardless of income. At present, according to the Westchester County Planning Department, the term ‘in perpetuity’ is interpreted as 99 years. The Village may benefit from clarifying and codifying the definition of ‘in perpetuity’ by expressly stating that it represents a period of 99 years for owner-occupied below-market-rate units.

Current Policy Evaluation

Since passage of the affordable housing bonus in 1986, the mechanism has seen mixed success. Below are four observations on how the policy has worked in practice.

The policy has helped produced a moderate amount of below-market-rate housing.

Out of 25 for-profit multifamily developments in the infill housing area since the institution of the bonus, only five projects have utilized the bonus in some capacity[2], producing 138 affordable housing units.

Bonus housing is not the only source of affordable housing in the Village. Washingtonville Housing Alliance (WHA) has developed 50 housing units (13 for-sale and 37 rental) on a nonprofit basis. WHA and similar organizations rely on public and private grants as well as investments from financial institutions taking advantage of federal Low-Income Housing Tax Credits (LIHTCs). Additionally, WHA in collaboration with the Community Housing Management Corporation built the Mamaroneck Towers project containing 75 units of affordable senior housing. This project utilized a special zoning district (RM/SC), to provide these housing units on one site in the heart of the Village Downtown.

The policy was most effective in the 1990s; the policy has been less effective recently.

Before the mid-1990s, all non-senior below-market-rate housing in the Village was produced by WHA. The latter half of the 1990s proved to be the most productive period for the below-market-rate housing bonus, with the construction of Continental Manor (1996), the Regatta (1998), and the Avalon (2000), collectively producing 129 units of affordable housing.

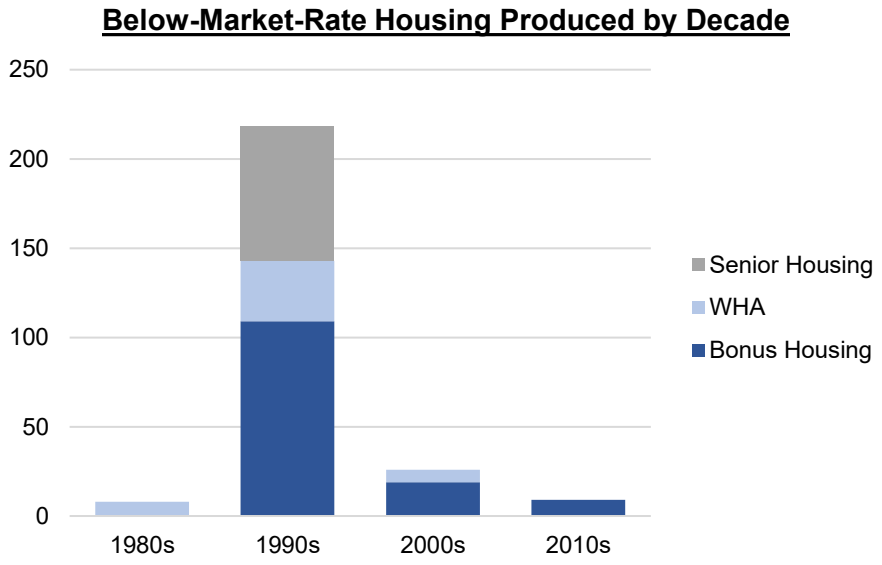


Figure 4 Source: Village of Mamaroneck Planning Department

[2] One of these projects is a development in the RM-3 district that produced five additional affordable units via discretionary agreement with the Planning Board. It was included in this list as we believe the existence of the below-market-rate provision compelled the discussion and agreement.

After these three projects, the bonus was not used again for two decades, despite continued market-rate development in the C-2 district (to be discussed below). In 2018 and 2019, three smaller developments produced nine new units of affordable housing, the first use of the policy since 2000. The smaller scale of these developments meant less affordable housing was produced compared to the projects from the 1990s. Despite declines in the quantity, the ratio of below-market-rate units to market rate units remains roughly the same in the C-1 zone. Recent developments have been limited in size due to 1) changes to the Village's zoning code that reduced density, 2) reduced availability of larger parcels, 3) rising construction costs, and 4) difficulty in meeting parking requirements.

Developments in the C-2 district have not utilized the bonus.

Except for the Regatta, which had the support of a local development corporation (LDC), none of these bonus-users have been in the C-2 zone, where the stringent 100% affordability requirement has turned away developers that do not have public or nonprofit financial support for their project. This missed opportunity resulted in the condominium boom that took place is the 2000s in the Village downtown not producing any below-market-rate units. Since 2005, six projects in the C-2 have produced 155 housing units; none of which were below-market rate.

Much of the affordable housing produced by the bonus is no longer protected.

Due to the previously mentioned 20-year sunset on condominium affordability, the 122 below-market-rate condominiums built in the 1980s and 1990s have lost their protections and now function as conventional market-rate housing. This loss has substantially eroded the affordable housing inventory in the Village. As of 2019, the number of affordable housing units in Mamaroneck is less than the number in 1997 (see Figure 5).

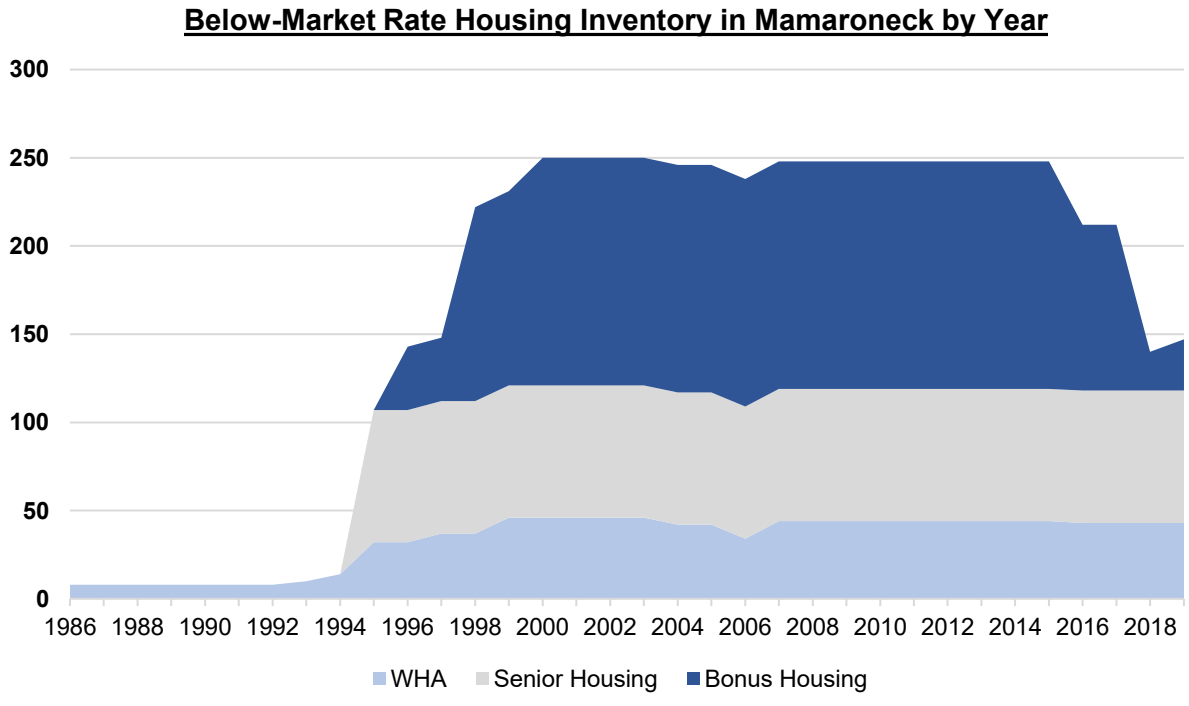


Figure 5 Source: Village of Mamaroneck Planning Department

Policy Changes for Consideration

Considering the observed shortcomings of the current policy, several strategies contained below should be considered to increase the ability for the below-market-rate bonus to work as intended and provide affordable housing in the Village of Mamaroneck.

Change the C-2 District below-market-rate requirements to match the bonus in the C-1/TOD.

As the most walkable, transit-rich, and amenity-rich area of the Village, the Downtown has the greatest ability to cater to the needs of low-income households (it is also the lowest income census block group in the Village). Providing affordable housing in the C-2 district can allow the neediest households to access the many resources and opportunities available at the center of the Village.

The 100% affordability requirement on the C-2 bonus has proven unworkable for most developers. The C-1 bonus that only requires some units to be affordable has been successfully used multiple times and is more likely to result in the actual production, and consistent production, of affordable housing. Allowing the C-2 bonus to work in this manner will allow new affordable housing to be produced in the C-2 district. Furthermore, mixed-income buildings such as those produced by the below-market-rate bonus have been shown to lead to improved outcomes for low-income tenants and greater social cohesion[3].

Reduce parking requirements for affordable housing units

Studies have demonstrated that lower-income households have fewer cars on average and are more likely to rely on walking, cycling, and public transit than middle-and-high income peers in the same neighborhood[4]. Reducing parking requirements for affordable units reduces the cost of producing affordable housing, ensures low-income households with fewer cars are not "forced" to pay for parking they do not need, and incentivizes developers to provide additional affordable units if they have a need to reduce their on-site parking. The provision of additional unused parking unnecessarily contributes to the overall cost of the development which contributes to higher rents for tenants.

Provide larger density bonuses for higher percentages of affordable units and/or deeper levels of affordability

By building more units on the same size parcel, this allows nonprofit mission-based developers to reduce their per unit costs and more easily finance and build affordable housing, particularly on small parcels in space-constrained areas such as the Village Downtown. This would greatly help groups such as WHA who have had trouble finding parcels with sufficient development capacity for their projects to qualify for LIHTCs.

Provide financial, logistical, or in-kind assistance to nonprofits seeking to build and/or acquire affordable housing.

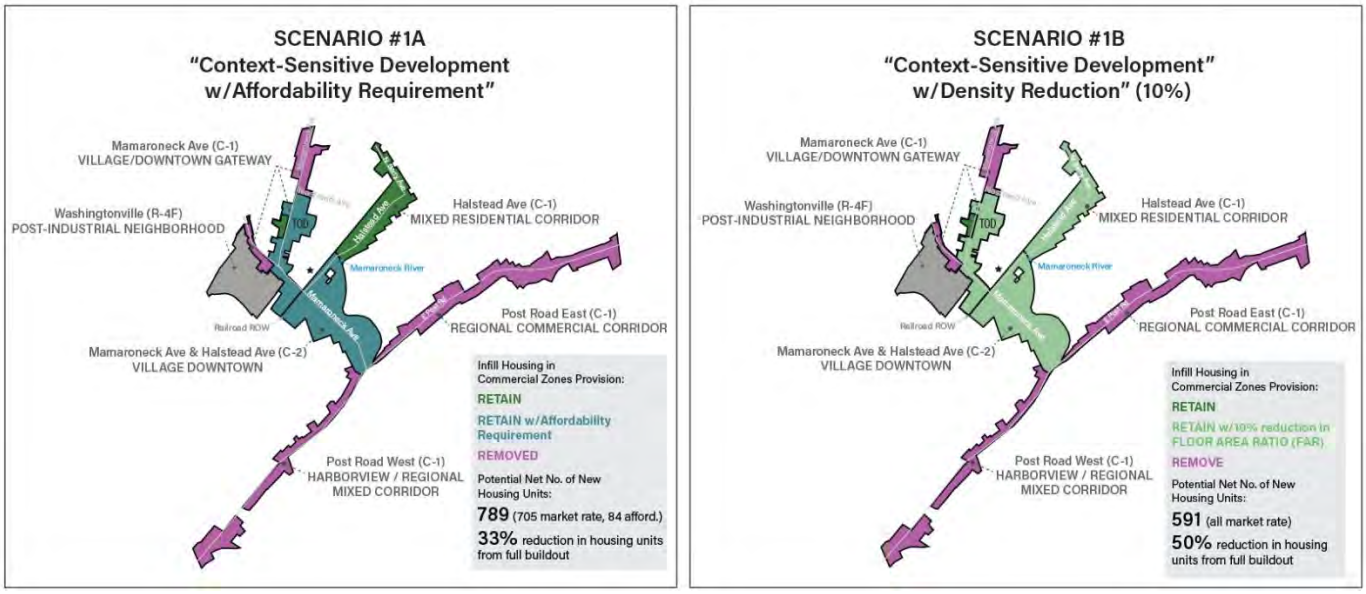
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[3] Source: Chyn; *Moved to Opportunity: The Long-Run Effect of Public Housing Demolition on Labor Market Outcomes of Children*, 2016

[4] Source: McDonnell, Madar, and Been; *Minimum Parking Requirements, Transit Proximity and Development in New York City*, 2010

Nonprofit groups such as WHA have been an important part of Mamaroneck's affordable housing landscape. Funding for such groups to expand their mission continue to be scarce, hampering the continued creation of below-market rate housing in the Village. Making resources available for nonprofit affordable housing developers to reduce their costs, including tax incentives, support from Village staff, a streamlined development approval process, or even (if the right situation presents itself) access to Village-owned land. In order to provide tax incentives and facilitate offering other services to non-profit affordable housing developers, the Village would likely need to form a Local Development Corporation or Industrial Development Agency to coordinate such efforts.

Integration of Findings with Moratorium Scenarios



With the Board of Trustees currently debating two scenarios for the post-moratorium infill housing, it is natural to discuss how changes to the zoning code's affordable housing provision interacts with and can be subsumed within the proposed change scenarios that have been advanced by the discussion.

Scenario 1A

Scenario 1A's mandatory requirement for below-market-rate housing will result in all development with five or more units in the infill housing area requiring below-market-rate housing. If inclusionary below-market-rate housing becomes mandatory, the village should ensure that projects in the C-2 still "pencil out" (since developers are already providing below-market-rate housing at the same percentage as proposed in the C-1 we assume it "pencils out"). An unreasonable requirement for affordable housing would amount to a *de facto* ban on all development, affordable or otherwise and work against the goal to produce affordable housing opportunities.

Reducing parking requirements will help all projects with below-market housing developed under Scenario 1A, for-profit, and nonprofit alike. The recommendations to provide larger density bonuses for nonprofit projects with higher levels of affordability and providing assistance or support to nonprofit housing providers is also compatible with this scenario.

Scenario 1B

If Scenario 1B is implemented, the FAR reductions will result in further reductions in the amount of affordable housing produced via for-profit development. At lower densities, projects are less likely to elect to utilize the bonus, as can be seen with the many existing townhome developments in the Village that choose not to utilize the bonus.

Given this likely lack of private sector enthusiasm for a bonus under such a scenario, instituting the recommendation for larger density bonuses for higher levels of affordability is critical to make sure nonprofit projects can find sites amenable to the density needed for their projects to

be built and that below-market-rate housing opportunities will continue to exist in the Village. WHA has already had difficulty finding suitable development sites in the village, lowering FAR without allowing for larger density bonuses for such projects will make that difficulty worse. Reducing parking requirements for affordable housing and setting up a system to support and assist nonprofit developers will also help the production of below-market-housing by nonprofit developers.

Village of Mamaroneck
Planning Department

Memo

To: Dan Sarnoff, Acting Village Manager

From: Greg Cutler, Village Planning; Matthew da Silva, Assistant Village Planner

CC: Mayor and Board of Trustees; Neil Desai, NV5

Date: January 23, 2019

Re: Impacts of Proposed Infill Housing Zoning Scenarios

On January 8th, 2019, The Village of Mamaroneck Planning Department presented two proposals for modifications to the infill housing provision for commercial districts for consideration to the Board of Trustees. In response to requests from the Board for more information on the projected impacts of the proposals compared to the baseline scenario of a full buildout.

1. Scenario Summaries

The following scenarios are analyzed in this memo alongside a baseline scenario that assumes no change to current zoning regulations:

Scenario #1 – Balanced, Context-Sensitive Development This scenario is the basis of PLL-C

1. Infill Housing Provision is eliminated on Boston Post Road, and the uppermost section of Mamaroneck Ave.
2. Infill housing is retained in the Village Downtown, Transit-Oriented Development District, and Halstead Ave.
3. Mandatory Inclusion of Below Market Rate Housing is added as a requirement in the Village Downtown, the Transit-Oriented Development District and the RM-3 District.
4. Where the Infill Housing Provision is retained, maximum FARs remain the same.[1]
5. Dimensional regulations remain unchanged for the R-4F, RM-1, RM-2, and RM-3 districts.[2]

Scenario #2A – Villagewide Density Reduction (25% FAR Reduction)

1. Infill Housing Provision is retained Village-wide.
2. FAR is reduced by 25% in the C-1, C-2, and C-1-TOD districts.
3. Regulations remain unchanged for the R-4F, RM-1, RM-2, and RM-3 districts.

Scenario #2B – Villagewide Density Reduction (10% FAR Reduction)

1. Infill Housing Provision is retained Village-wide.
2. FAR is reduced by 10% in the C-1, C-2, and C-1-TOD districts.
3. Regulations remain unchanged for the R4F, RM-1, RM-2, and RM-3 districts.

[1] Maximum FARs would be inclusive of the current .2 FAR bonus for affordable units- which would be mandatory under this scenario. Other density bonus provisions would remain but would not be included in the base FAR.
[2] Ibid

Scenario Changes since January 8th:

1. In recognition that the unique character of the C-1 Halstead Ave area necessitates a comprehensive examination of creative re-zoning options that is beyond the scope of this item and may delay effective resolution of the moratorium, many of the modifications to the Halstead Ave district proposed in the previous version of Scenario #1 have been removed.

2. Scenario #2 has been split into Scenario #2A, the original 25% FAR reduction, and Scenario #2B, a 10% FAR reduction. This change honors a request by the Mayor and Board of Trustees to examine different gradations in FAR reduction.

2. Comparison of Development Impacts

Below are comparisons among the various scenarios and the baseline no-action scenario in multiple key metrics. For more detailed data on each scenario, please see the report Appendix.

New Housing Units

As can be seen in the below chart, Scenarios #1 and #2A both result in a commensurate reduction in net housing units in the Village, at 33% and 35% less than the baseline no-action scenario. Scenario #2B results in a 20% reduction in unit capacity. In Scenarios #2A and #2B, reductions outpace FAR reduction due to the higher likelihood of new retail development in the C-2 at lower FARs and the elimination of townhome redevelopment on some parcels where development at lower FARs proved no longer viable.

Net New Housing Units by Scenario & Character District

Character District	Baseline Scenario: No Action	Scenario #1: Balanced, Context-Sensitive Development	Scenario #2A: Villagewide Density Reduction (25%)	Scenario #2B: Villagewide Density Reduction (10%)
HALSTEAD AVE (C-1)	69	69	36	58
MAMARONECK AVE & HALSTEAD AVE (C-2)	569	569	338	393
MAMARONECK AVE (C-1)	41	0	28	36
MAMARONECK AVE TOD (RM-3 & C-1)	109	109	81	98
POST ROAD EAST (C-1)	215	0	156	193
POST ROAD WEST (C-1)	126	0	85	111
WASHINGTONVILLE (R-4F)	42	42	42	42
GRAND TOTAL	1171	789	766	931
% CHANGE FROM BASELINE	0%	33%	35%	20%

Commercial Contraction

Contraction of commercial space is anticipated in all three proposed scenarios as well as the baseline scenario as commercial properties are redeveloped as residential properties. The more commercial contraction there is, the more likely the Village and School District will depend on residential property taxes for revenue. As can be seen in the below chart, commercial contraction is considerably lessened in Scenario #1, where commercial contraction is shielded by disallowing residential development on the Boston Post Road and on the northernmost reaches of Mamaroneck Ave. Scenarios #2A and #2B only marginally decrease commercial contraction. Scenario #2B is notable in that commercial contraction is only lessened in the C-2 district in the Village Downtown.

Contraction of Commercial Space by Scenario and Character District (in Square Feet)

Character District	Baseline Scenario: No Action	Scenario #1: Balanced, Context-Sensitive Development	Scenario #2A: Villagewide Density Reduction (25%)	Scenario #2B: Villagewide Density Reduction (10%)
HALSTEAD AVE (C-1)	-52978	-52978	-42984	-52978
MAMARONECK AVE & HALSTEAD AVE (C-2)	-104376	-104376	-84756	-94626
MAMARONECK AVE (C-1)	-43497	0	-43497	-43497
MAMARONECK AVE TOD (RM-3 & C-1)	-68601	-68601	-68601	-68601
POST ROAD EAST (C-1)	-128616	0	-121936	-128616
POST ROAD WEST (C-1)	-74002	0	-71067	-74002
WASHINGTONVILLE (R-4F)	-1043	-1043	-1043	-1043
GRAND TOTAL	-473113	-226998	-433884	-463363
% CHANGE FROM BASELINE	0%	52%	8%	2%

Other Anticipated Impacts

Several key differences between the scenarios have major implications on the nature and magnitude of impact on the Village.

Walkability, Automobile Use, and Traffic: By locating most new housing within walking distance of the Village downtown and the Metro-North station, Scenario #1 will attract residents who are likely to drive less, walk more, and take public transit to work, lessening the per capita traffic impact. More of this traffic impact will be concentrated in the downtown area, sparing other areas of the Village from traffic woes. By spreading new housing throughout the village, Scenarios #2A and #2B will attract residents who are likely to drive more, negatively affecting traffic throughout the Village.

Village Character: New housing near the Village downtown as proposed in Scenario #1 will enhance the area's current environment as a mixed-use residential-commercial center, adding apartments and townhomes to an area where they already exist. More residents within walking distance of downtown shops is likely to help increase the quality and variety of downtown shopping options. Disallowing new residential development along the Post Road will preserve the corridor's existing character as an

automobile-based commercial district. Scenarios #2A and #2B do not appreciably enhance or detract from the current character of the Village downtown. It will contribute to a shift in the Post Road corridor from a commercial character to that of commercial interspersed with modern townhome developments.

Affordable Housing Production: Scenario #1 allows for the imposition of Mandatory Inclusionary Zoning in the C-2 and TOD districts, since FARs will be sufficient for developments with included affordable housing to 'pencil out'. Scenarios #2A and #2B do not allow for such policies.

Appendix: Detailed Scenario Impacts

Baseline Scenario: No Action

Summary:

1. No change to current zoning regulations.
2. Infill housing is retained is retained Village-wide.

Character District	New Townhomes	New Apartments	Loss of Existing Rental Units	Loss of Existing Owned Units	Lost Commercial Space (sq. ft)	New Commercial Space (sq. ft)
HALSTEAD AVE (C-1)	97	12	-28	-12	-52978	0
MAMARONECK AVE & HALSTEAD AVE (C-2)	99	529	-42	-17	-136876	32500
MAMARONECK AVE (C-1)	52	0	-11	0	-43497	0
MAMARONECK AVE TOD (RM-3 & C-1)	71	41	-3	0	-68601	0
POST ROAD EAST (C-1)	73	146	-3	-1	-128616	0
POST ROAD WEST (C-1)	97	56	-27	0	-74002	0
WASHINGTONVILLE (R-4F)	184	0	-57	-85	-1043	0
GRAND TOTAL	**673**	**784**	**-171**	**-115**	**-505613**	**32500**

Scenario #1: Balanced Context-Sensitive Development

Summary of Actions:

1. Infill Housing Provision is eliminated on Boston Post Road, and the uppermost section of Mamaroneck Ave.
2. Infill housing is retained in the Village Downtown, Transit-Oriented Development District, and Halstead Ave.
3. Mandatory Inclusion of Affordable Housing is added as a requirement in the Village Downtown, the Transit-Oriented Development District and the RM-3 District
4. Where the Infill Housing Provision is retained, FARs remain unchanged.
5. Regulations remain unchanged for the R4F, RM-1, RM-2, and RM-3 districts

Character District	New Townhomes	New Apartments	Loss of Existing Rental Units	Loss of Existing Owned Units	Lost Commercial Space (sq. ft)	New Commercial Space (sq. ft)
HALSTEAD AVE (C-1)	97	12	-28	-12	-52978	0
MAMARONECK AVE & HALSTEAD AVE (C-2)	99	529 (70 Affordable)	-42	-17	-136876	32500
MAMARONECK AVE (C-1)	0	0	0	0	0	0
MAMARONECK AVE TOD (RM-3 & C-1)	71	41 (14 Affordable)	-3	0	-68601	
POST ROAD EAST (C-1)	0	0	0	0	0	0
POST ROAD WEST (C-1)	0	0	0	0	0	0
WASHINGTONVILLE (R-4F)	184	0	-57	-85	-1043	0
GRAND TOTAL	**451**	**582**	**-130**	**-114**	**-259498**	**32500**

*Scenario 1 represent the anticipated conditions under PLL-C.

Scenario #2A: Village-wide Reduction in Development Capacity (25%)

Summary:

1. Infill Housing Provision is retained Village-wide
2. FAR is reduced by 25% in the C-1, C-2, and C-1-TOD districts.
3. Regulations remain unchanged for the R4F, RM-1, RM-2, and RM-3 districts

Character District	New Townhomes	New Apartments	Loss of Existing Rental Units	Loss of Existing Owned Units	Lost Commercial Space (sq. ft)	New Commercial Space (sq. ft)
HALSTEAD AVE (C-1)	53	9	-20	-6	-42984	0
MAMARONECK AVE & HALSTEAD AVE (C-2)	41	344	-42	-5	-130256	45500
MAMARONECK AVE (C-1)	39	0	-11	0	-43497	0
MAMARONECK AVE TOD (RM-3 & C-1)	53	31	-3	0	-68601	0
POST ROAD EAST (C-1)	50	110	-3	-1	-121936	0
POST ROAD WEST (C-1)	70	42	-27	0	-71067	0
WASHINGTONVILLE (R-4F)	184	0	-57	-85	-1043	0
GRAND TOTAL	**490**	**536**	**-163**	**-97**	**-479384**	**45500**

Scenario #2B: Village-wide Reduction in Development Capacity (10%)

Summary:

1. Infill Housing Provision is retained Village-wide
2. FAR is reduced by 10% in the C-1, C-2, and C-1-TOD districts.
3. Regulations remain unchanged for the R4F, RM-1, RM-2, and RM-3 districts

Character District	New Townhomes	New Apartments	Loss of Existing Rental Units	Loss of Existing Owned Units	Lost Commercial Space (sq. ft)	New Commercial Space (sq. ft)
HALSTEAD AVE (C-1)	87	11	-20	-6	-52978	0
MAMARONECK AVE & HALSTEAD AVE (C-2)	69	370	-42	-5	-136876	42250
MAMARONECK AVE (C-1)	47	0	-11	0	-43497	0
MAMARONECK AVE TOD (RM-3 & C-1)	64	37	-3	0	-68601	0
POST ROAD EAST (C-1)	66	131	-3	-1	-128616	0
POST ROAD WEST (C-1)	87	50	-27	0	-74002	0
WASHINGTONVILLE (R-4F)	184	0	-57	-85	-1043	0
GRAND TOTAL	**604**	**599**	**-163**	**-97**	**-505613**	**42250**

Village of Mamaroneck
Planning Department

Memo

To: Dan Sarnoff, Acting Village Manager

From: Greg Cutler, Village Planning; Matthew da Silva, Assistant Village Planner

CC: Mayor and Board of Trustees; Neil Desai, NV5

Date: February 7, 2019

Re: School District Projections for Scenarios #1A and #1B

In response to a request by the Board of Trustees, contained herein are estimates for the number of school-age children in each character district for each buildout scenario. Percent reduction in school-age children is similar to the percent reduction in total residential units for each scenario.

Projected School-Age Children Counts by Scenario and Character District

Scenario	Halstead Avenue (C-2)	Mamaroneck Ave & Halstead Ave (C-2)	Mamaroneck Ave TOD (RM-3 & C-1)	Washingtonville (R-4F)	Post Road East (C-1)	Post Road West (C-1)	Mamaroneck Ave (C-1)	Total Schoolchildren	Percent Difference from Full Buildout
Full Buildout	47	135	45	42	66	62	27	**471**	**N/A**
Scenario #1A	47	135	45	42	0	0	0	**316**	**-33%**
Scenario #1B	39	93	40	42	0	0	0	**215**	**-54%**

1 Note: Total schoolchildren is calculated from unrounded numbers, accounting for slight discrepancies between character district counts and totals

* Scenario 1A represents PLL-C.

Moratorium Study

Village of Mamaroneck, NY

Presentation of Findings

January 30, 2019

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1. Background



1. Background

The Village of Mamaroneck adopted a law in March 2018 that imposes a moratorium on multi-family dwellings resulting in three or more residences and residential subdivisions resulting in two or more new lots.

- The Board of Trustees found "that there is a legitimate concern that the present zoning permitting multifamily dwellings and subdivisions will create excessive traffic and congestion in the Village, will overtax the Village's infrastructure, will exacerbate overcrowding in schools and will, potentially, change the character of the Village."
- The Board of Trustees requested a study that will assess these concerns. The study involved conducting a "build-out analysis" to gauge the full potential for multifamily redevelopment in the moratorium area as currently permitted under existing zoning and to assess its positive and negative impacts in terms of fiscal, school, traffic, infrastructure, and other matters.
- The purpose of this presentation is to summarize the findings of all the analyses and present a framework for making decisions about the Infill Housing Provision and further zoning modifications.

1. Background

How and when did multifamily development become permitted in traditionally commercial zones (C-1 and C-2 zones)?

- Had already been permitted in C-2 zones (circa 1983).
- *Origin*: 1985 Housing Study.
- *Original Intent*: To address unmet demand for middle-income housing.
- *Code*: §342-50 Residence Uses in Commercial Districts, a.k.a. "Infill Housing Provision."

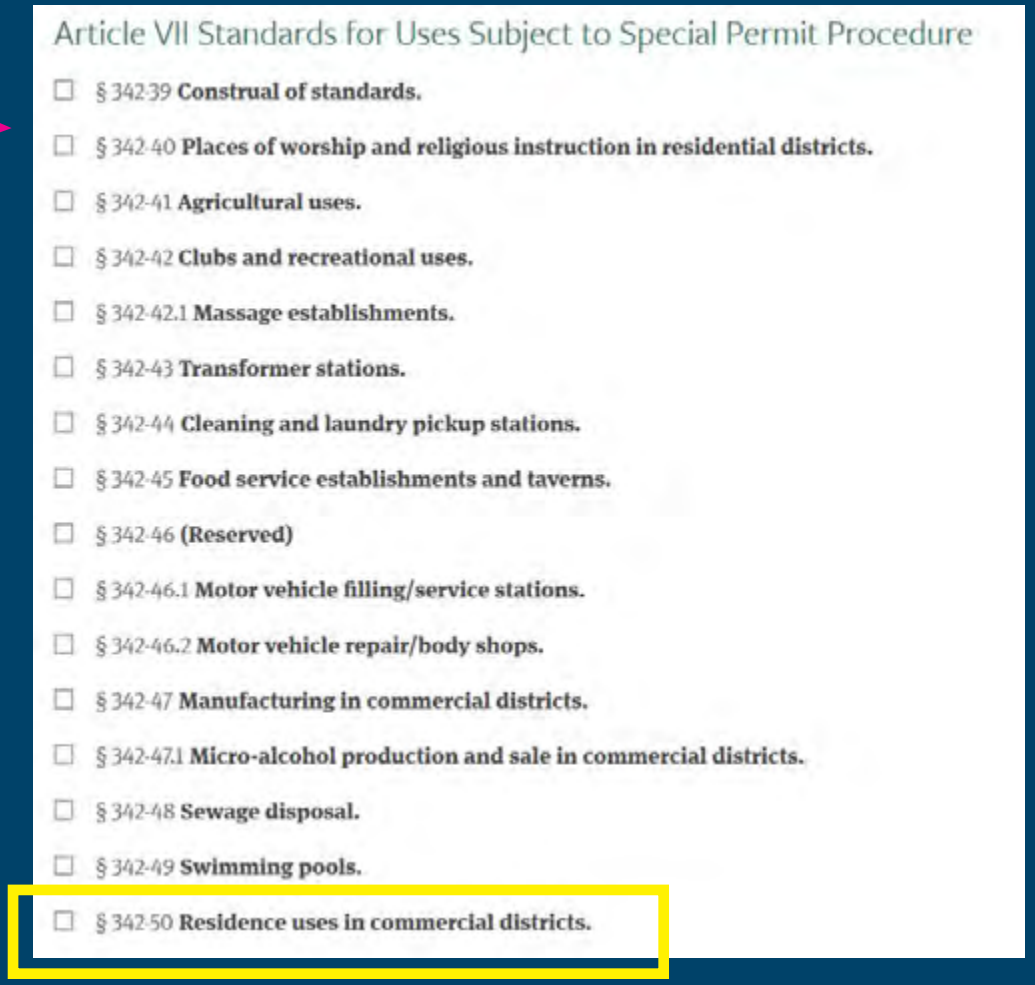
According to the 2012 Comprehensive Plan (p. 119) under 8.2e Infill Housing in the C-1 Zone:

"Residential uses are ... allowed by special permit in the C-1 and C-2 zones, according to the infill housing provision of the Zoning Code. This provision implemented ... a 1985 housing study that sought to promote the creation of new middle-income units in the ... C-1 zone (residential units were ... allowed in the C-2 district at the time of the study). Infill housing was intended to address unmet demand for middle-income housing within the Village. While this [is] an important objective, concern has been raised regarding ... size and setbacks ...."

1. Background

Where in the Zoning Code is the Infill Housing provision located? When was it adopted?

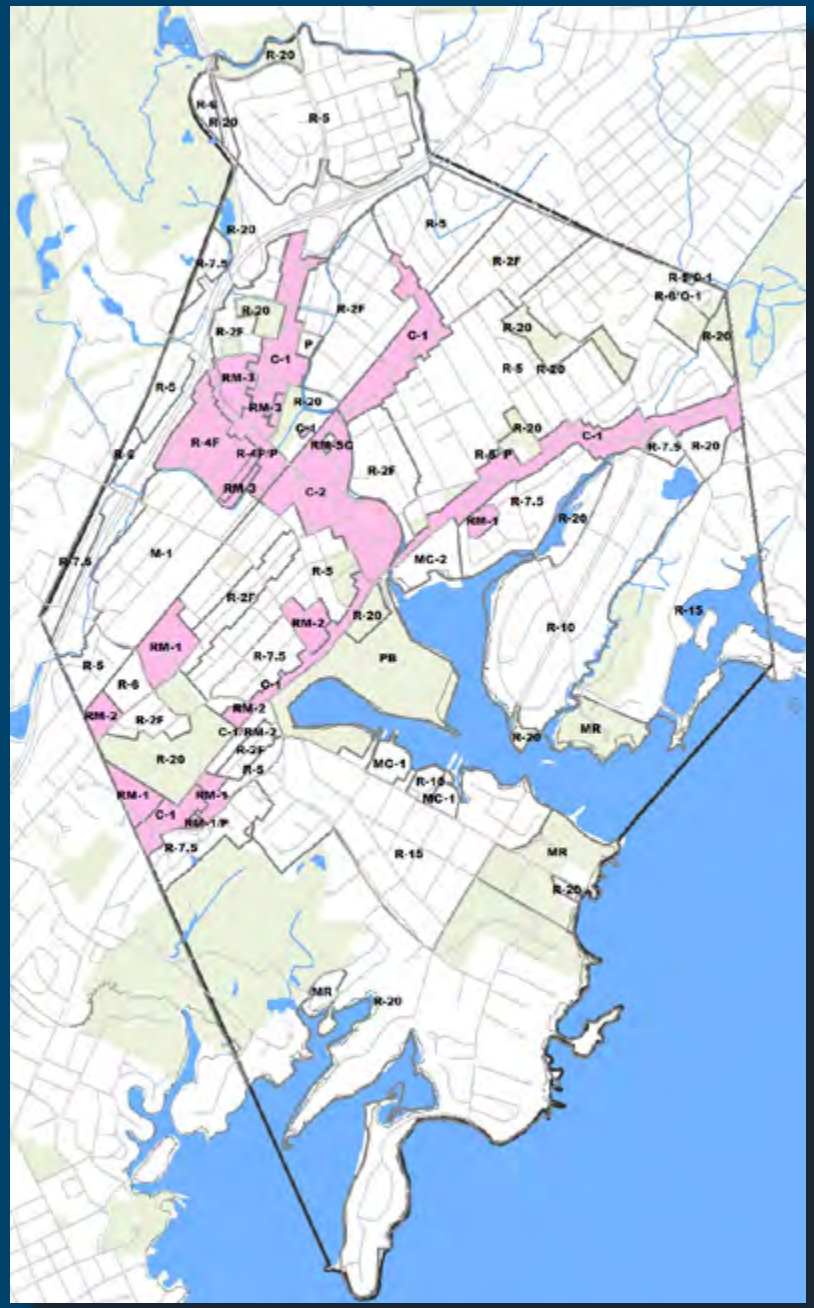
- Article VII. Standards for Uses Subject to Special Permit Procedure
  - §342-50 Residence Uses in Commercial Districts.
- Amended in 1986 to permit multifamily development in C-1 zones.



1. Background

To what areas in the Village does the moratorium apply?

- Applies to zoning districts where multifamily developments or subdivisions that result in three or more residences are permitted (i.e., R-4F, RM-1, RM-2, RM-3, and—through §342-50, the "Infill Housing Provision"—C-1, and C-2).
- Properties along Mamaroneck Avenue, Halstead Avenue, E. and W. Post Road, plus The Flats.



1. Background

When did the moratorium start and when does it end?

- Started on March 12, 2018 and initially expected to end six months later, on September 12, 2018.
- Extended to March 16, 2019.

Local Law D-2018 established a six-month moratorium on the acceptance, processing, and approval of applications concerning multi-family developments or subdivisions that would result in three or more residences for application received after March 12, 2018.

The moratorium was adopted for a six month period, and has recently been extended to March 16, 2019 in order to have sufficient time to complete the Moratorium Study, coordinate with the Comprehensive Plan Update, and adopt recommendations.

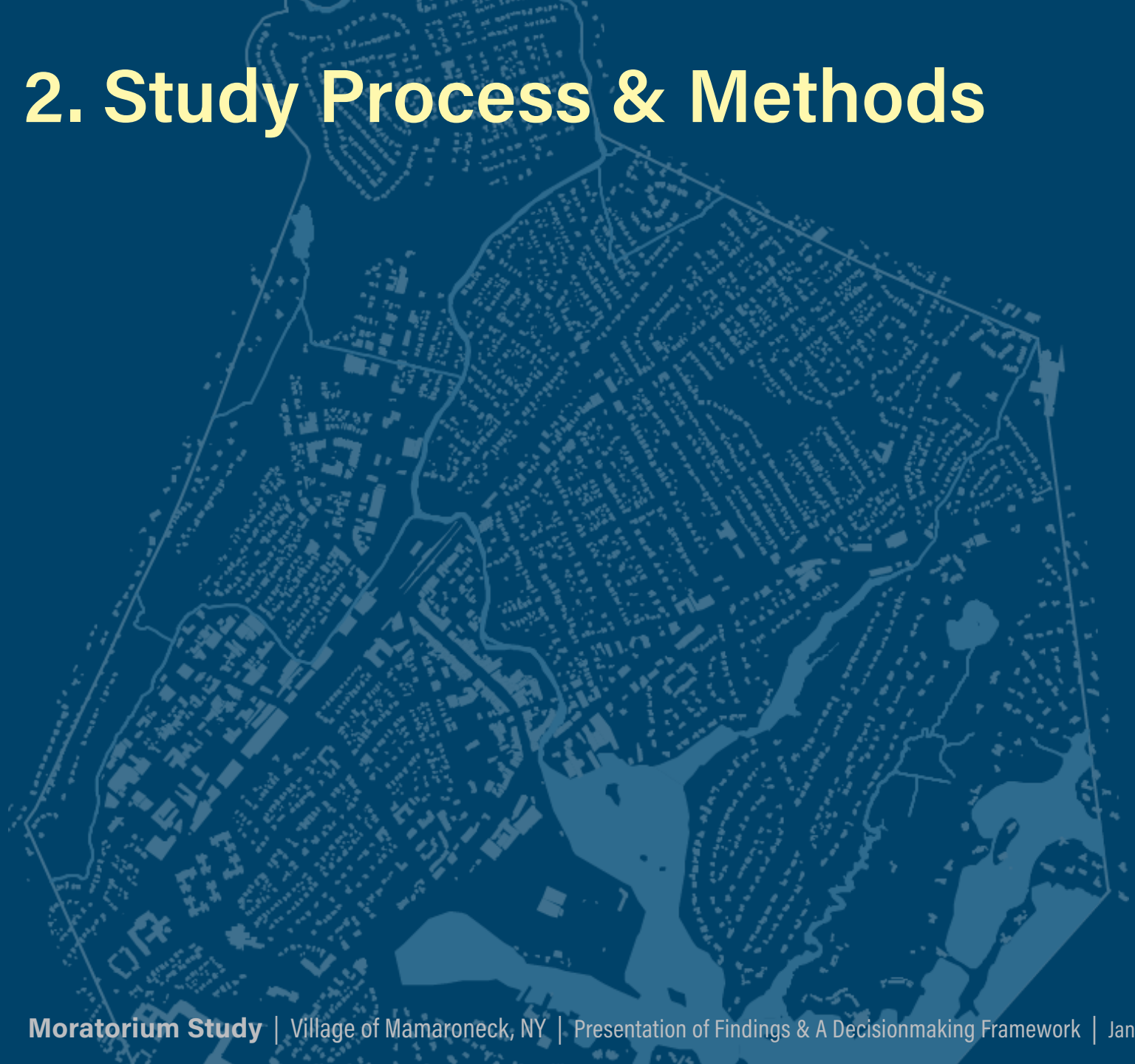
1. Background

What is the relationship between the Moratorium Study and the Comprehensive Plan Update?

- The Comprehensive Plan Update is a framework through which to inform decisions about the future of the Infill Housing Provision based on the results of the Moratorium Study.
- The detailed research and analysis of the Moratorium Study results should inform policies in the Comprehensive Plan Update.

- ✓ Invest in a Pleasant Quality-of-Life
- ✓ Preserve Village & Neighborhood Character
- ✓ Maintain Diversity & Affordability
- ✓ Support & Encourage Walking and Bicycling
- ✓ Protect & Improve the Environment
- ✓ Be Prepared for Storms, Floods, and Rising Sea Levels

2. Study Process & Methods



2. Study Process & Methods

Mapping, Data Collection, Zoning Review

a. Create the Base Map

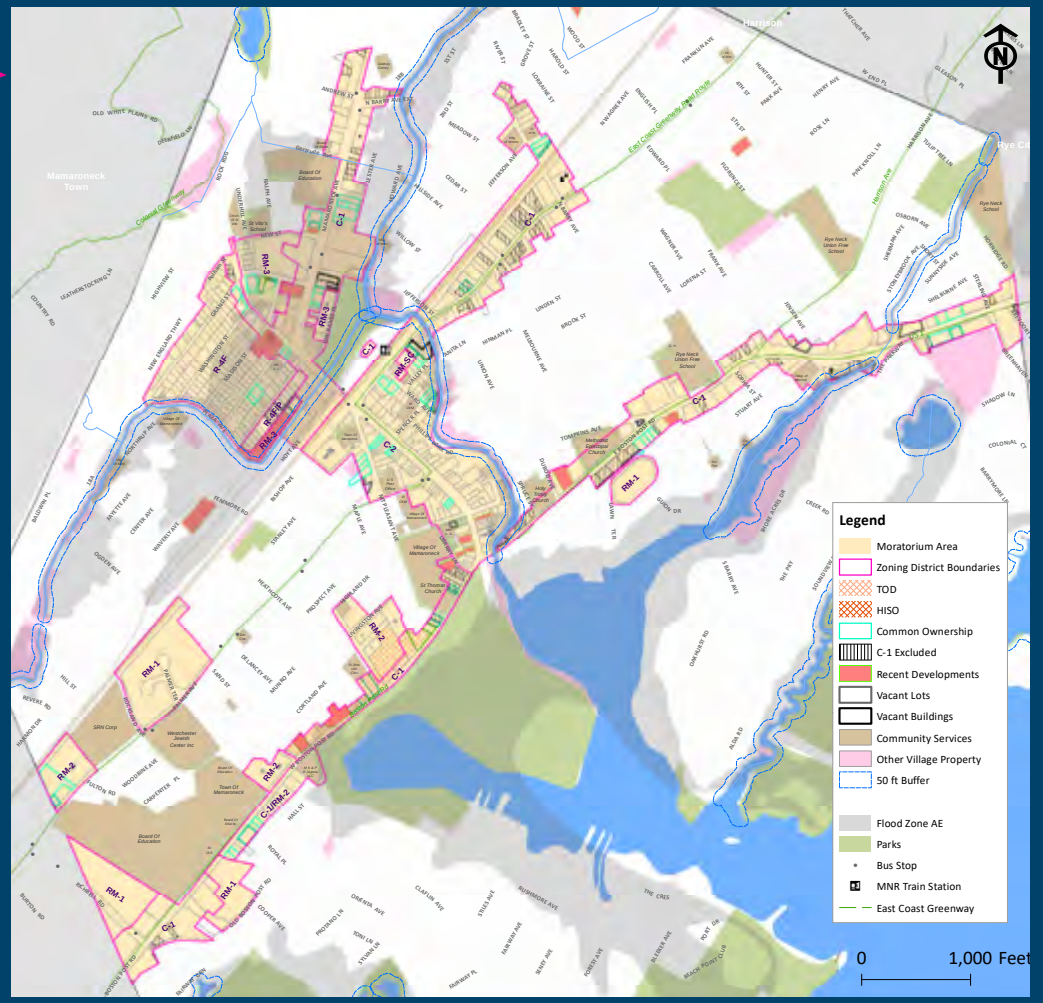
b. Retrieve & Analyze Property Assessment Data from Towns

c. Manually Determine Building Square Footage

d. Interview School Superintendents and WJWW

e. Examine & Summarize Relevant Zoning Provisions

f. Create Visual Model of the Moratorium Area for Presentation Purposes



2. Study Process & Methods

Summary Table of Zoning Districts Subject to the Moratorium

VILLAGE OF MAMARONECK, NY - MORATORIUM ZONING SUMMARY												
		Under § 342-50 Residence Uses in Commercial Districts										
Districts ->		**C-1**	**C-1m**	**C-1b**	**C-1v**	**C-1o**	**C-2**	**TOD Overlay**	**RM-1**	**RM-2**	**RM-3**	**R-4F**
Frontage ->			Mamaroneck Ave	Boston Post Road	Van Rast Pl	Old White Plains Rd						
Max Lot Area	sf	40,000	40,000	40,000	40,000	40,000	n/a	n/a	n/a	n/a	n/a	n/a
FAR		0.6	0.6	0.6	0.6	0.6	2.0	0.6	0.5	0.8	1.2	0.7
FAR max w/bonus		0.8	0.8	0.8	0.8	0.8	2.5	1.5	n/a	n/a	n/a	n/a
Min Lot Width	f	50	50	50	50	50	n/a	50	150	150	100	50
Min Lot Depth	f	100	100	100	100	100	n/a	100	150	150	100	100
Min Lot Area	sf	5,000	5,000	5,000	5,000	5,000	n/a	5,000	40,000	20,000	7,500	n/a
Min Lot Area (per du)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	2,500	1,500	800	2,500
Max Stories		3.0	4.0	4.0	4.0	4.0	4.0	3.0 or 4.0	2.5	3.0	4.0	2.5
Max Stories on Wide Streets		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.5	4.5	n/a
Max Height	f	40	50	45	40	50	45	40 or 50	35	40	50	35
Max Height w/bonus		n/a	n/a	n/a	n/a	n/a	60	n/a	n/a	n/a	n/a	n/a
Max Coverage	%	30	35	35	30	35	n/a	50	25	30	50	35
Max Coverage w/bonus	%	35	n/a	n/a	35	35	n/a	n/a	n/a	n/a	n/a	n/a
Min Front Yard	f	20	20	20	20	20	0	5	40	25	5	20
Min Lesser Side	f	10	10	10	10	10	0	20	30	25	8	16
Min Two Sides Combined	f	20	20	20	20	20	0	8	60	50	20	6
Min Rear Yard	f	25	25	25	25	25	10	25	25	25	25	25
Min Pkg & Dwy Setback	f	5	5	5	5	5	n/a	5	5	5	5	5
Usable Open Space Req (per u	sf	300	200	300	300	200	n/a	150	400	300	150	n/a
Min Pkg Req (per unit + br)		1+.5	1+.5	1+.5	1+.5	1+.5	1+.5	1+.25	1+.5	1+.5	1+.25	1+.5

While the moratorium includes subdivisions in residential districts (2+ lots), those districts are not included on this table.

2. Study Process & Methods

Bird's Eye Model of the Village Highlighting the Moratorium Area and Recently Redeveloped Properties



2. Study Process & Methods

Bird's Eye Model of the Village Highlighting the Moratorium Area, Recently Redeveloped Properties, Plus Photos

**Redevelopment Made Possible by the Infill Housing Provision*



2. Study Process & Methods

Collect Traffic Data

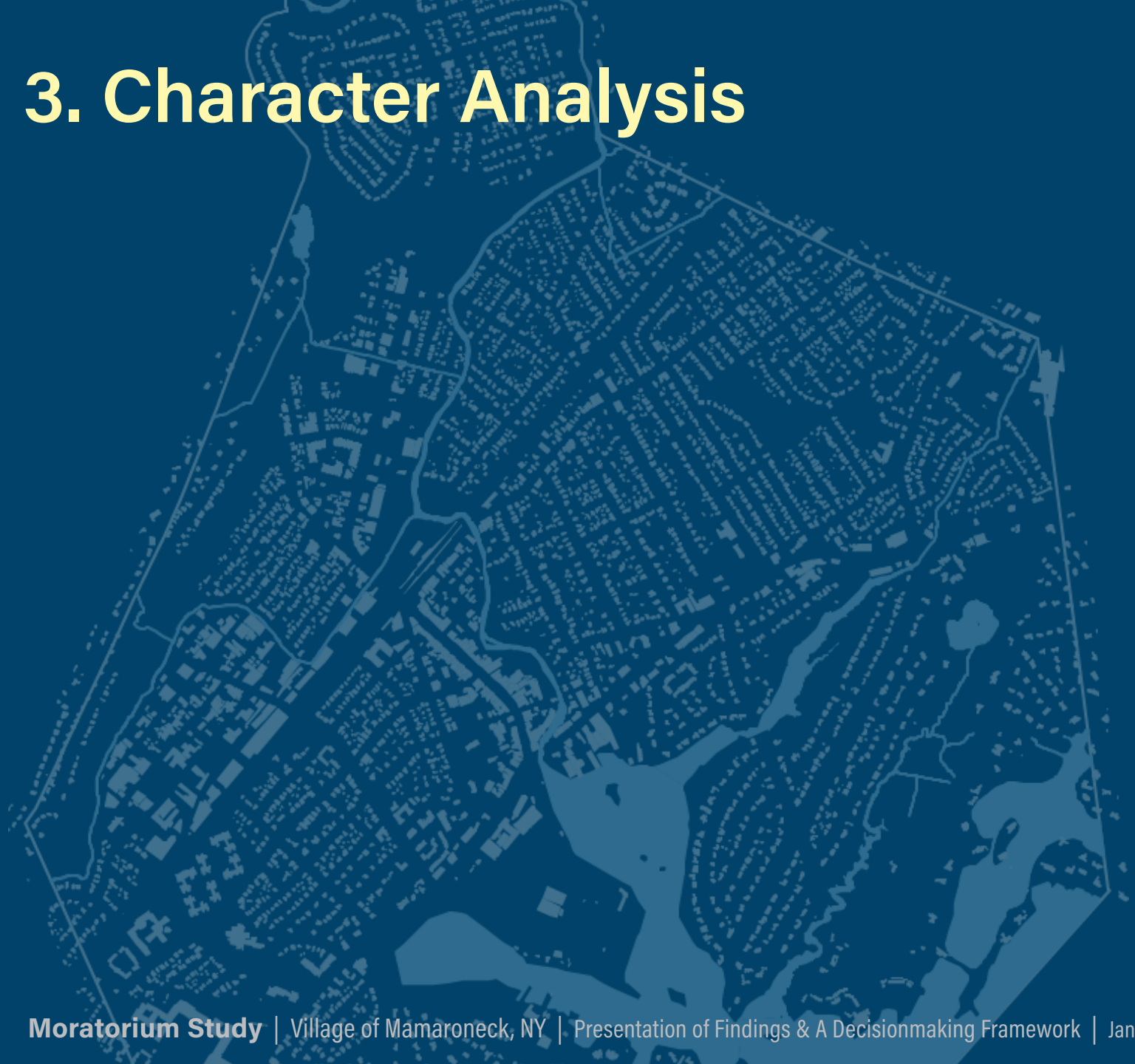
a. Collect Data at Key Intersections

- » Mamaroneck Ave and Andrew St/North Barry Ave Ext
- » Mamaroneck Ave and Waverly Ave/Van Ranst Pl
- » Mamaroneck Ave and Mt. Pleasant Ave/Halstead Ave
- » Mamaroneck Ave and E Boston Post Rd
- » E Boston Post Rd and North Barry Ave
- » W Boston Post Rd and Fenimore Rd

b. Collected on Thurs. June 14 & Sat. June 16, 2018



3. Character Analysis



3. Character Analysis

Organizing the Moratorium Area into Character Districts

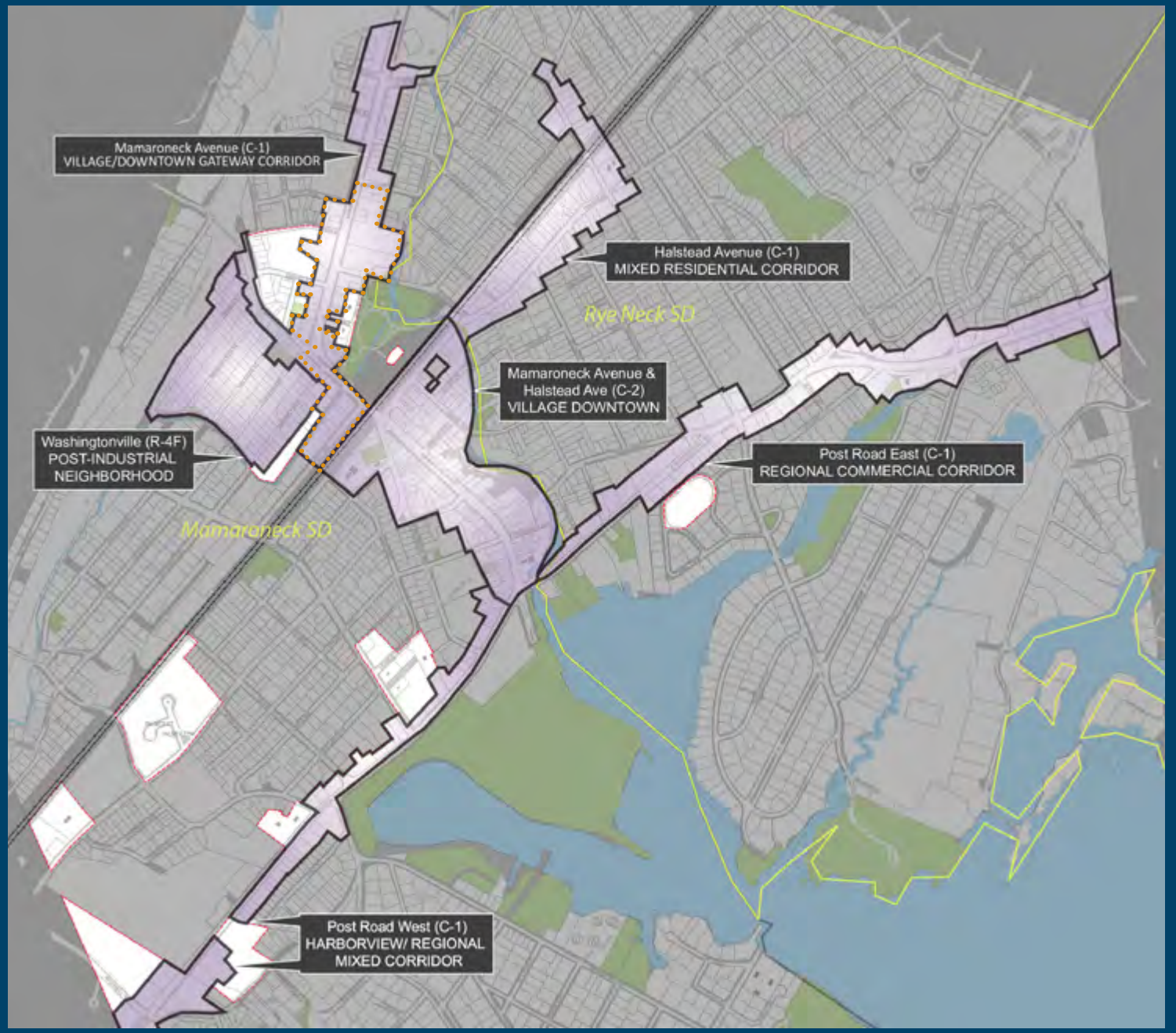
- "Character Districts" are based on existing zoning and the prevailing character of the built environment (building types, forms, scales, and uses along the street corridors)

Street Corridor & Zoning	Descriptive Name of Character District
WASHINGTONVILLE (R-4F)	"POST-INDUSTRIAL NEIGHBORHOOD"
MAMARONECK AVE (C-1)*	"VILLAGE/DOWNTOWN GATEWAY CORRIDOR"
MAMARONECK AVE & HALSTEAD AVE (C-2)	"VILLAGE DOWNTOWN"
POST ROAD WEST (C-1)	"HARBORVIEW/REGIONAL MIXED CORRIDOR"
HALSTEAD AVE (C-1)	"MIXED RESIDENTIAL CORRIDOR"
POST ROAD EAST (C-1)	"REGIONAL COMMERCIAL CORRIDOR"

** The Transit-Oriented Development Overlay Zoning District is located in this located in this area.*

3. Character Analysis

Map of Character Districts in the Moratorium Area



3. Character Analysis

Organizing the Moratorium Area into Character Districts

- The names of the districts are intended to be descriptive to capture the essence of the character of a particular district.
- Organizing the moratorium area into Character Districts can provide insight into the appropriateness of the newest developments in terms of building type, form, scale, use, and relationship to neighboring properties + relationship to street characteristics.
- Can serve as a decisionmaking framework for the Village in terms of how to modify the Infill Housing Overlay and other zoning parameters.

3. Character Analysis Washingtonville (R-4F): "POST-INDUSTRIAL NEIGHBORHOOD"

Traditional

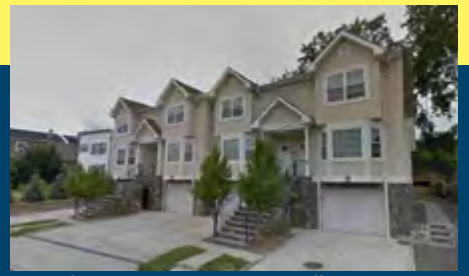

Multi-Family - 150 Grand St


Multi-Family - 256 Madison St


Multi-Family - 155 Washington St

Newer

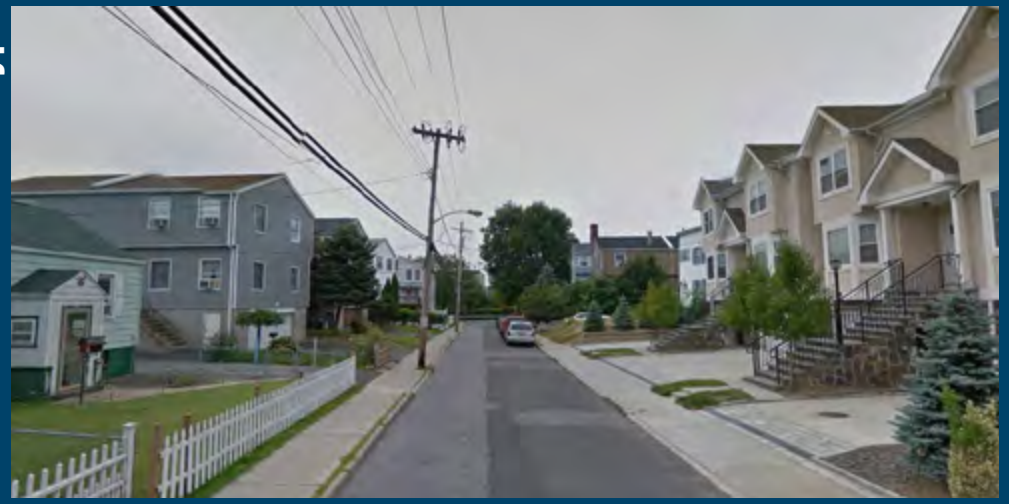

Multi-Family - 203 Grand St

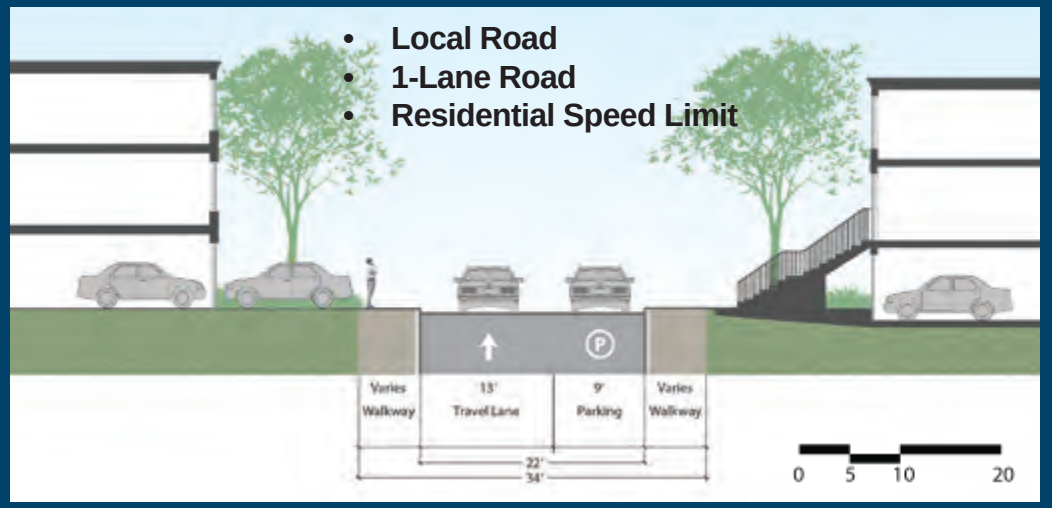

Townhomes - 231-237 Madison St


Multi-Family - 250 Washington St

- Predominantly residential (multi-family) buildings. Typically 1 to 2 stories (over a garage).

Street Type





3. Character Analysis Mamaroneck Avenue (C-1): "VILLAGE/DOWNTOWN GATEWAY CORRIDOR"

Traditional


Mixed Use - 155-157 Mamaroneck Ave


Apartments - 658 Mamaroneck Ave


Mixed Use - 614 Old White Plains Rd

Newer


Apartments - 690 Mamaroneck Ave

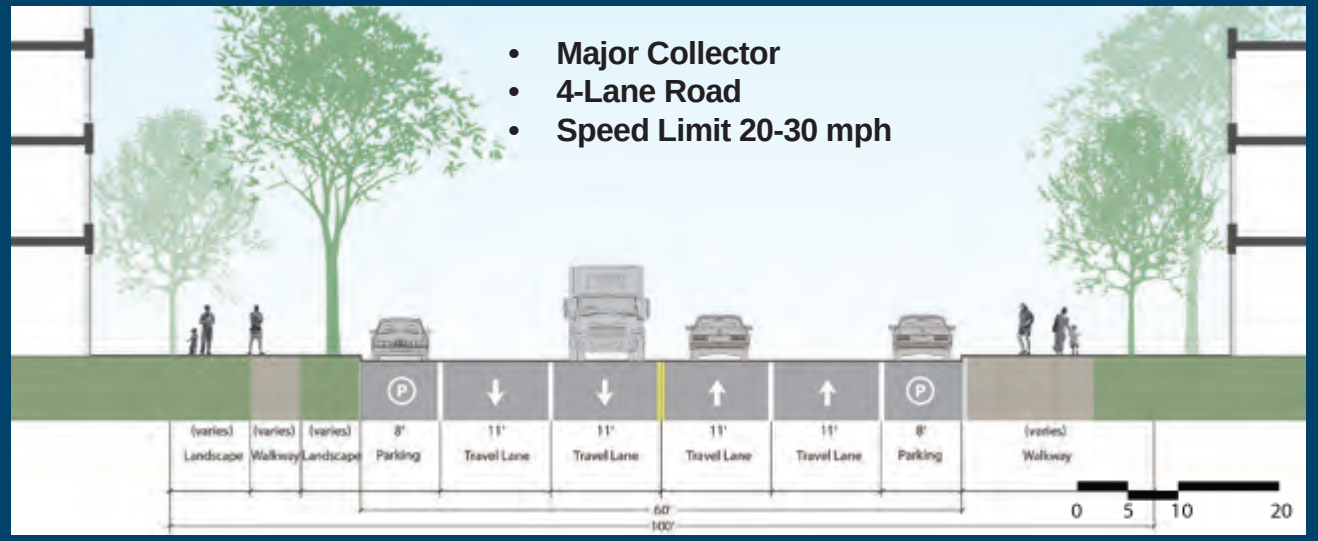

Apartments - 746 Mamaroneck Ave


Multi-Family - 726 Old White Plains Rd

- Mix of retail, residential (apts), institutional (school) buildings, 1 to 3 stories. Some mixed-use.
- Includes the Transit-Oriented Development (TOD) Overlay Zoning District.

Street Type





3. Character Analysis Mamaroneck Ave & Halstead Ave (C-2): "VILLAGE DOWNTOWN"

Traditional



Retail - 308 Mamaroneck Ave



Office/Commercial - 141 Halstead Ave



Mixed Use - 209-217 Halstead Ave

Newer



Mixed Use - 108 Mamaroneck Ave



Retail - 448 Mamaroneck Ave

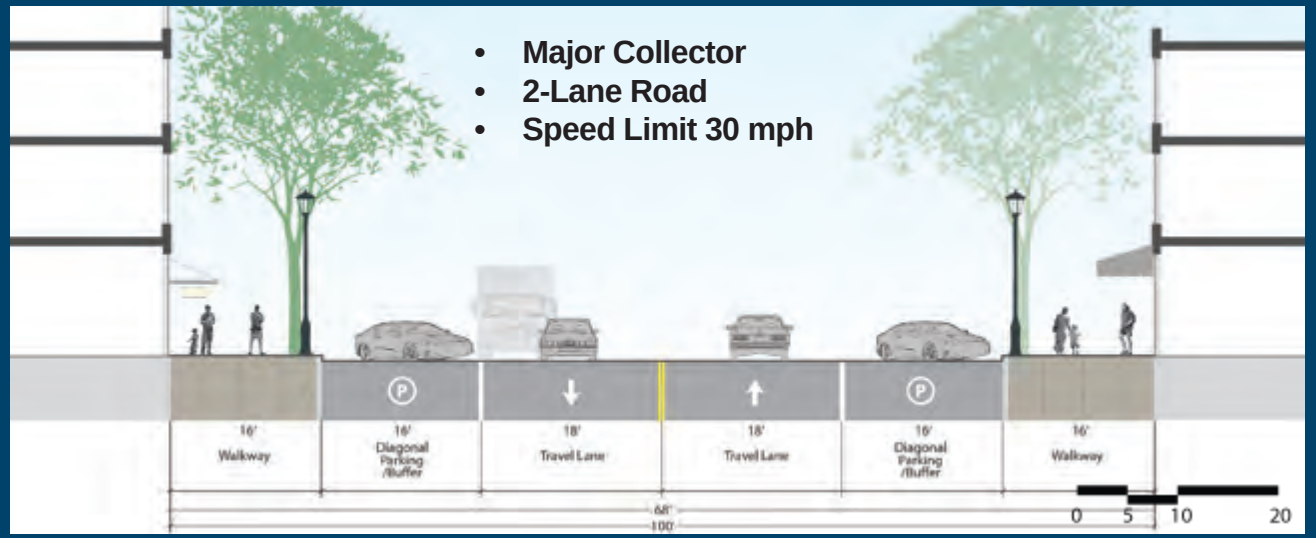


Mixed Use - 120 Mamaroneck Ave

- Mix of retail, office, and mixed use buildings (ground floor retail, residential or office upper floors) Typically 1 to 3 stories
- Parcels are relatively narrow.

Street Type





3. Character Analysis Post Road W. (C-1): "HARBORVIEW/REGIONAL MIXED CORRIDOR"

Traditional



Apartments - 953 W Boston Post Rd



Apartments - 680 W Boston Post Rd



Retail - 1009 W Boston Post Rd

Newer



Townhomes - 532 W Boston Post Rd



Townhomes - 620 W Boston Post Rd



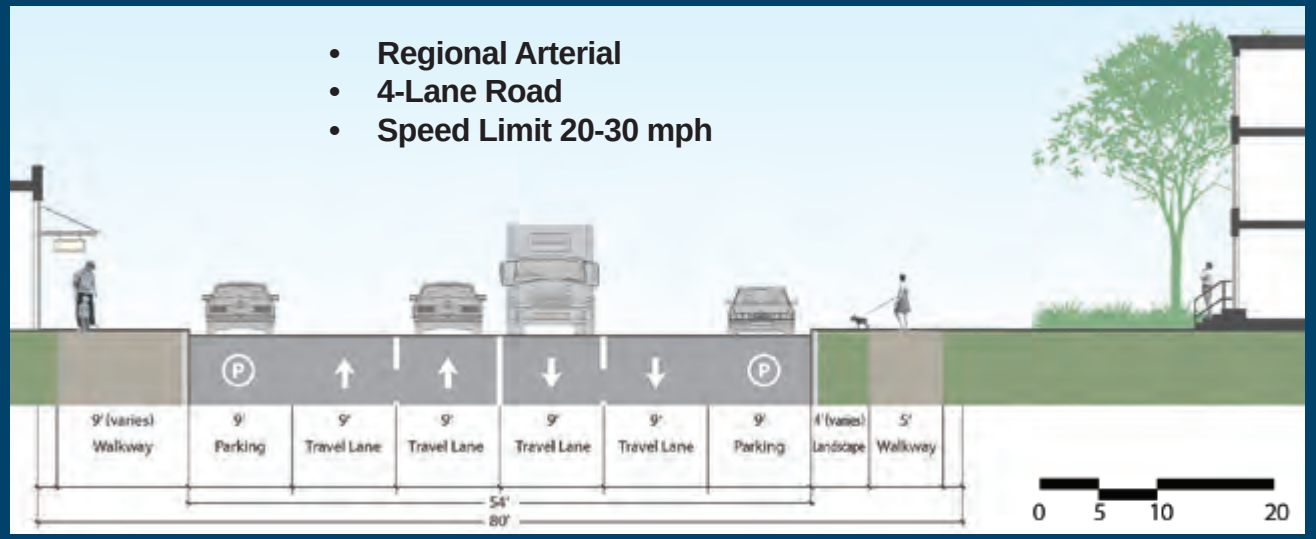
Townhomes - 128 Library Lane

- Mix of retail, residential (apartments), and institutional (school) buildings. Typically 1 to 3 stories.
- Parcels are relatively shallow; a few are larger and deeper.

Street Type



- **Regional Arterial**
- **4-Lane Road**
- **Speed Limit 20-30 mph**



3. Character Analysis Halstead Avenue (C-1): "MIXED RESIDENTIAL CORRIDOR"

Traditional



Single Family - 554 Halstead Ave



Multi-Family Home - 441 Halstead Ave



Retail - 551 Halstead Ave

Newer



Apartments - 453 Halstead Ave



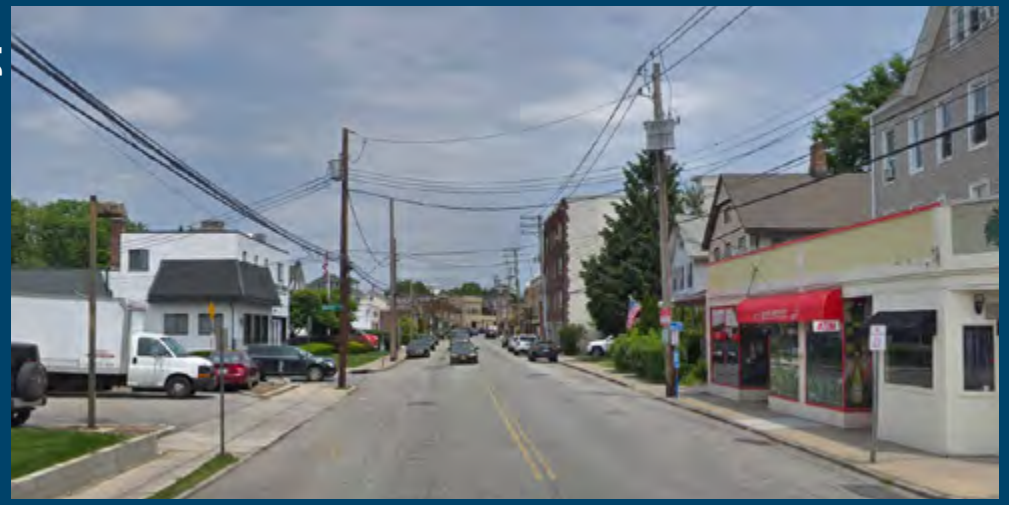
Retail - 453 Halstead Ave



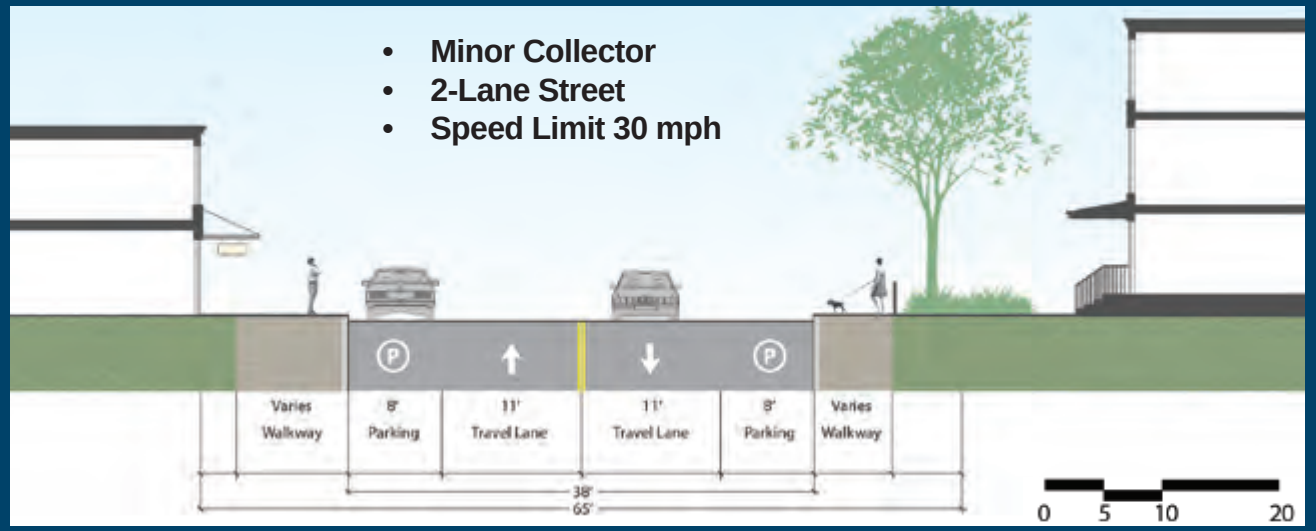
Office/Commercial - 535 Halstead Ave

- Mix of residential (various types) and retail buildings. Typically 1-2 stories.
- Parcels are relatively wide and shallow.

Street Type



- **Minor Collector**
- **2-Lane Street**
- **Speed Limit 30 mph**



3. Character Analysis Post Road East (C-1): "REGIONAL COMMERCIAL CORRIDOR"

Traditional



Retail - 501 E Boston Post Rd



Retail - 605 E Boston Post Rd



Retail - 640 E Boston Post Rd

Newer



Apartments - 422 E Boston Post Rd



Retail - 651 E Boston Post Rd

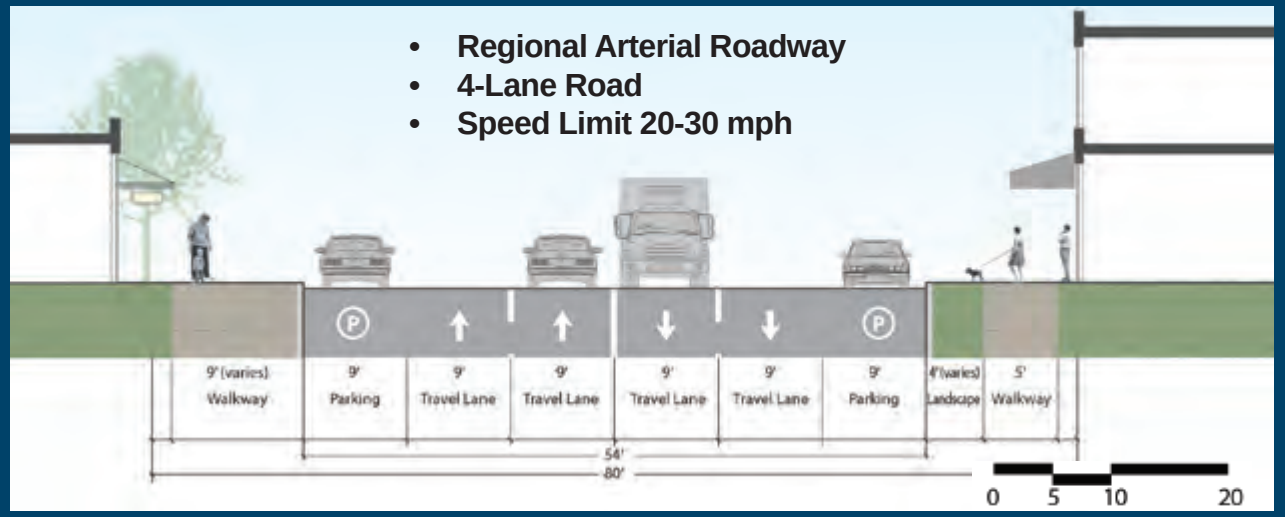


Mixed Use - 180 E Boston Post Rd

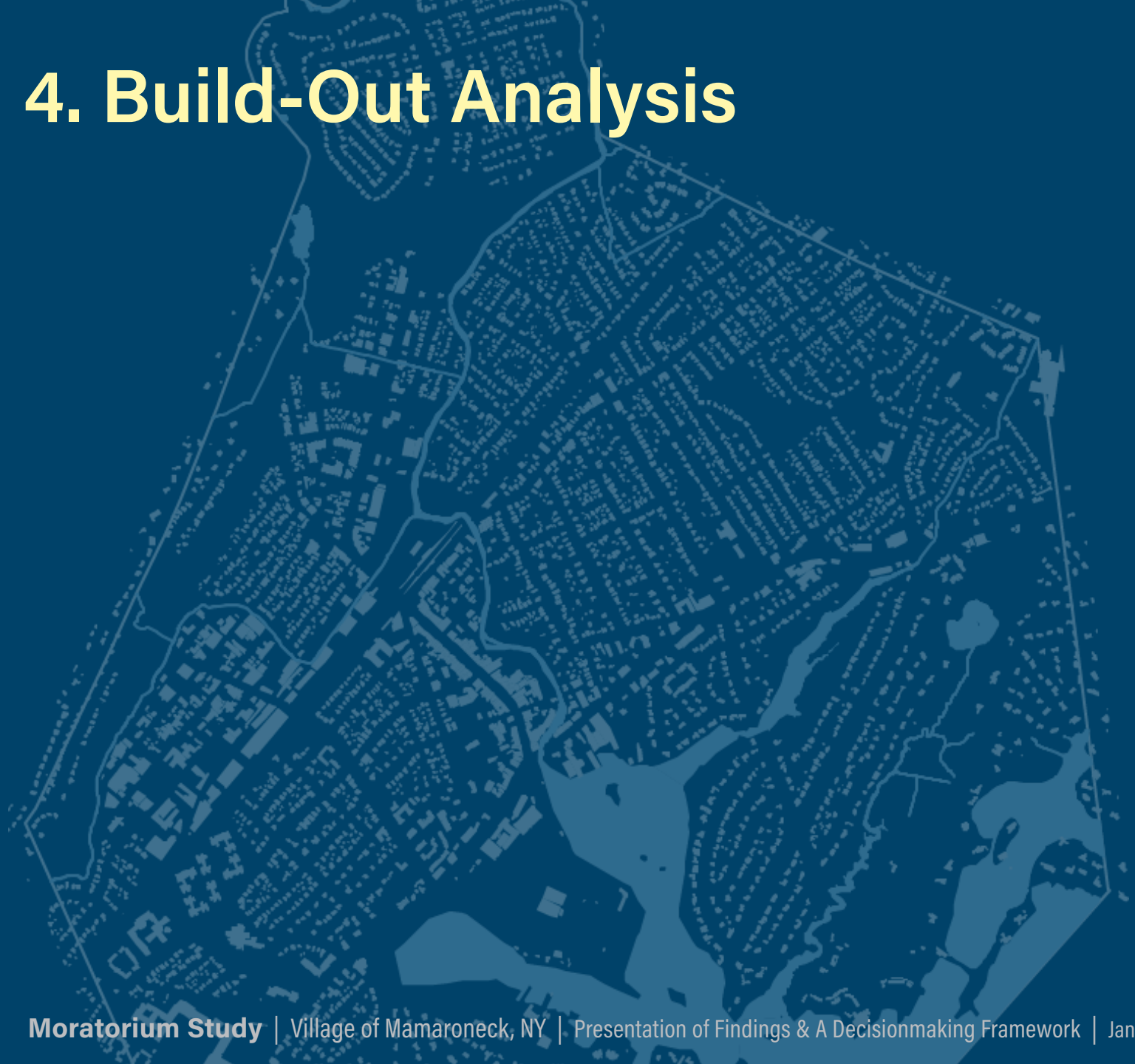
- Primarily retail buildings, with several institutional (school and churches) buildings. Typically 1 story.
- Parcels are relatively wide, with depth being relatively shallow.

Street Type





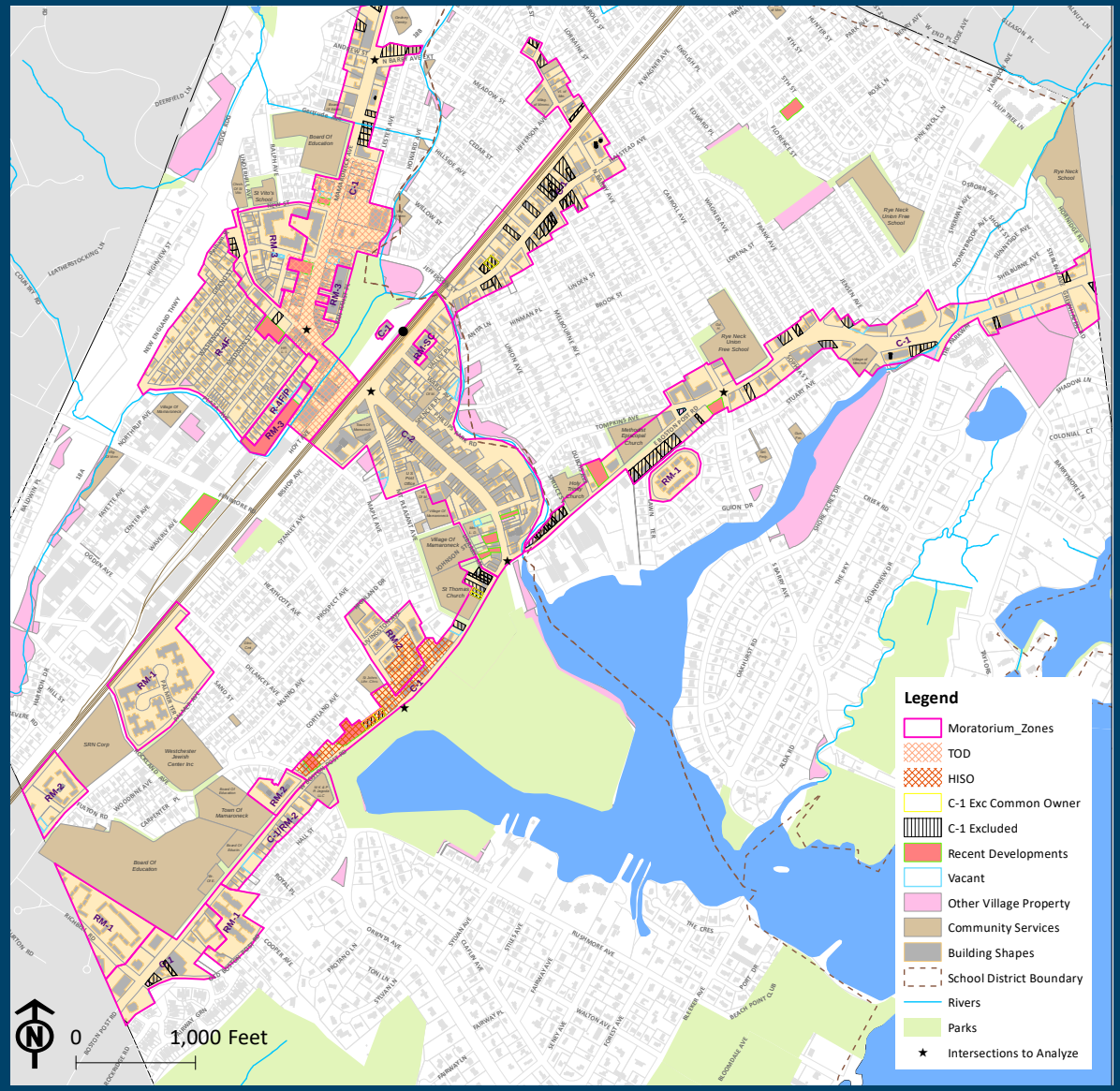
4. Build-Out Analysis



4. Build-Out Analysis

Purpose

- Gauge the probable full potential for multifamily redevelopment in the moratorium area as currently permitted under existing zoning.



4. Build-Out Analysis

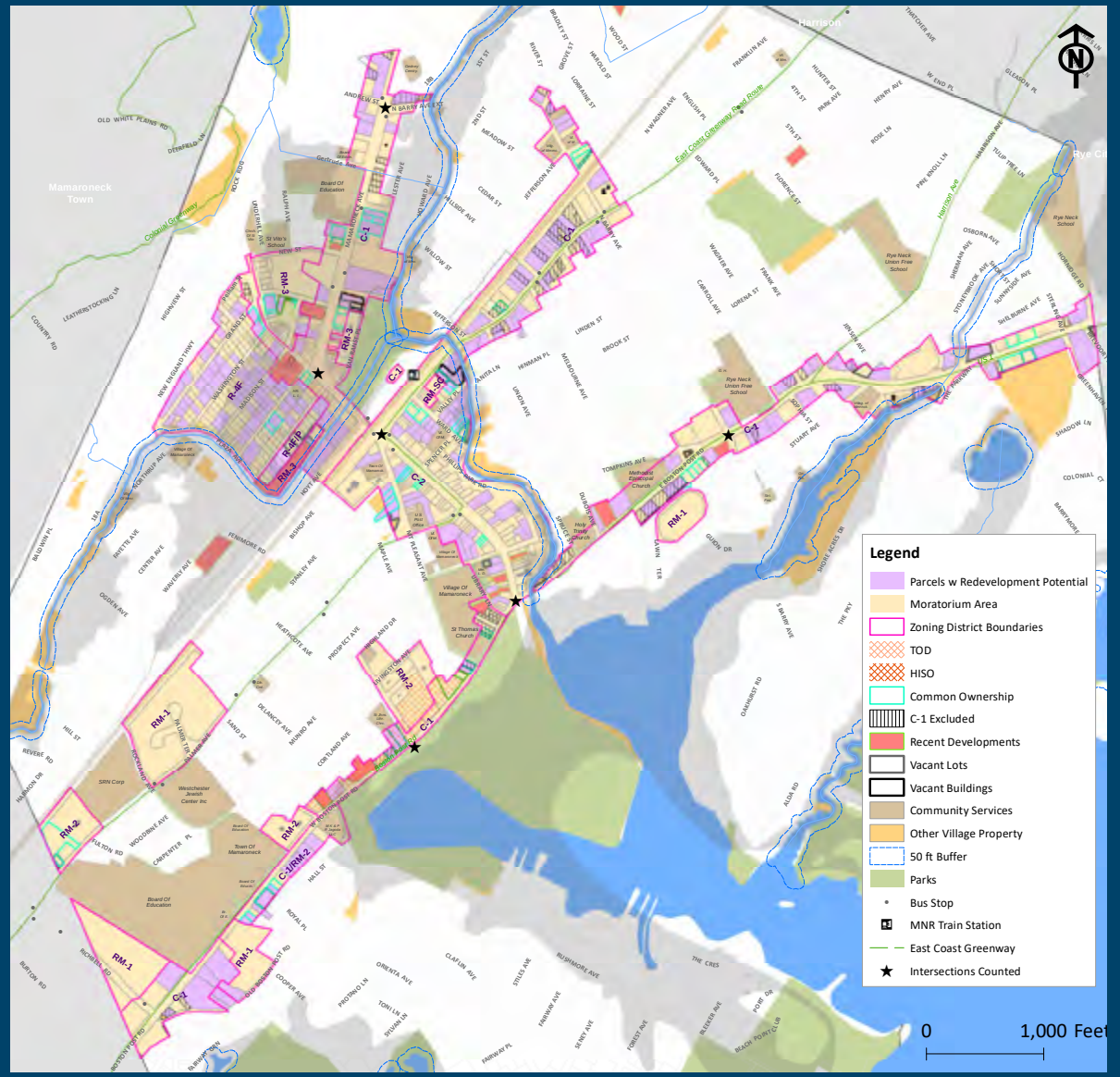
Determine Probable Redevelopment Scenarios within the Moratorium Area

- Total Parcels in the Moratorium Area: 1,209
- Determine Which Parcels to Include or Exclude from the Build-Out Analysis.
  - » Remove publicly-owned and properties owned by Washingtonville Housing Alliance.
  - » Adjacent parcels owned by same person/entity are assumed to be combined into one larger parcel.
  - » Remove remaining parcels that do not meet minimum lot dimensions per zoning (unless it meets after combined with adjacent parcel owned by same owner in b.).
  - » Adjust for multiple units in condominiums being considered separate parcels.
- Parcels Remaining: 350

4. Build-Out Analysis

Analyze and Screen Out Remaining Parcels

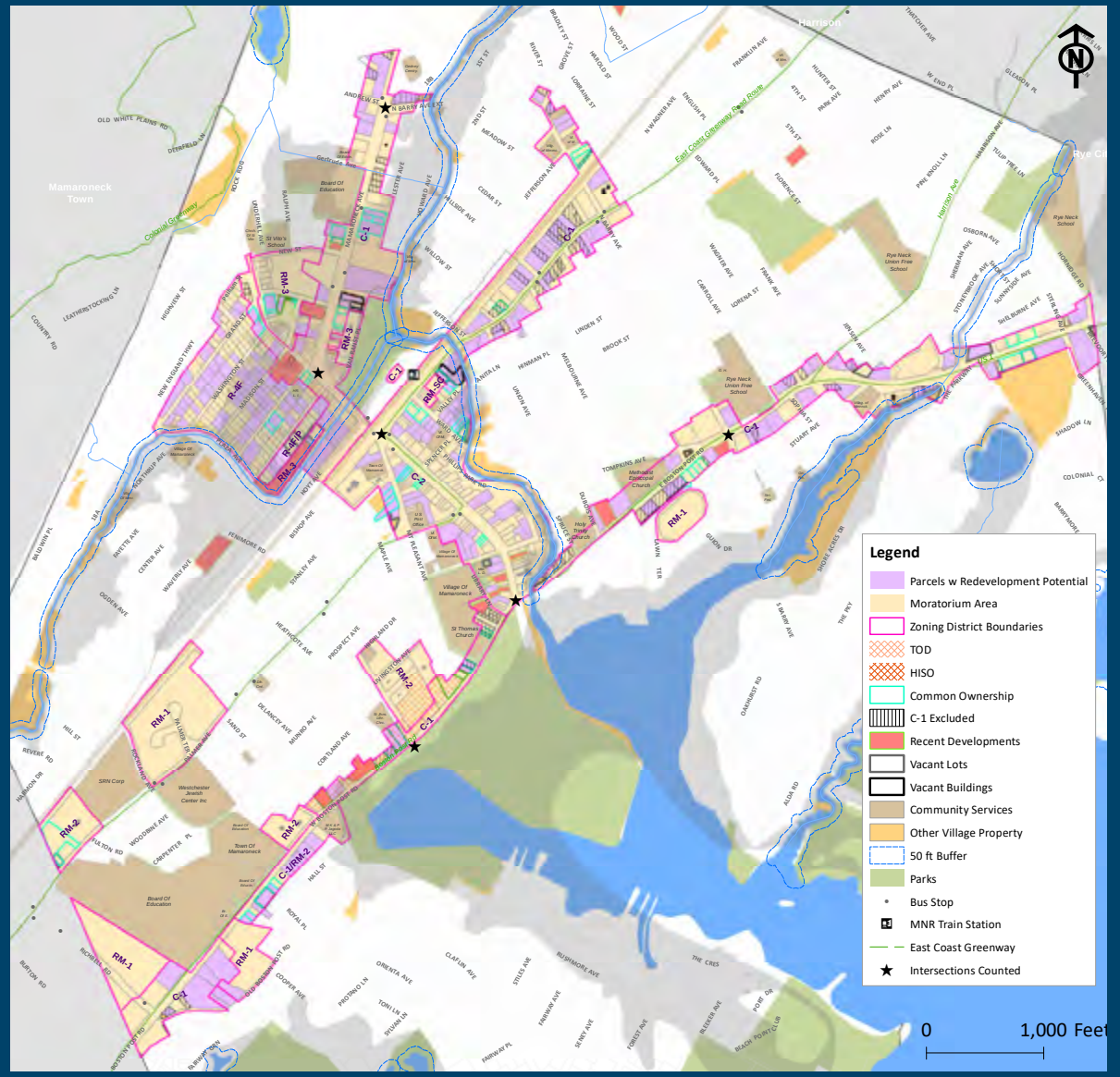
- 11 parcels have already been redeveloped recently (see page 11).
- 73 parcels are unlikely to be redeveloped. (e.g., churches, existing apartment complexes and condos, etc.)
- 56 parcels have assessed values that are too high, which makes redevelopment unlikely.
- Parcels with Redevelopment Potential: 210



4. Build-Out Analysis

Examine Current Uses of the 210 Parcels with Redevelopment Potential

- Commercial: 85
- Residential (rental): 62
- Residential (owner-occupied, 1-3 unit): 63



4. Build-Out Analysis

What Determines the Building Type that Might Result from Redevelopment?

- Parcel Size.
  - More than 80 percent of parcels are too small to accommodate even a small apartment building, but townhomes would fit.
  - Larger parcels can accommodate either townhomes or apartments.
    - However, developer patience/tolerance for risk plays a role. While the short-term profits of townhomes could be higher than that of apartments, there is significant risk in anticipating a multi-year build-out, so developers will typically elect for the smaller, but more certain, returns of a rental apartment building.
- The C-2 zoning along Mamaroneck Avenue requires commercial first floor, so the only building type possible is a mixed-use building.

4. Build-Out Analysis

What Types of Redevelopment Activities are Likely?

- Category 1: Existing Commercial Properties are Redeveloped as For-Sale Townhomes.
- Category 2: Existing Commercial Properties are Redeveloped as Mixed-Use (Apts w/Commercial Ground Floor).
- Category 3: Existing Commercial Properties are Redeveloped as Apartments.
- Category 4: Existing Residential Rental Properties are Redeveloped as For-Sale Townhomes.
- Category 5: Existing Residential Rental Properties are Redeveloped as Larger Apt. Buildings.
- Category 6: Existing Owner-Occupied, 1- to 3-Family Buildings are Redeveloped as For-Sale Townhomes.

Example Recent Developments

1



For-Sale Townhomes - 532 W B.P. Rd

2



Mixed Use - 108 Mamaroneck Ave

3



Apartments - 422 E Boston Post Rd

4. Build-Out Analysis

Determine Resulting Building Types & School District Location

- Category 1: Existing Commercial Properties are Redeveloped as For-Sale Townhomes.
  - 56 properties: 28 in Mamaroneck SD, 28 in Rye Neck SD.
- Category 2: Existing Commercial Properties are Redeveloped as Mixed-Use Developments.
  - 11 properties: 7 in the 100 to 400 blocks of Mamaroneck Ave, 3 elsewhere in Mamaroneck SD; 1 in Rye Neck SD.
- Category 3: Existing Commercial Properties are Redeveloped as Apartments.
  - 18 properties: 9 in Mamaroneck SD and 9 in Rye Neck SD.

4. Build-Out Analysis

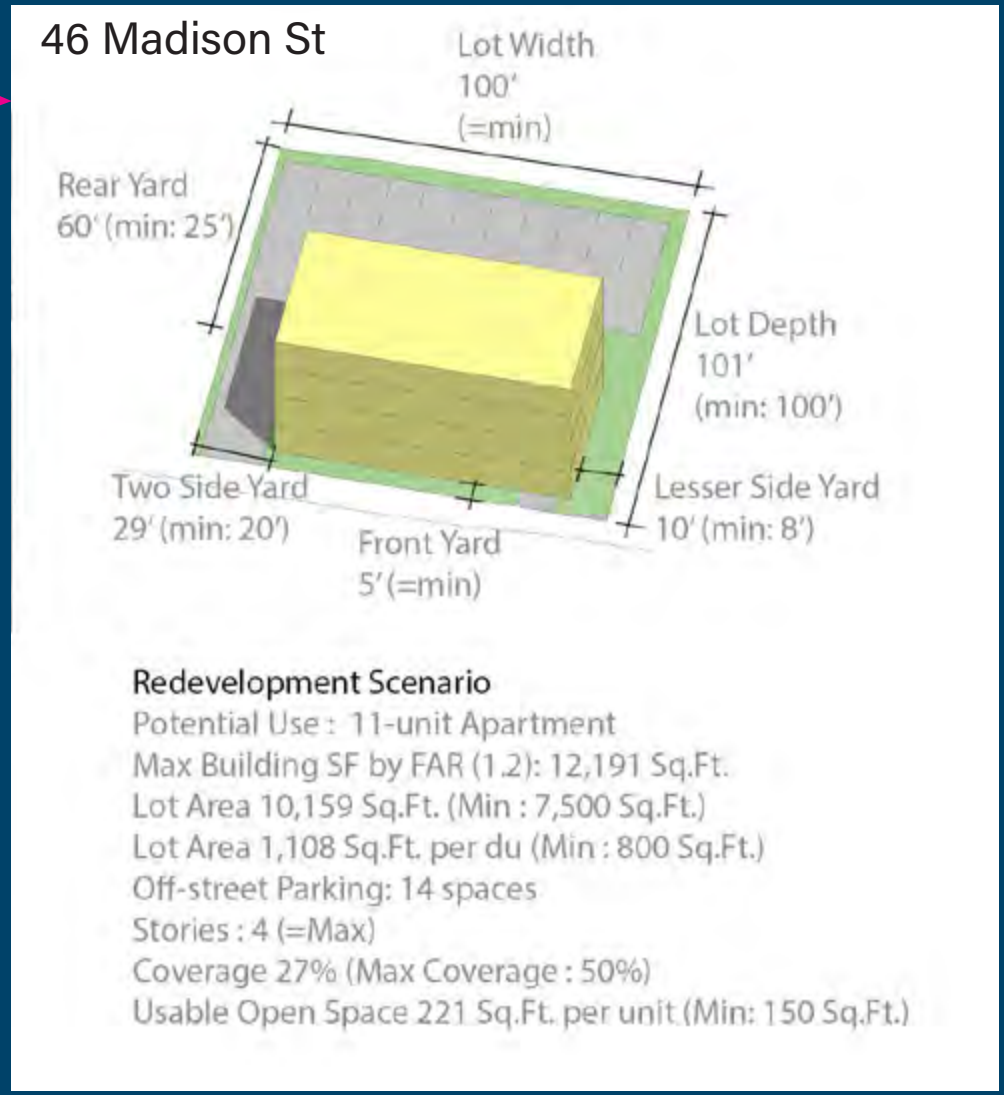
Determine Resulting Building Types by Parcel & School District Location

- Category 4: Existing Residential Rental Properties are Redeveloped as For-Sale Townhomes.
  - 59 properties: 43 in Mamaroneck SD, 16 in Rye Neck SD.
- Category 5: Existing Residential Rental Properties are Redeveloped as Larger Apt. Buildings.
  - 3 assemblages in the Mamaroneck SD.
- Category 6: Existing Owner-Occupied 1- to 3-Family Buildings are Redeveloped as For-Sale Townhomes.
  - 63 properties: 54 in Mamaroneck SD, 9 in Rye Neck SD. Timing of these is difficult to predict; likely to coincide with current owner's decision-making based on life circumstances.

4. Build-Out Analysis

Conduct “Test for Fit” of a Sampling of Redevelopment Scenarios

- Determine if a particular redevelopment scenario can physically fit on the parcel under existing zoning provisions.



4. Build-Out Analysis

Conduct "Test for Fit" of a Sample of Redevelopment Scenarios

- Conducted tests-for-fit on 26 parcels to confirm that the redevelopment program can be accommodated on the property according to existing zoning regulations.
- Also provides an opportunity to observe potential outcomes in terms of overall site layout and design (i.e., building orientation, relationship of building to street and to neighboring properties, etc.).

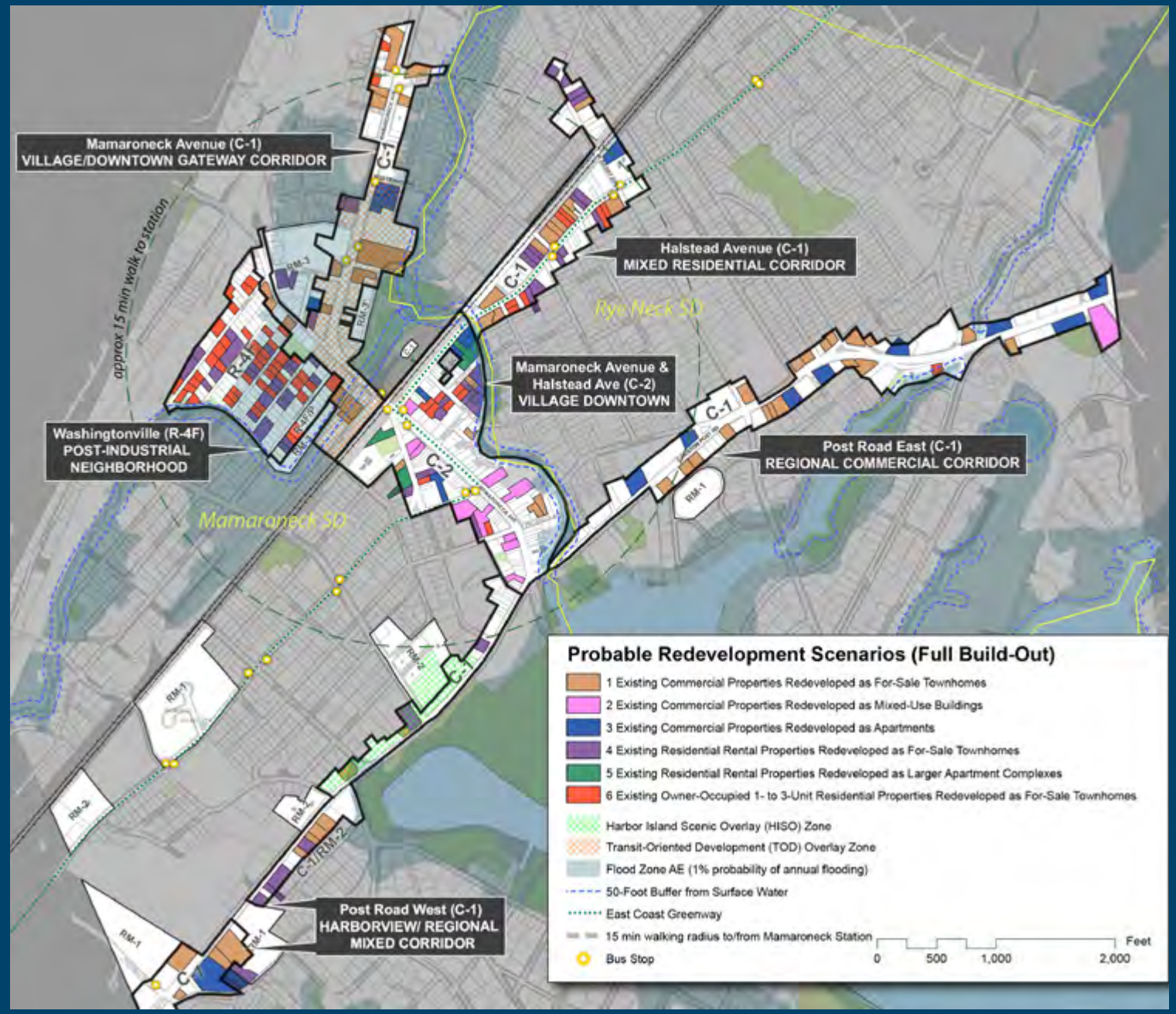


4. Build-Out Analysis

Results: Map of Probable Redevelopment Activity by Parcel

Redevelopment would take place incrementally, parcel by parcel, such that it could take 30 or more years for the redevelopment scenarios to achieve "full build-out."

**Potential new developments resulting from subdivisions into two or more lots in residential districts were not identified on a parcel-by-parcel basis and, therefore, are not included on the map on this page.*

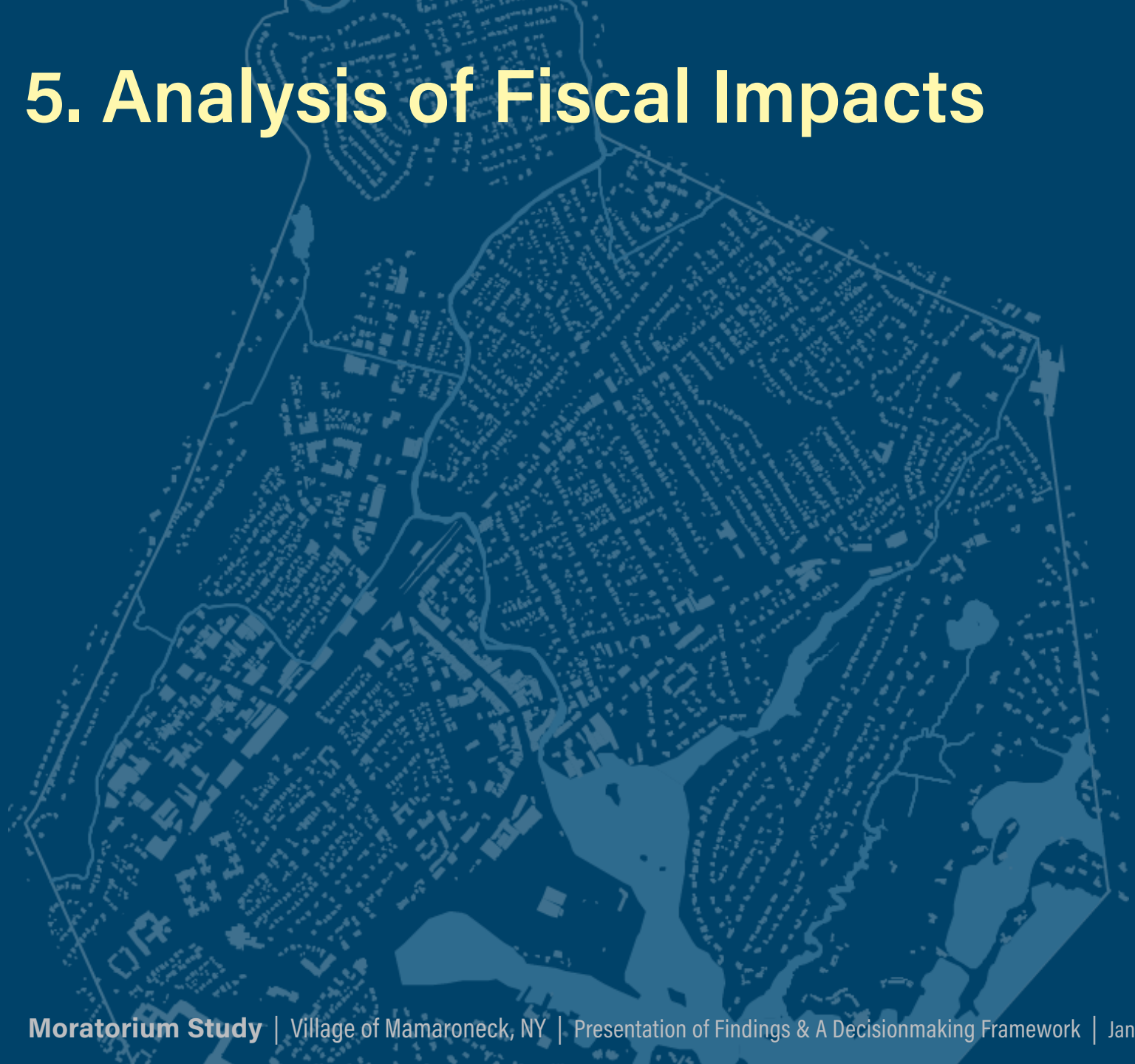


4. Build-Out Analysis

Results: Full Build-Out of Probable Redevelopment Activity by Parcel

CHARACTER DISTRICT	NEW RETAIL (sf)	LOSS OF EXISTING COMMERCIAL	TH 2-BR	TH 3-BR	APT 1-BR	APT 2-BR	NEW TH UNITS	NEW APT UNITS	TOTAL NEW RES UNITS	LOSS OF EXISTING RES RENTAL	LOSS OF EXISTING RES OWN	NET CHANGE IN RESIDENTIAL UNITS
WASHINGTONVILLE (R-F)	0	(1,043)	49	135	0	0	184	0	184	(57)	(85)	**42**
MAMARONECK AVE (C-1)	0	(112,098)	25	98	21	20	123	41	164	(14)		**150**
MAMARONECK AVE & HALSTEAD AVE (C-2)	32,500	(104,376)	21	78	380	149	99	529	628	(42)	(17)	**569**
HALSTEAD AVE (C-1)	0	(52,978)	36	61	6	6	97	12	109	(28)	(12)	**69**
POST ROAD EAST (C-1)	0	(128,616)	23	50	81	65	73	146	219	(3)	(1)	**215**
POST ROAD WEST (C-1)	0	(74,002)	20	77	28	28	97	56	153	(27)		**126**
	32,500	**(473,113)**	**174**	**499**	**516**	**268**	**673**	**784**	**1,457**	**(171)**	**(115)**	**1,171**

5. Analysis of Fiscal Impacts



5. Analysis of Fiscal Impacts

Determine Estimated Sale Prices after Redevelopment

- Townhomes (2BR/3BR)
  - 2BR at $1.1 million ($640,000 in Washingtonville)
  - 3BR at $1.5 million ($870,000 in Washingtonville)
- Smaller Apartment Complexes (1BR/2BR)
  - 800 sf 1BR rental valued at $175,000
  - 1,025 sf 2BR rental valued at $225,000
- Apartments above Commercial Space (certain blocks of Mamaroneck Ave)
  - 800 sf 1BR rental valued at $175,000
  - 1,025 sf 2BR rental valued at $225,000
  - 1,000 sf commercial space valued at $300,000

5. Analysis of Fiscal Impacts

Gather Data from the School Districts

a. Calculate Revenues based on Real Property Tax

- » Calculate Local Share of Operating Costs:
  - Mamaroneck SD Costs = $21,635 per student (2018)
  - Rye Neck SD Costs = $23,494 per student
- » Calculate Annual Debt Service Cost of New Schools
  - Both elementary schools are full
  - Debt service for new schools = $3,777 per each additional student

► Actual Enrollment in Mamaroneck SD schools is 94% of persons ages 5 to 17

► Actual Enrollment in Rye Neck SD schools is 87% of persons ages 5 to 17.

5. Analysis of Fiscal Impacts

Calculate Fiscal Impacts on the Village

- Fiscal Impact = Revenues Received - Cost of Services

a. Calculate Village Revenues based on Property Value

  - Real Property Tax = $24.63 million
  - Library District Property Tax = $2.79 million
  - Mortgage Tax, Building & Electrical Permits, Utility Tax = $1.50 million

b. Calculate Village Revenues based on Population

  - Sales Tax Disbursement = $2.76 million
  - Other (youth camp, parking, licenses, rec fees, state revenue sharing) = $3.18 million

5. Analysis of Fiscal Impacts

Calculate Fiscal Impacts on the Village

c. Calculate Village Service Costs

- Police, Fire & Jail = $13.49 million -> 60% to residents; 40% to businesses
- General Administration/Sanitation/Recreation/Library = $15.78 million -> 99% to residents; 1% to business
- Infrastructure = $4.99 million

d. Calculate Net Fiscal Impacts

- Net Fiscal Impact of Redevelopment = Net Fiscal Impact of Future Use - Net Fiscal Impact of Current Use

5. Analysis of Fiscal Impacts

Calculate Fiscal Impacts on the School Districts

a. Estimate population and school-age children (ages 5-17) for current uses
   - » 85 existing commercial properties have no residential population.
   - » 125 existing residential properties estimated using 2010 block level Census data.

b. Run the three enrollment projection models for estimating population and school-age children for new uses:
   - » Adjusted Rutgers Model: Updated version of the "Rutgers Model."
   - » Local School Attraction Model: A community with attractive schools might result in a higher population and school-age children than average.
   - » Non-Householder Population Model: Determine how many people reside in a particular housing type beyond the householder.

5. Analysis of Fiscal Impacts

Results: Estimated No. of School-Age Children by Building Type and No. of Bedrooms

ESTIMATED POPULATION OF RESIDENTS & SCHOOL AGE CHILDREN BY RESULTING REDEVELOPMENT TYPE						
MODEL>	ADJUSTED RUTGERS		LOCAL SCHOOL ATTRACTION		NON-HOUSEHOLDER	
Redevelopment Component	Estimated No. of Residents	Estimated No. of School Age Children	Estimated No. of Residents	Estimated No. of School Age Children	Estimated No. of Residents	Estimated No. of School Age Children
MAMARONECK SD						
Townhome: 2 BR For Sale	2.09	**0.14**	2.18	**0.38**	1.72	**0.24**
Townhome: 3 BR For Sale	2.83	**0.41**	3.27	**0.76**	2.68	**0.55**
Townhome: 2 BR Washingtonville For Sale	2.09	**0.14**	2.18	**0.38**	1.72	**0.24**
Townhome: 3 BR Washingtonville For Sale	2.83	**0.41**	3.27	**0.76**	2.68	**0.55**
Apartment: 1 BR Rental	1.67	**0.09**	1.09	**0**	1.33	**0.11**
Apartment: 2 BR Rental	2.31	**0.26**	2.18	**0.38**	2.66	**0.55**
Commercial Space: 1,000 SF	n/a	n/a	n/a	n/a	n/a	n/a
RYE NECK SD						
Townhome: 2 BR For Sale	2.09	**0.14**	2.00	**0.31**	1.84	**0.26**
Townhome: 3 BR For Sale	2.83	**0.41**	3.00	**0.62**	2.76	**0.55**
Apartment: 1 BR Rental	1.67	**0.09**	1.00	**0**	1.00	**0**
Apartment: 2 BR Rental	2.31	**0.26**	2.00	**0.31**	1.82	**0.26**
Commercial Space: 1,000 SF	n/a	n/a	n/a	n/a	n/a	n/a

5. Analysis of Fiscal Impacts

How do the School Enrollment Impacts Compare by Model?

- Adjusted Rutgers Model results in the least number of school-age children.
- Local School Attraction Model results in the greatest number of school-age children.
- Non-Householder Model results fall in between the two models listed above.



5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Building Type/No. Bedrooms & Model

ESTIMATED FISCAL IMPACT BY RESULTING REDEVELOPMENT TYPE & SCHOOL ENROLLMENT PROJECTION MODEL						
MODEL>	ADJUSTED RUTGERS MODEL		LOCAL SCHOOL ATTRACTION		NON-HOUSEHOLDER	
	Impact to VILLAGE	Impact to SCHOOL	Impact to VILLAGE	Impact to SCHOOL	Impact to VILLAGE	Impact to SCHOOL
within the Mamaroneck SD						
Townhome: 2 BR For Sale	$ 5,587	$ 11,637	$ 5,493	$ 6,334	$ 5,945	$ 9,437
Townhome: 3 BR For Sale	$ 7,631	$ 11,048	$ 7,164	$ 3,302	$ 7,781	$ 7,967
Townhome: 2 BR Washingtonville For Sale	$ 2,321	$ 5,482	$ 2,227	$ 179	$ 2,679	$ 3,282
Townhome: 3 BR Washingtonville For Sale	$ 3,158	$ 2,618	$ 2,691	$ (5,128)	$ 3,308	$ (462)
Apartment: 1 BR Rental	$ (234)	$ 361	$ 205	$ 2,342	$ 52	$ (79)
Apartment: 2 BR Rental	$ (467)	$ (2,711)	$ (318)	$ (5,374)	$ (743)	$ (9,093)
Commercial Space: 1,000 SF	$ 1,697	$ 4,014	$ 1,697	$ 4,014	$ 1,697	$ 4,014
within the Rye Neck SD						
Townhome: 2 BR For Sale	$ 5,587	$ 13,554	$ 5,686	$ 9,795	$ 5,830	$ 10,916
Townhome: 3 BR For Sale	$ 7,636	$ 13,666	$ 7,455	$ 9,006	$ 7,705	$ 10,589
Apartment: 1 BR Rental	$ (283)	$ 667	$ 241	$ 2,646	$ 275	$ 2,646
Apartment: 2 BR Rental	$ (514)	$ (2,314)	$ (224)	$ (3,435)	$ (105)	$ (2,314)
Commercial Space: 1,000 SF	$ 1,265	$ 4,536	$ 1,265	$ 4,536	$ 1,265	$ 4,536

5. Analysis of Fiscal Impacts

Primary Findings about the Fiscal Impacts of Redevelopment Activities

- Commercial properties, which do not have any residents needing services nor any school-age children, have a positive fiscal impact on the Village and School Districts.
- When commercial properties are replaced by for-sale townhomes, fiscal impacts are positive, even with the loss of the commercial space.
- When commercial properties become apartments over commercial (i.e., mixed-use) or apartments behind existing commercial, the cost to service additional residents and educate school-age children could result in a negative fiscal impact.
- How much commercial property can the Village and the School Districts afford to lose?
- What is the appropriate mix of commercial and new residential development types and where?

5. Analysis of Fiscal Impacts

Comparison of Estimates of School-Age Children with Actual Data

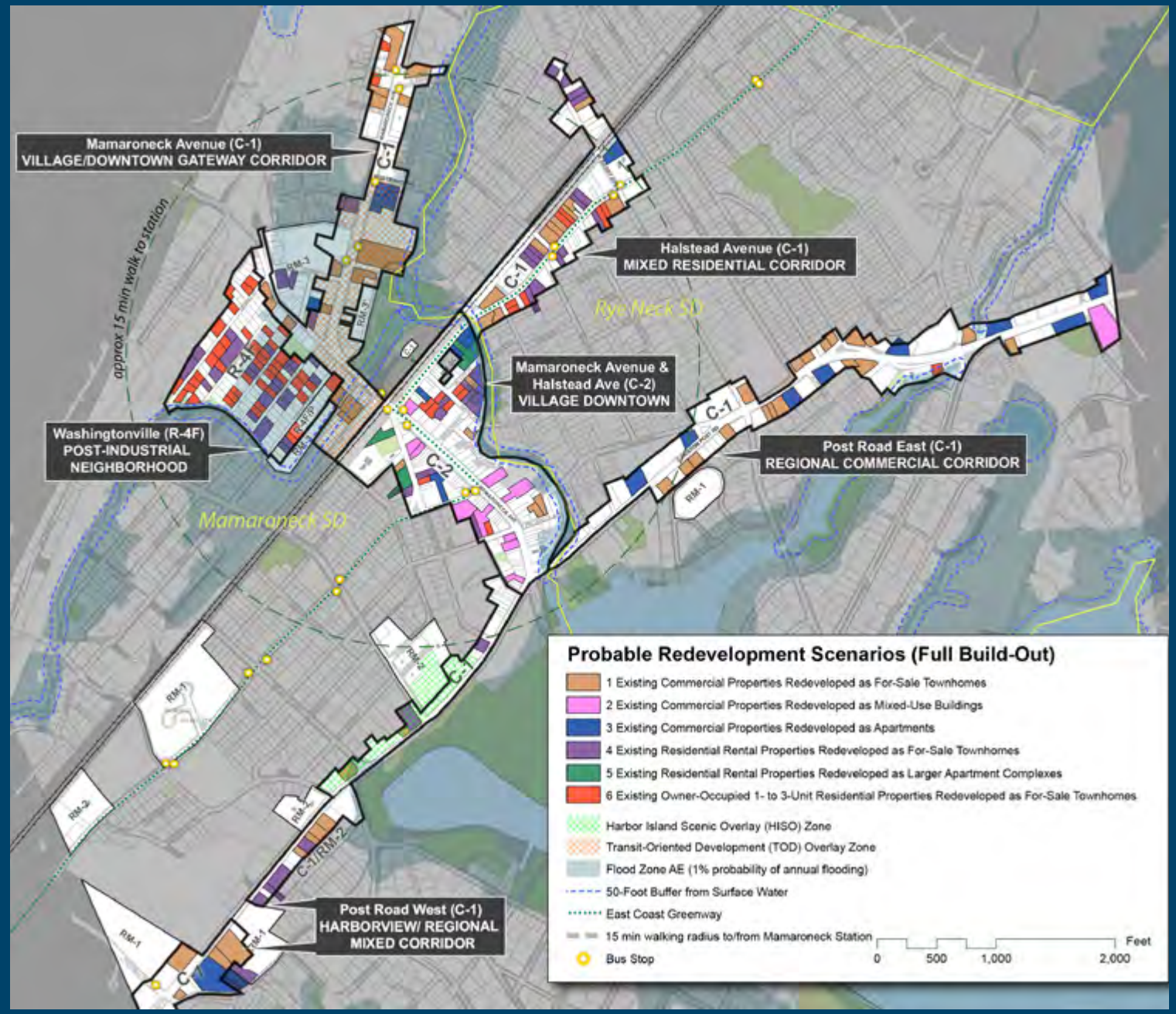
- The Planning Department received actual school enrollment data from a sampling of multifamily residential complexes in the Village.
  - In comparing the actual school enrollment data for these properties with the estimates of school-age children from the models, the estimates from the model vary, with some being higher and some being lower than the actual.
  - The Adjusted Rutgers Model tends to align more closely to the actual school enrollment data than the other models. The Non-Householder Model generally appears to overestimate the number of school-age children living in these properties.
  - Therefore, to calculate the potential fiscal impacts of redevelopment, the average of the estimates of school-age children from all three models was determined and utilized.
  - See Appendix A for the detailed tables of calculations.

5. Analysis of Fiscal Impacts

Map of Probable Redevelopment Activity by Parcel

Redevelopment would take place incrementally, parcel by parcel, such that it could take 40 or more years for the redevelopment scenarios to achieve "full build-out."

**Potential new developments resulting from subdivisions into two or more lots in residential districts were not identified on a parcel-by-parcel basis and, therefore, are not included on the map on this page.*



5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Mamaroneck Ave (C-1): Village/ Downtown Gateway Corridor
  - While projects involving the redevelopment of commercial properties into apartments might have some negative fiscal impacts to both Village and School District, overall, the potential redevelopment activity in this area will likely be a net fiscal positive for both.

Mamaroneck Ave (C-1): Village/Downtown Gateway Corridor				
	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 1: Commercial to For-Sale Townhomes (56)				
Village	60%	40%		
Mamaroneck SD	47%	40%	13%	
Category 3: Commercial to Apartments (18)				
Village		50%	50%	
Mamaroneck SD				100%
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	83%	17%		
Mamaroneck SD	100%			
Category 6: Owner-Occupied 1-3 Family to For-Sale Townhomes (63)				
Village	100%			
Mamaroneck SD	100%			

The percentages in the table above refer to the portion of the total number of projects of each type of redevelopment activity. The percentages are distributed into columns depending on the degree of positive or negative impacts on the Village and on the School District in which the redevelopment activity is located.

5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Mamaroneck Ave & Halstead Ave (C-2): Village Downtown
  - While redevelopment activities that lead to for-sale townhomes will have strong positive fiscal impacts on both the Village and the School District, these impacts would be reduced by the likely negative fiscal impacts of the redevelopment of commercial properties into apartments.

Mamaroneck Ave & Halstead Ave (C-2): Village Downtown				
	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 1: Commercial to For-Sale Townhomes (56)				
Village	67%	33%		
Mamaroneck SD	67%	33%		
Category 2: Commercial to Mixed-Use (11)				
Village		50%	50%	
Mamaroneck SD		50%	10%	43%
Category 3: Commercial to Apartments (18)				
Village		67%	33%	
Mamaroneck SD		67%		33%
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	100%			
Mamaroneck SD	100%			
Category 5: Residential Rental to Larger Apartments (3)				
Village		33%	67%	
Mamaroneck SD	33%			67%
Category 6: Owner-Occupied 1-3 Family to For-Sale Townhomes (63)				
Village	100%			
Mamaroneck SD	100%			

5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Halstead Ave (C-1): Mixed Residential Corridor
  - While projects involving redevelopment of commercial properties into apartments will likely have negative fiscal impacts on the School District, the overall potential redevelopment activity will likely yield a net fiscal positive for both the Village and School District.

Halstead Ave (C-1): Mixed Residential Corridor				
	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 1: Commercial to For-Sale Townhomes (56)				
Village	60%	40%		
Rye Neck SD	80%	20%		
Category 3: Commercial to Apartments (18)				
Village		100%		
Rye Neck SD			100%	
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	57%	43%		
Rye Neck SD	100%			
Category 6: Owner-Occupied 1-3 Family to For-Sale Townhomes (63)				
Village	25%	75%		
Rye Neck SD	88%	13%		

5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Washingtonville (R-4): Post-Industrial Neighborhood
  - Overall, the potential redevelopment activity in this area most will likely yield a net fiscal positive for both the Village and School District.

Washingtonville (R-4F): Post-Industrial Neighborhood				
	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	**23%**	**77%**		
Mamaroneck SD	**73%**	**27%**		
Category 6: Owner-Occupied 1-3 Family to For-Sale Townhomes (63)				
Village	**2%**	**98%**		
Mamaroneck SD	**52%**	**48%**		

5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Boston Post Road West (C-1): Harborview/Mixed Regional Corridor
  - While projects involving redevelopment of commercial properties into apartments will have negative fiscal impacts on the School District, overall, the potential redevelopment activity in this area will likely yield a net fiscal positive for both the Village and School District.

Boston Post Road West (C-1): Harborview/Mixed Regional Corridor				
	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 1: Commercial to For-Sale Townhomes (56)				
Village	**60%**	**40%**		
Mamaroneck SD	**60%**	**40%**		
Category 3: Commercial to Apartments (18)				
Village		**100%**		
Mamaroneck SD				**100%**
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	**88%**	**13%**		
Mamaroneck SD	**100%**			

5. Analysis of Fiscal Impacts

Results: Estimated Fiscal Impacts by Character District & Redevelopment Type

- Boston Post Road East (C-1): Regional Commercial Corridor
  - While projects involving the redevelopment of commercial property into mixed-use or apartments will likely have negative fiscal impacts on the Village and School District especially, overall, the potential redevelopment activity in this area could be a net fiscal positive for both the Village and School District.

Boston Post Road East (C-1): Regional Commercial Corridor

	Strongly Positive (+$20,000 or more)	Modestly Positive (+$1 to $19,999)	Modestly Negative (-$1 to -$19,999)	Strongly Negative (-$20,000 or more)
Category 1: Commercial to For-Sale Townhomes (56)				
Village	**67%**	**33%**		
Rye Neck SD	**83%**	**17%**		
Category 2: Commercial to Mixed-Use (11)				
Village			**100%**	
Rye Neck SD			**100%**	
Category 3: Commercial to Apartments (18)				
Village		**100%**		
Rye Neck SD			**100%**	
Category 4: Residential Rental to For-Sale Townhomes (59)				
Village	**50%**	**50%**		
Rye Neck SD	**100%**			
Category 6: Owner-Occupied 1-3 Family to For-Sale Townhomes (63)				
Village		**100%**		
Rye Neck SD	**100%**			

5. Analysis of Fiscal Impacts

Subdivisions of 2 or More Lots in Residential Neighborhoods: Resulting Building Types

- Type 1: For Sale. A lot is purchased and subdivided into quarter acre lots, either with the existing house being demolished or rehabilitated.
  - A typical new house: 4-BR/3-BA with 2,700 sq. ft. of living space.
  - Approx. sales price = $1 million.
- Type 2: Duplex For Rent. A lot is purchased and subdivided into quarter acre lots; a new duplex is constructed for rent on each parcel (two units on each new parcel).
  - Each part of the duplex is 3-BR/2-BA with 1,800 sq. ft. of living space.
  - Approx. rent = $4,200/mo. per unit.



5. Analysis of Fiscal Impacts

Estimates of School-Age Children from New Homes Created by Residential Subdivisions

ESTIMATED POPULATION OF RESIDENTS & SCHOOL AGE CHILDREN BY RESULTING DEVELOPMENT TYPE						
MODEL>	ADJUSTED RUTGERS		LOCAL SCHOOL ATTRACTION		NON-HOUSEHOLDER	
Incremental Development	Estimated No. of Residents	Estimated No. of School Age Children	Estimated Population	Estimated No. of School Age Children	Estimated No. of Residents	Estimated No. of School Age Children
MAMARONECK SD						
Four-Bedroom Single Family Home For Sal	3.67	**1.14**	4.36	**1.14**	3.82	**0.93**
Three-Bedroom Rental Duplex	2.83	**0.41**	3.27	**0.76**	3.00	**0.66**
RYE NECK SD						
Four-Bedroom Single Family Home For Sal	3.67	**1.14**	4.00	**0.93**	4.20	**1.00**
Three-Bedroom Rental Duplex	2.83	**0.41**	3.00	**0.62**	2.73	**0.54**

5. Analysis of Fiscal Impacts

Estimated Fiscal Impact of New Home Types Created by Residential Subdivisions

ESTIMATED FISCAL IMPACT BY RESULTING DEVELOPMENT TYPE & SCHOOL ENROLLMENT PROJECTION MODEL						
MODEL>	ADJUSTED RUTGERS		LOCAL SCHOOL ATTRACTION		NON-HOUSEHOLDER	
Incremental Development	Impact to VILLAGE	Impact to SCHOOL	Impact to VILLAGE	Impact to SCHOOL	Impact to VILLAGE	Impact to SCHOOL
MAMARONECK SD						
Four-Bedroom Single Family Home For Sale	$ 3,379	$ (11,706)	$ 2,616	$ (11,706)	$ 3,214	$ (7,085)
Three-Bedroom Rental Duplex	$ (262)	$ (3,804)	$ (718)	$ (11,550)	$ (408)	$ (9,305)
RYE NECK SD						
Four-Bedroom Single Family Home For Sale	$ 3,380	$ (9,942)	$ 3,006	$ (5,325)	$ 2,850	$ (6,864)
Three-Bedroom Rental Duplex	$ (245)	$ (3,117)	$ (426)	$ (7,777)	$ (147)	$ (5,975)

- New, For-Sale Single Family Houses: positive fiscal impact on the Village, but negative on the School Districts due the addition of school-age children.
- New Houses for Rent: negative fiscal impacts on both the Village and the School Districts.

5. Analysis of Fiscal Impacts

Planning Dept. Analysis of Potential Subdivisions



- 91 parcels in one-and-two family residential zones meet the dimensional requirements for subdivision (just under 3% of the total number of parcels in these zones).
  - » Subdivision of these 91 parcels could lead to the development of 179 additional new housing units, a 5% increase over current allowable units without subdivision.
  - » In most instances, the existing house on a property that could be subdivided would need to be demolished to accommodate new lots. This slows the rate by which the lots can be subdivided.
  - » More than half of these new housing units would be possible in the R-5 zone. R-5 has considerably lower street frontage requirements than other zones at 50 feet.

5. Analysis of Fiscal Impacts

Planning Dept. Analysis of Potential Subdivisions

Zoning District	No. of Parcels	No. of Subdividable Parcels	No. of Potential Additional New Housing Units Resulting from Subdivisions
R-2F	653	6	+6
R-5	1,608	32	+108
R-6	19	0	+5
R-7.5	185	18	+19
R-10	218	3	+3
R-15	338	13	+15
R-20	245	19	+23
TOTAL	**3266**	**91**	**179**

6. Fiscal & Socioeconomic Impacts



6. Fiscal & Socioeconomic Impacts

How Fiscal & Socioeconomic Impacts Vary Among the New Building Types

Building Type	Fiscal Impacts	Socioeconomic Impacts
SINGLE-FAMILY HOMES (4BR) *from subdivisions*	▪ Generate the most negative fiscal impacts on School Districts, but positive fiscal impacts to the Village.	▪ The $1 million+ prices of most new single-family homes are attainable only to individuals or couples with combined incomes of at least $200,000.
DUPLEXES (3BR Rental) *from subdivisions*	▪ Generate minor negative fiscal impacts on the Village and negative fiscal impacts on School Districts.	▪ Duplexes offer a flexible option for families, but rents of $4,000/mo.+ require a solid income.
TOWNHOMES	▪ Generate the most positive fiscal impacts on both the Village and School Districts.	▪ The $1 million+ prices of most new townhouses are attainable only to individuals or couples with combined incomes of at least $200,000.

6. Fiscal & Socioeconomic Impacts

How Fiscal & Socioeconomic Impacts Vary Among the New Building Types

Building Type	Fiscal Impacts	Socioeconomic Impacts
APARTMENTS (1 BR Rentals)	▪ Modestly positive or negative fiscal impacts on the Village and School Districts. For the school districts, whether positive or negative depends on the school enrollment projection model utilized.	▪ Provide options for young professionals and downsizing older adults to live in the Village. ▪ Typical rents in new buildings are beyond the reach of low-to-moderate income people, and even those in higher income brackets. ▪ However, compared to townhomes and single-family homes, they are the most affordable and flexible type of new development being built in the Village now. ▪ Within the past decade 11 units of 150 new apartment units that have come on line are designated affordable (w/income limits).

6. Fiscal & Socioeconomic Impacts

How Fiscal & Socioeconomic Impacts Vary Among the New Building Types

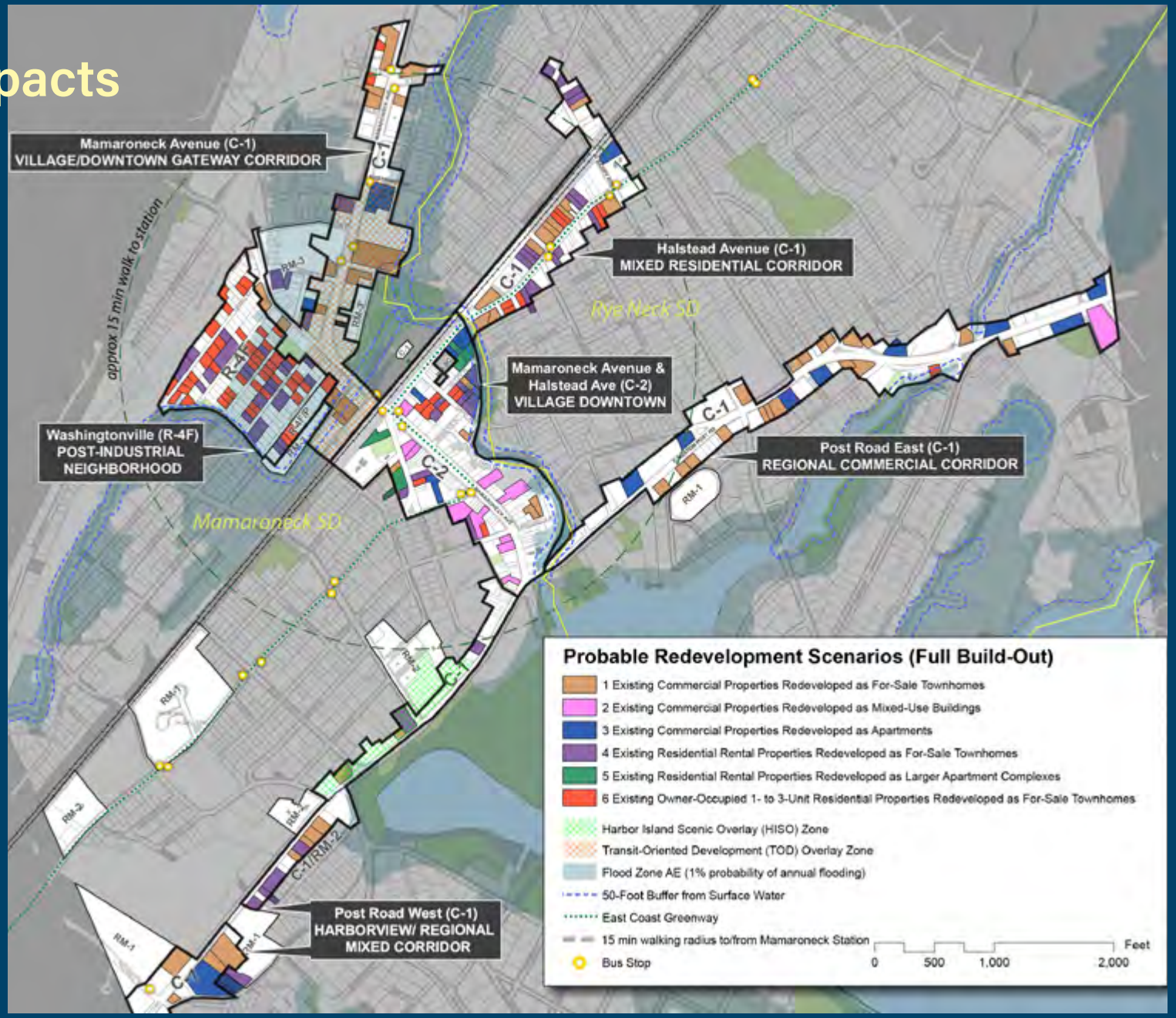
Building Type	Fiscal Impacts	Socioeconomic Impacts
APARTMENTS (2 BR Rentals)	▪ Generate negative fiscal impacts on the Village and School Districts.	▪ Provide options for young professionals (sharing a 2 BR is typically more cost-effective than renting a 1 BR) and young or small families to live in the Village. ▪ Typical rents of units in new buildings are beyond the reach of low-to-moderate income people, and even those in higher incomes brackets. ▪ However, compared to townhomes and single-family homes, they are the most affordable and flexible type of new development being built in the Village now. ▪ Within the past decade 11 units of 150 new apartment units that have come on line are designated affordable (w/income limits).

6. Fiscal & Socioeconomic Impacts

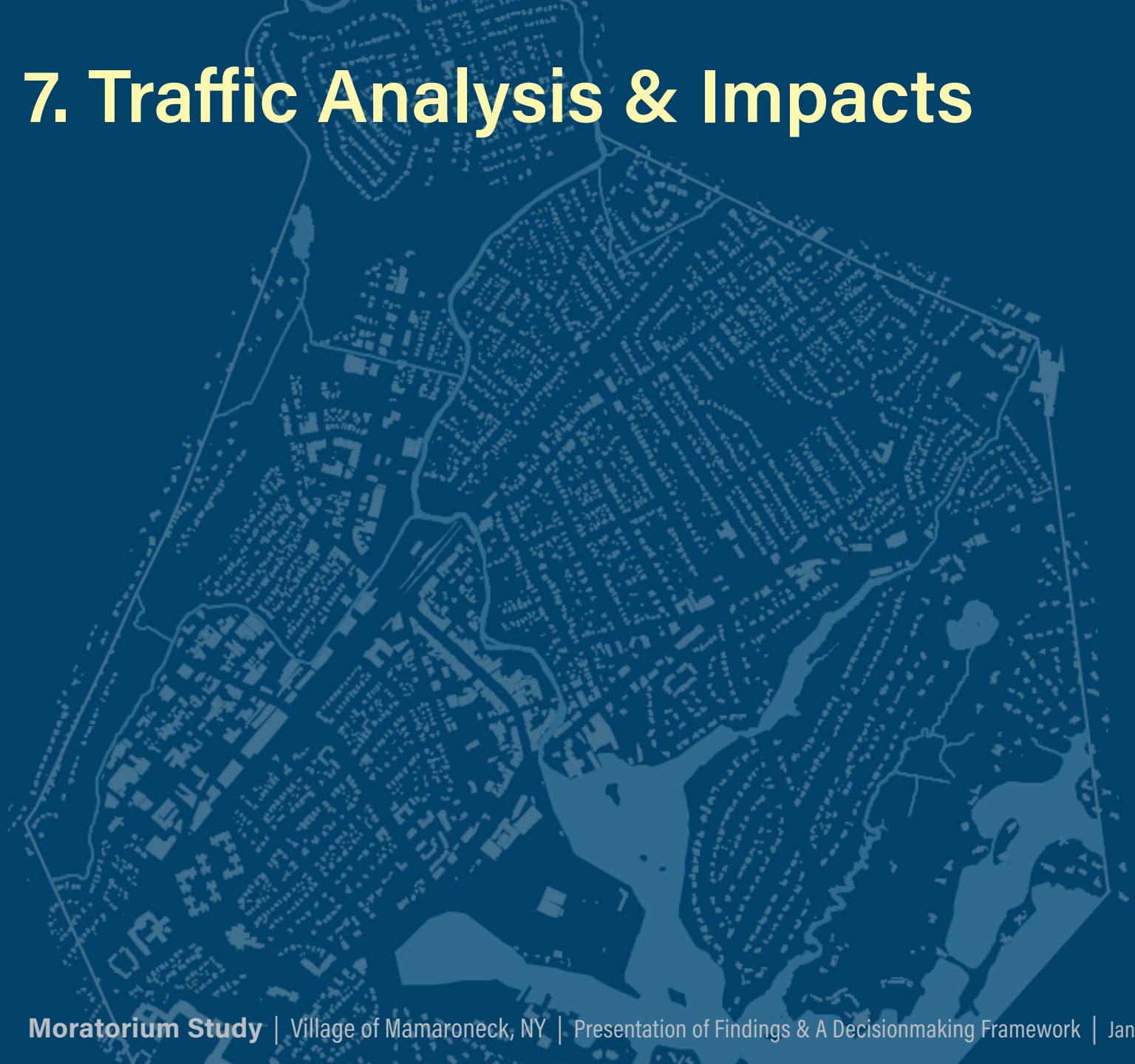
Map of Probable Redevelopment Activity by Parcel and Character District

Redevelopment would take place incrementally, parcel by parcel, such that it could take 40 or more years for the redevelopment scenarios to achieve "full build-out."

**Potential new developments resulting from subdivisions into two or more lots in residential districts were not identified on a parcel-by-parcel basis and, therefore, are not included on this map.*



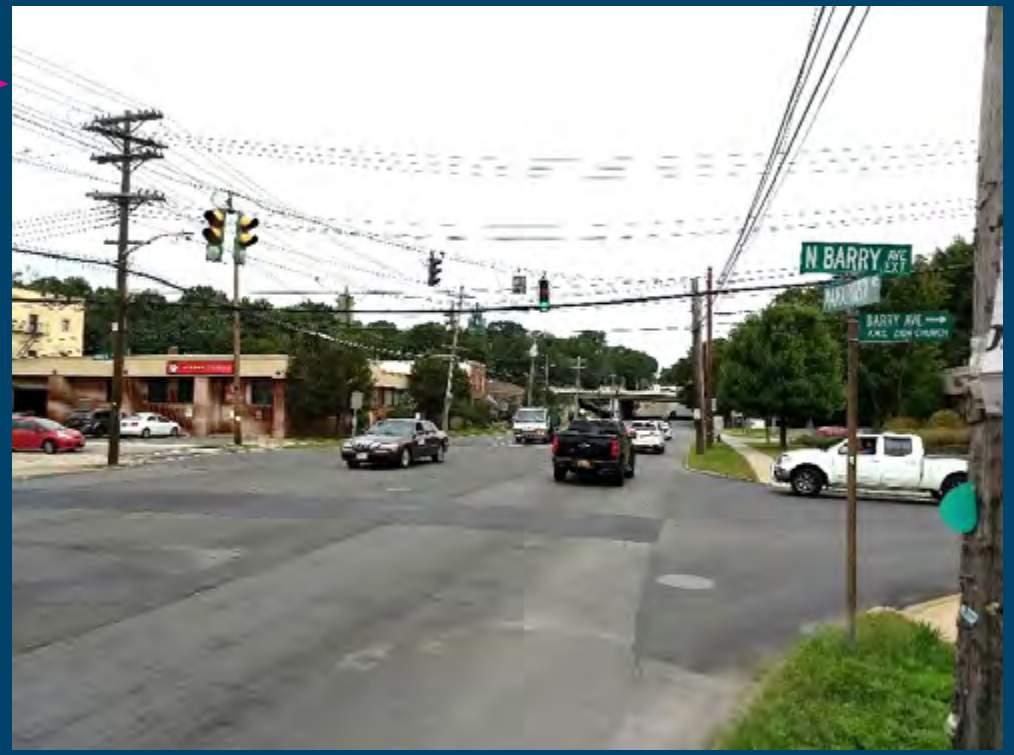
7. Traffic Analysis & Impacts



7. Traffic Analysis & Impacts

Purpose

- To identify impacts of the Redevelopment Scenarios on traffic operations at specific intersections in the Village.



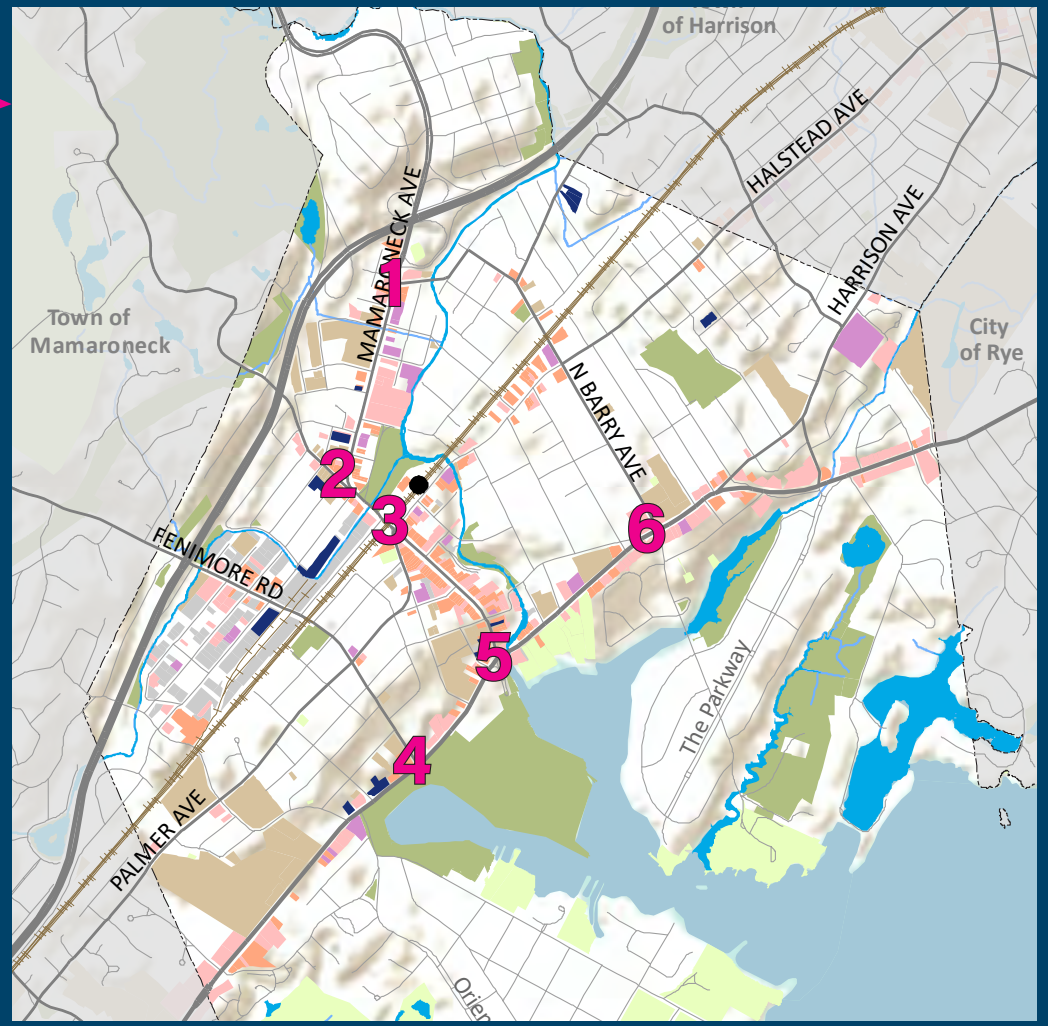
Overall Methodology

- Collect and analyze traffic data.
- Identify existing congested approaches/lane groups.
- Compare Existing Conditions to future “Reasonably Expected Build-Out” condition.
- Recommend mitigation strategies.

7. Traffic Analysis & Impacts

Key Intersections Analyzed

- Six key intersections analyzed:
  1. Mamaroneck Ave at N. Barry Ave Ext/Andrew St
  2. Mamaroneck Ave at Waverly Ave/Van Ranst Pl
  3. Mamaroneck Ave at Halstead Ave/Mt Pleasant Ave
  4. Boston Post Road (State Route 1) at Fenimore Rd
  5. Boston Post Road (State Route 1) at Mamaroneck Ave
  6. Boston Post Road (State Route 1) at N. Barry Ave/S. Barry Ave



7. Traffic Analysis & Impacts

Methodology

a. Collect Data

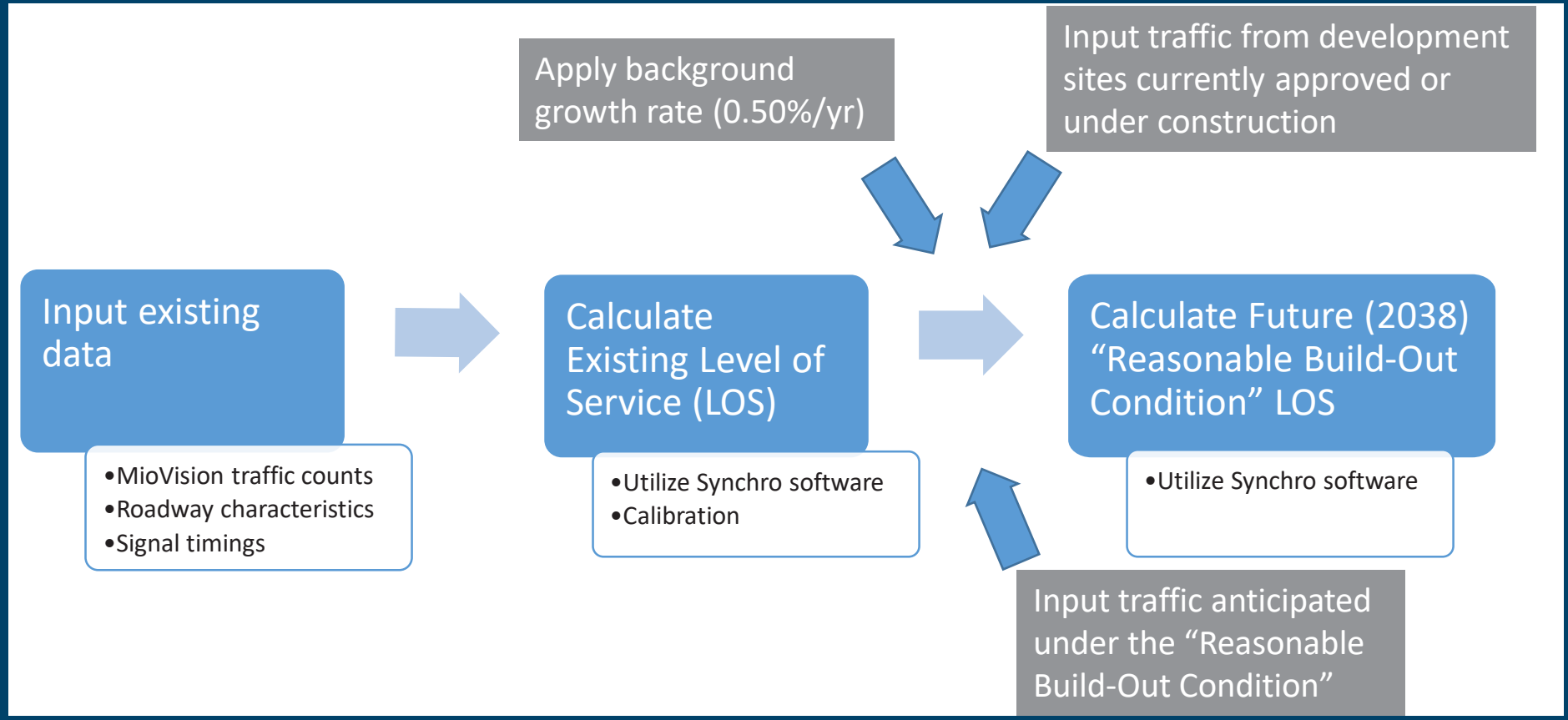
- » Utilize MioVision for Traffic Counts
  - Thursday June 14, 2018. AM 7:00-9:00, MIDDAY: 12:00-4:00, PM 4:30-6:30
  - Saturday June 16, 2018. MIDDAY 12:00-2:00
- » Conduct Field Investigation
  - Physical Inventory: Lane and Roadway Geometry, Parking Regulations
  - Observe: Queues, Processing Capacity, Traffic Signal Phasing and Timing

b. Analyze Existing Conditions

c. Future Projection Scenario

7. Traffic Analysis & Impacts

Analysis Process



7. Traffic Analysis & Impacts

About “Level of Service”

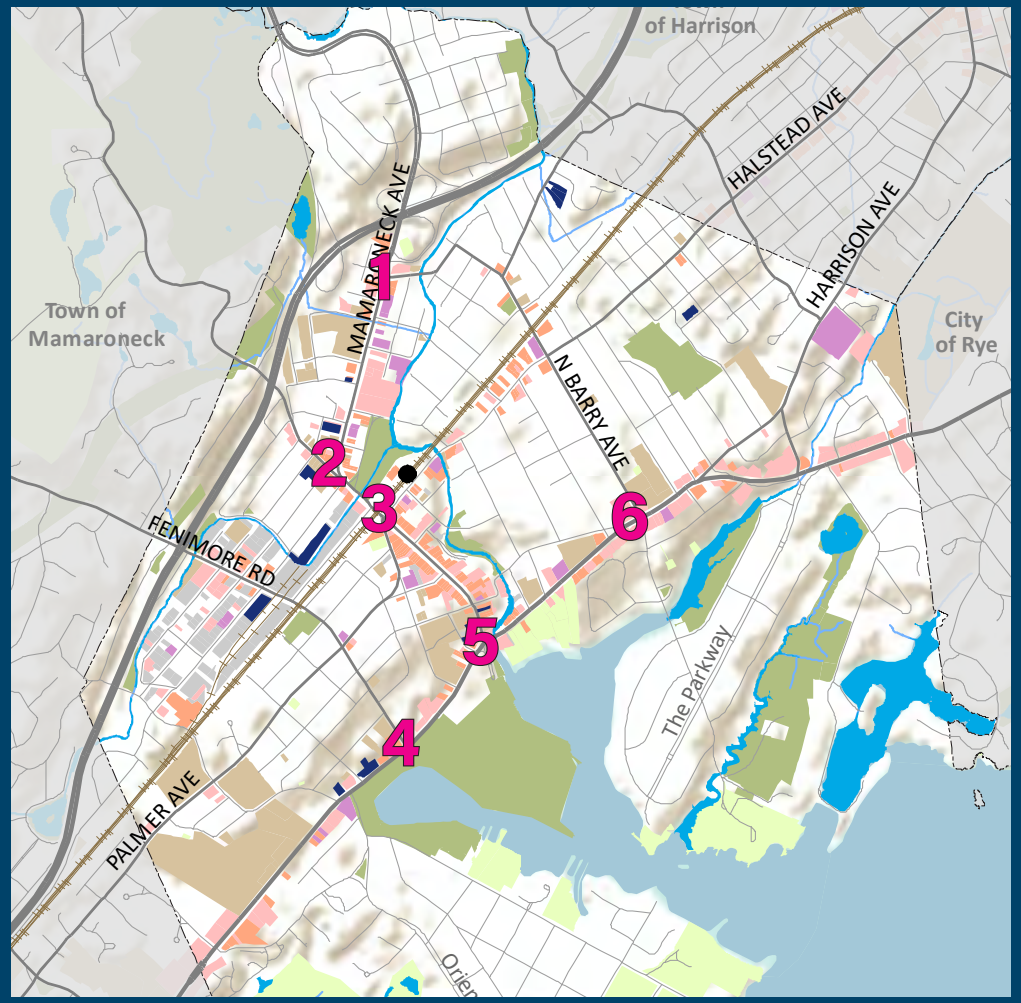
- Levels of Service (LOS) A, B, C represent Highly Favorable to Fair to levels of traffic flow.
- D: Approaching unstable traffic flow, but delays are tolerable.
- E: Unstable flow, operating near or at capacity with high delays and queuing.
- F: Operating over capacity, queues forming and failing to process through intersection causing increasingly higher delays, considered to be unacceptable to most drivers.



In this traffic impact analysis, a signalized lane grouping operating at E or F or with a v/c ratio of 0.90 or more is considered congested.

7. Traffic Analysis & Impacts

Existing Conditions (2018)

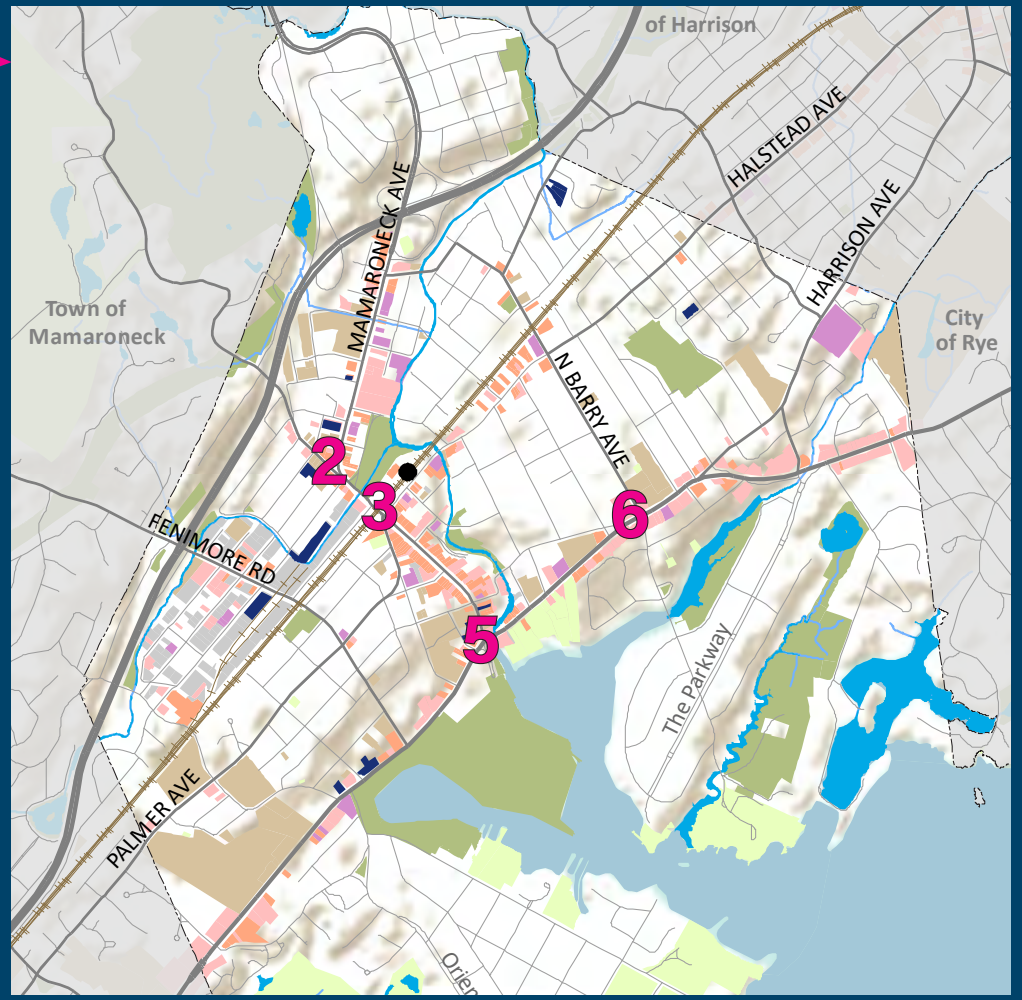


	Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)			Weekday MD Peak Hour (12:45 to 1:45 PM)			Weekday PM Peak Hour (4:30 to 5:30 PM)			Saturday MD Peak Hour (12:00 to 1:00 PM)		
				v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
	SIGNALIZED INTERSECTIONS														
1	1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.31	29.6	C	0.14	24.8	C	0.27	26.0	C	0.15	24.8	C
		WB	L	0.20	30.3	C	0.18	29.8	C	0.21	30.2	C	0.17	29.7	C
			TR	**1.05**	73.1	**E**	0.60	11.7	B	0.77	23.5	C	0.66	15.4	B
		NB	L	0.01	12.5	B	0.03	12.5	B	0.04	13.2	B	0.03	12.8	B
			TR	0.72	21.8	C	0.63	19.5	B	0.70	21.0	C	0.61	18.9	B
		SB	L	0.80	31.3	C	0.53	11.6	B	0.95	56.8	**E**	0.60	14.1	B
			TR	0.42	8.4	A	0.37	7.8	A	0.57	10.0	A	0.41	8.2	A
		Overall		*	**28.7**	**C**	*	**14.2**	**B**	*	**20.6**	**C**	*	**14.5**	**B**
2	2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**1.03**	**83.2**	**F**	0.77	39.4	D	**0.97**	67.1	**E**	0.79	41.4	D
			R	0.26	25.9	C	0.23	24.8	C	0.29	26.3	C	0.31	26.9	C
		WB	L	0.16	22.0	C	0.16	22.0	C	0.12	21.4	C	0.14	21.7	C
			R	0.30	24.8	C	0.14	22.1	C	0.21	23.1	C	0.14	22.1	C
		NB	TR	0.52	14.9	B	0.48	14.1	B	0.57	18.2	B	0.43	13.4	B
		SB	T	0.56	13.7	B	0.36	11.2	B	0.47	12.3	B	0.45	12.1	B
		Overall		*	**28.0**	**C**	*	**18.5**	**B**	*	**25.4**	**C**	*	**18.5**	**B**
3	3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.35	32.5	C	0.48	35.2	D	0.61	38.9	D	0.53	36.4	D
			TR	0.46	11.9	B	0.38	10.2	B	0.51	12.8	B	0.43	10.5	B
		NB	LTR	0.33	19.8	B	0.45	20.9	C	0.44	21.7	C	0.43	20.9	C
		SB	L	0.64	17.3	B	0.43	15.7	B	0.72	26.9	C	0.59	20.1	C
			T	0.69	14.4	B	0.57	13.8	B	0.59	13.0	B	0.56	13.5	B
			R	0.46	5.8	A	0.31	5.1	A	0.44	6.3	A	0.33	4.6	A
		NEB	L	**0.97**	79.1	**E**	0.84	57.3	**E**	**1.00**	**87.0**	**F**	0.84	56.6	**E**
			R	0.41	18.7	B	0.53	23.9	C	0.56	25.5	C	0.48	21.7	C
		Overall		*	**25.0**	**C**	*	**23.6**	**C**	*	**29.4**	**C**	*	**23.4**	**C**
4	4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.77	22.7	C	0.74	21.5	C	0.92	35.6	D	**1.04**	62.5	**E**
		WB	TR	0.51	15.2	B	0.49	14.8	B	0.69	17.9	B	0.77	18.1	B
		SB	L	0.21	14.2	B	0.23	14.3	B	0.33	15.5	B	0.26	14.7	B
			R	0.43	9.3	A	0.29	4.9	A	0.36	10.6	B	0.44	11.4	B
		Overall		*	**17.3**	**B**	*	**16.4**	**B**	*	**23.5**	**C**	*	**33.3**	**C**
5	5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.42	21.5	C	0.52	27.5	C	0.50	33.5	C	0.42	27.2	C
			TR	0.45	28.0	C	0.42	27.2	C	0.57	32.2	C	0.72	36.2	D
		WB	L	0.07	15.4	B	0.07	15.3	B	0.13	18.8	B	0.18	22.3	C
			TR	0.39	27.3	C	0.51	29.5	C	0.66	35.7	D	0.57	33.4	C
		NB	LT	0.05	39.5	D	0.35	43.9	D	0.74	68.5	**E**	0.81	75.0	**E**
			R	0.06	39.7	D	0.16	40.6	D	0.20	43.6	D	0.18	43.3	D
		SB	LT	0.32	43.2	D	0.58	50.6	D	0.77	67.6	**E**	0.71	62.7	**E**
			R	0.44	31.0	C	0.29	27.8	C	0.50	35.2	D	0.33	31.0	C
		Overall		*	**28.4**	**C**	*	**31.4**	**C**	*	**39.1**	**D**	*	**39.3**	**D**
6	6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.79	38.0	D	0.74	36.8	D	0.95	55.3	**E**	0.83	41.8	D
		WB	LTR	0.71	34.2	C	0.71	34.0	C	0.82	38.9	D	0.74	35.2	D
		NB	L	0.22	24.7	C	0.22	23.5	C	0.35	27.4	C	0.28	27.7	C
			TR	0.20	24.3	C	0.10	22.3	C	0.26	26.3	C	0.16	26.4	C
		SB	LTR	0.86	62.0	**E**	0.76	49.8	D	0.92	75.7	**E**	0.74	55.8	**E**
		Overall		*	**38.9**	**D**	*	**36.9**	**D**	*	**48.2**	**D**	*	**39.5**	**D**

7. Traffic Analysis & Impacts

Existing Conditions (2018)

- Locations with congested lane groups (LOS E or F) in two or more peak hours:
  - » Eastbound Left Turn at Waverly Ave and Mamaroneck Ave
  - » Northeastbound Left Turn (Mt Pleasant Ave) at Mamaroneck Ave and Halstead Avenue
  - » Northbound and Southbound Left-Through Lane Group at Mamaroneck Ave and Boston Post Rd (Rt 1).
  - » Southbound approach at Boston Post Rd (Rt 1) and N. Barry Ave/S. Barry Ave.



7. Traffic Analysis & Impacts

Existing Conditions (2018)

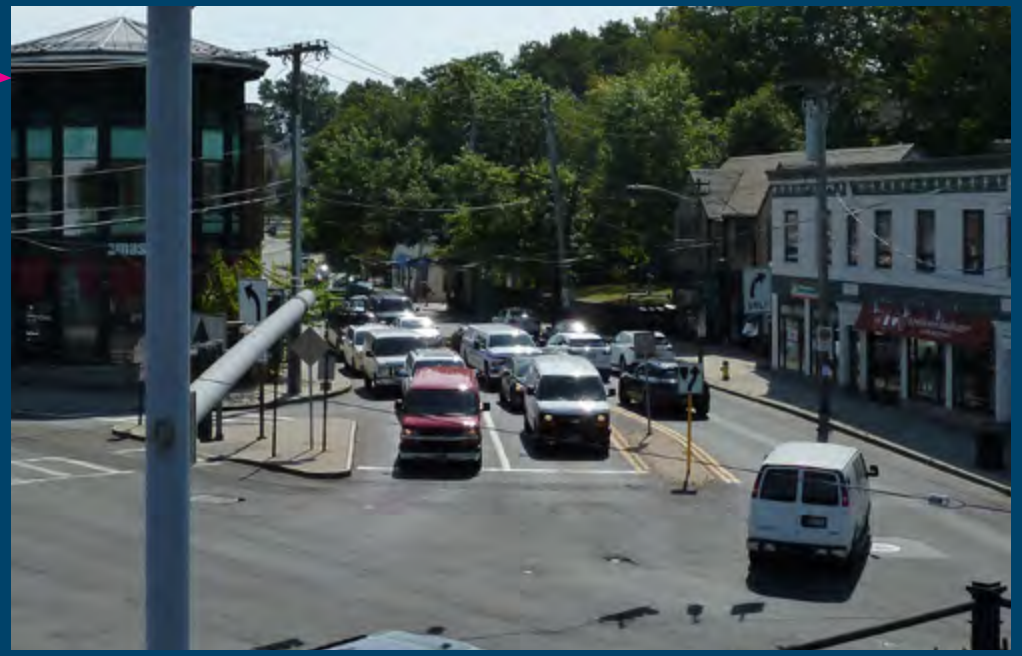
- Eastbound Left Turn at Waverly Ave and Mamaroneck Ave
  - » Operates at LOS F in AM peak hour and at LOS E in PM peak hour.
  - » Waverly Ave approach has high left turn volumes at peak hours, with limited green time allotted to minor street approach (Waverly Ave and Van Ranst Pl).
  - » North crosswalk with pedestrians crossing concurrently with minor street phase creates conflicts and reduces processing capacity of lane group, contributing to poor LOS.



7. Traffic Analysis & Impacts

Existing Conditions (2018)

- Northeastbound Left Turn (Mt Pleasant Ave) at Mamaroneck Ave and Halstead Avenue
  - Operates at LOS F in weekday PM peak, and at LOS E in remaining analyzed peak hours.
  - Three phase cycle dedicates the majority of green time to Mamaroneck Ave, limiting green time shared between Halstead Ave and Mt Pleasant Ave approaches which occur in separate phases.



7. Traffic Analysis & Impacts

Existing Conditions (2018)

- Northbound and Southbound Left-Through Lane Group at Mamaroneck Ave and Boston Post Rd (Rt 1).
  - » Both lane groups operate at LOS E in the weekday PM and Saturday midday peak hours.
  - » Higher demand at northbound approach during weekday PM and Saturday peak hours reduces processing capacity for NB and SB left turns.
  - » Long cycle length can add to delays on minor street approaches (NB & SB); cycle length is longer when ped phase activated (via button).



7. Traffic Analysis & Impacts

Existing Conditions (2018)

- Southbound approach at Boston Post Rd (Rt 1) and N. Barry Ave/S. Barry Ave.
  - » Operates at LOS E in weekday AM, PM and Saturday midday peak hours.
  - » Complicated actuated (demand-based) signal timing + five phase signal (w/actuated pedestrian phase) provides limited green time to minor street to process high demand of EB and WB phases. NB approach includes a demand activated exclusive NB phase when vehicle enters NB left turn lane.



  - » SB approach consists of one approach lane for all movements due to N. Barry Ave street width (30 feet curb to curb).

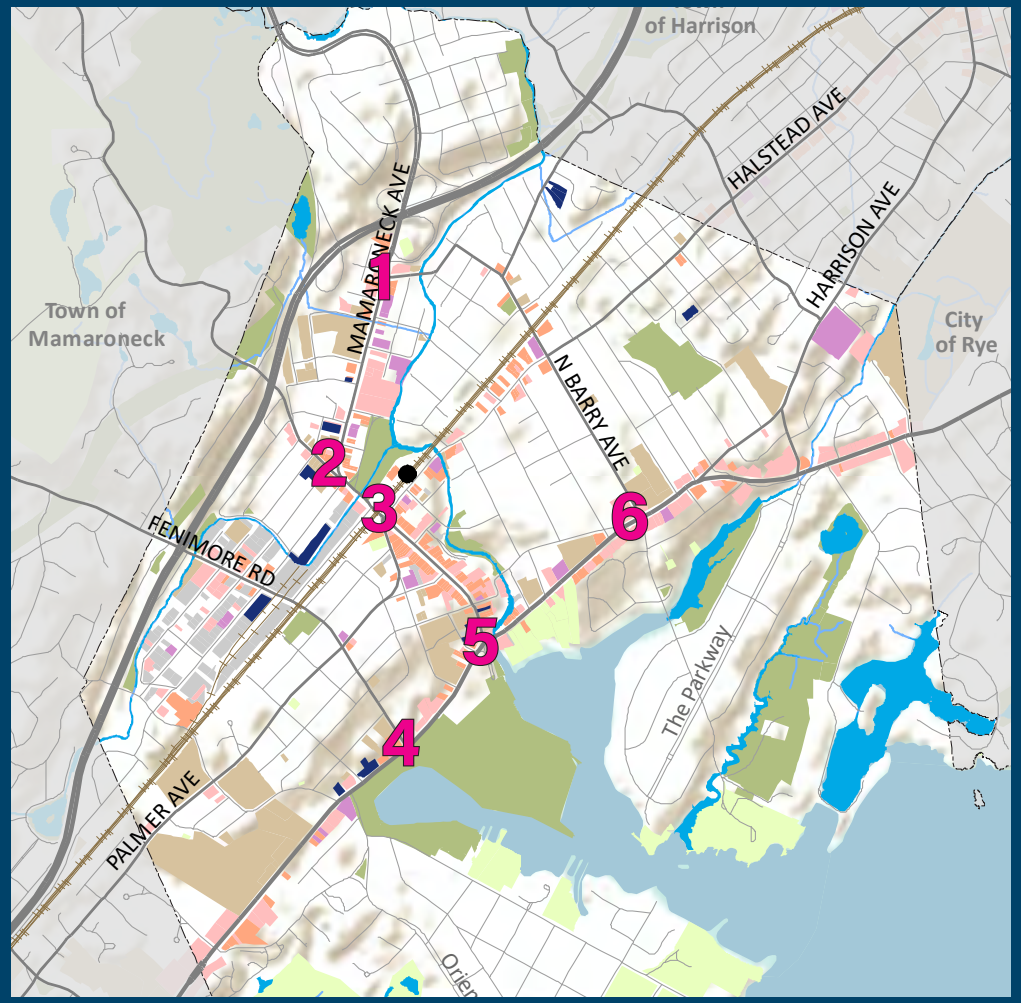
7. Traffic Analysis & Impacts

Future Build-Out Traffic Conditions

- Incorporate traffic volumes from developments already approved or under construction:
  - Sheldrake Estates/250 Waverly Avenue
  - 805 Mamaroneck Avenue Commercial Development
- Using ITE *Trip Generation Handbook*, forecast traffic for parcels identified for potential redevelopment.
- Apply a 0.5% compounded background growth rate to traffic volumes to account for development outside of the moratorium study area (in the Village or in nearby towns).

7. Traffic Analysis & Impacts

Build-Out Conditions (2038)



	Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)			Weekday MD Peak Hour (12:45 to 1:45 PM)			Weekday PM Peak Hour (4:30 to 5:30 PM)			Saturday MD Peak Hour (12:00 to 1:00 PM)		
				v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
	SIGNALIZED INTERSECTIONS														
1	1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.33	29.2	C	0.14	24.8	C	0.27	25.9	C	0.14	24.4	C
		WB	L	0.17	29.7	C	0.15	29.3	C	0.19	30.1	C	0.12	28.9	C
			TR	**1.22**	**136.8**	**F**	0.66	15.8	B	0.82	28.7	C	0.73	20.5	C
		NB	L	0.01	12.5	B	0.02	12.7	B	0.04	13.5	B	0.02	12.8	B
			TR	0.86	27.7	C	0.70	21.0	C	0.74	22.0	C	0.68	20.4	C
		SB	L	**0.99**	78.1	**E**	0.60	15.8	B	**1.10**	**101.8**	**F**	0.69	21.5	C
			TR	0.44	8.5	A	0.41	8.2	A	0.65	11.3	B	0.45	8.6	A
		Overall		*	**47.7**	**D**	*	**15.8**	**B**	*	**26.0**	**C**	*	**16.5**	**B**
2	2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**1.22**	**146.5**	**F**	0.88	50.6	D	**1.09**	**98.8**	**F**	0.91	55.9	**E**
			R	0.42	30.7	C	0.31	27.0	C	0.34	27.9	C	0.42	30.4	C
		WB	L	0.16	22.0	C	0.16	22.0	C	0.12	21.4	C	0.14	21.7	C
			R	0.30	24.8	C	0.14	22.1	C	0.21	23.1	C	0.14	22.1	C
		NB	TR	0.59	18.4	B	0.53	15.8	B	0.62	23.4	C	0.52	15.7	B
		SB	T	0.60	14.4	B	0.41	11.7	B	0.53	13.2	B	0.51	12.8	B
		Overall		*	**42.6**	**D**	*	**21.5**	**C**	*	**33.6**	**C**	*	**22.2**	**C**
3	3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.43	34.1	C	0.52	36.1	D	0.65	40.7	D	0.59	38.2	D
			TR	0.49	13.4	B	0.41	10.3	B	0.61	21.2	C	0.49	11.4	B
		NB	LTR	0.39	20.9	C	0.52	22.4	C	0.50	22.9	C	0.52	22.8	C
		SB	L	0.80	30.0	C	0.54	22.2	C	0.90	46.9	D	0.76	32.5	C
			T	0.76	18.1	B	0.67	18.4	B	0.70	14.5	B	0.67	14.6	B
			R	0.52	6.9	A	0.34	5.9	A	0.50	7.6	A	0.37	4.5	A
		NEB	L	**1.10**	**114.5**	**F**	0.90	66.4	**E**	**1.05**	**100.1**	**F**	0.89	64.4	**E**
			R	0.44	20.1	C	0.56	25.6	C	0.61	28.1	C	0.51	23.3	C
		Overall		*	**33.1**	**C**	*	**26.4**	**C**	*	**33.8**	**C**	*	**25.9**	**C**
4	4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.85	28.2	C	0.83	27.0	C	**1.09**	**80.1**	**F**	**1.20**	**122.1**	**F**
		WB	TR	0.59	16.6	B	0.53	15.4	B	0.74	19.3	B	0.84	21.5	C
		SB	L	0.23	14.4	B	0.25	14.6	B	0.37	16.0	B	0.29	15.0	B
			R	0.51	13.3	B	0.28	5.6	A	0.32	10.5	B	0.44	12.4	B
		Overall		*	**20.4**	**C**	*	**19.2**	**B**	*	**41.6**	**D**	*	**56.3**	**E**
5	5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.47	23.8	C	0.61	32.4	C	0.63	42.3	D	0.51	32.6	C
			TR	0.48	28.6	C	0.45	27.7	C	0.62	33.5	C	0.77	38.1	D
		WB	L	0.08	15.6	B	0.08	15.6	B	0.15	19.9	B	0.21	25.2	C
			TR	0.43	27.9	C	0.54	30.3	C	0.71	37.6	D	0.62	34.7	C
		NB	LT	0.06	39.6	D	0.44	46.8	D	0.88	**87.9**	**F**	**1.03**	120.4	**F**
			R	0.07	39.6	D	0.18	40.7	D	0.23	43.9	D	0.20	43.5	D
		SB	LT	0.42	45.5	D	0.68	55.8	**E**	0.88	**83.2**	**F**	0.92	88.6	**F**
			R	0.52	33.4	C	0.33	28.6	C	0.55	36.8	D	0.38	32.1	C
		Overall		*	**29.8**	**C**	*	**33.2**	**C**	*	**43.5**	**D**	*	**46.6**	**D**
6	6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.83	40.2	D	0.77	37.5	D	**1.08**	**89.6**	**F**	0.85	43.5	D
		WB	LTR	0.77	37.4	D	0.72	34.1	C	0.87	41.6	D	0.79	37.6	D
		NB	L	0.22	25.7	C	0.22	24.4	C	0.36	27.5	C	0.30	28.9	C
			TR	0.21	25.4	C	0.10	23.2	C	0.26	26.3	C	0.16	27.2	C
		SB	LTR	0.94	77.1	**E**	0.80	54.2	D	**0.97**	**85.5**	**F**	0.76	58.7	**E**
		Overall		*	**43.4**	**D**	*	**38.0**	**D**	*	**63.2**	**E**	*	**41.5**	**D**

7. Traffic Analysis & Impacts

Build-Out Conditions (2038)

- Locations with congested lane groups in two or more peak hours:
  - Eastbound Left Turn at Waverly Ave and Mamaroneck Ave
    - Operates at LOS F in weekday AM peak hour, and degrades to LOS F and E in weekday PM and Saturday midday peak hour, respectively.
    - Increase of EB Left Turn volumes exacerbate existing congestion, increasing queuing and delays.
  - Northeastbound Left Turn (Mt Pleasant Ave) at Mamaroneck Ave and Halstead Avenue
    - Continues to operate at LOS F but higher delays in weekday PM peak, and degrades to LOS F in the AM peak and LOS E in the weekday and Saturday midday peak hours.
    - Higher traffic volumes at lane group exacerbate existing signal timing and phasing constraints.

7. Traffic Analysis & Impacts

Build-Out Conditions (2038)

- Locations with congested lane groups in two or more peak hours:
  - Northbound and Southbound Left-Through Lane Group at Mamaroneck Ave and Boston Post Rd (Rt 1).
    - Both lane groups operates at LOS E in the weekday PM and Saturday midday peak hours.
    - Higher demand at northbound approach during weekday PM and Saturday peak hours reduces processing capacity for northbound and southbound left turns.
    - Long cycle length can contribute to delays on minor street approaches (NB & SB), cycle length becomes longer when pedestrian phase is activated (push button).

7. Traffic Analysis & Impacts

Build-Out Conditions (2038)

- Locations with congested lane groups in two or more peak hours:
  - Southbound approach at Boston Post Rd (Rt 1) and N. Barry Ave/S. Barry Ave.
    - Operates at LOS E in weekday AM, PM and Saturday midday peak hours.
    - Complicated actuated (demand based) signal timing and five phase signal (with actuated pedestrian phase) provides limited green time to minor street in order to process high demand of eastbound and westbound phases. Northbound approach includes a demand activated exclusive north bound phase when vehicle enters northbound left turn lane.
    - Southbound approach consists of one approach lane for all movements due to N. Barry Ave street width (30 feet curb to curb).

7. Traffic Analysis & Impacts

Build-Out Conditions (2038)

- Shows both intersections with worsening LOS.

Congested Lane Groups by Peak Hour

Condition	Peak Hour			
	AM	Midday	PM	Sat Midday
Existing	4	1	7	5
Reasonable Build-Out	**5**	**2**	**9**	**6**

Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)			Weekday MD Peak Hour (12:45 to 1:45 PM)			Weekday PM Peak Hour (4:30 to 5:30 PM)			Saturday MD Peak Hour (12:00 to 1:00 PM)		
			v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS	v/c	Delay (sec/veh)	LOS
SIGNALIZED INTERSECTIONS														
1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.33	29.2	C	0.14	24.8	C	0.27	25.9	C	0.14	24.4	C
	WB	L	0.17	29.7	C	0.15	29.3	C	0.19	30.1	C	0.12	28.9	C
		TR	**1.22**	**136.8**	**F**	0.66	15.8	B	0.82	28.7	C	0.73	20.5	C
	NB	L	0.01	12.5	B	0.02	12.7	B	0.04	13.5	B	0.02	12.8	B
		TR	0.86	27.7	C	0.70	21.0	C	0.74	22.0	C	0.68	20.4	C
	SB	L	**0.99**	78.1	**E**	0.60	15.8	B	**1.10**	**101.8**	**F**	0.69	21.5	C
		TR	0.44	8.5	A	0.41	8.2	A	0.65	11.3	B	0.45	8.6	A
	Overall		*	**47.7**	**D**	*	**15.8**	**B**	*	**26.0**	**C**	*	**16.5**	**B**
2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**1.22**	**146.5**	**F**	0.88	50.6	D	**1.09**	**98.8**	**F**	0.91	55.9	**E**
		R	0.42	30.7	C	0.31	27.0	C	0.34	27.9	C	0.42	30.4	C
	WB	L	0.16	22.0	C	0.16	22.0	C	0.12	21.4	C	0.14	21.7	C
		R	0.30	24.8	C	0.14	22.1	C	0.21	23.1	C	0.14	22.1	C
	NB	TR	0.59	18.4	B	0.53	15.8	B	0.62	23.4	C	0.52	15.7	B
	SB	T	0.60	14.4	B	0.41	11.7	B	0.53	13.2	B	0.51	12.8	B
	Overall		*	**42.6**	**D**	*	**21.5**	**C**	*	**33.6**	**C**	*	**22.2**	**C**
3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.43	34.1	C	0.52	36.1	D	0.65	40.7	D	0.59	38.2	D
		TR	0.49	13.4	B	0.41	10.3	B	0.61	21.2	C	0.49	11.4	B
	NB	LTR	0.39	20.9	C	0.52	22.4	C	0.50	22.9	C	0.52	22.8	C
	SB	L	0.80	30.0	C	0.54	22.2	C	0.90	46.9	D	0.76	32.5	C
		T	0.76	18.1	B	0.67	18.4	B	0.70	14.5	B	0.67	14.6	B
		R	0.52	6.9	A	0.34	5.9	A	0.50	7.6	A	0.37	4.5	A
	NEB	L	**1.10**	**114.5**	**F**	0.90	66.4	**E**	**1.05**	**100.1**	**F**	0.89	64.4	**E**
		R	0.44	20.1	C	0.56	25.6	C	0.61	28.1	C	0.51	23.3	C
	Overall		*	**33.1**	**C**	*	**26.4**	**C**	*	**33.8**	**C**	*	**25.9**	**C**
4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.85	28.2	C	0.83	27.0	C	**1.09**	**80.1**	**F**	**1.20**	**122.1**	**F**
	WB	TR	0.59	16.6	B	0.53	15.4	B	0.74	19.3	B	0.84	21.5	C
	SB	L	0.23	14.4	B	0.25	14.6	B	0.37	16.0	B	0.29	15.0	B
		R	0.51	13.3	B	0.28	5.6	A	0.32	10.5	B	0.44	12.4	B
	Overall		*	**20.4**	**C**	*	**19.2**	**B**	*	**41.6**	**D**	*	**56.3**	**E**
5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.47	23.8	C	0.61	32.4	C	0.63	42.3	D	0.51	32.6	C
		TR	0.48	28.6	C	0.45	27.7	C	0.62	33.5	C	0.77	38.1	D
	WB	L	0.08	15.6	B	0.08	15.6	B	0.15	19.9	B	0.21	25.2	C
		TR	0.43	27.9	C	0.54	30.3	C	0.71	37.6	D	0.62	34.7	C
	NB	LT	0.06	39.6	D	0.44	46.8	D	0.88	**87.9**	**F**	**1.03**	120.4	**F**
		R	0.07	39.6	D	0.18	40.7	D	0.23	43.9	D	0.20	43.5	D
	SB	LT	0.42	45.5	D	0.68	55.8	**E**	0.88	**83.2**	**F**	0.92	88.6	**F**
		R	0.52	33.4	C	0.33	28.6	C	0.55	36.8	D	0.38	32.1	C
	Overall		*	**29.8**	**C**	*	**33.2**	**C**	*	**43.5**	**D**	*	**46.6**	**D**
6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.83	40.2	D	0.77	37.5	D	**1.08**	**89.6**	**F**	0.85	43.5	D
	WB	LTR	0.77	37.4	D	0.72	34.1	C	0.87	41.6	D	0.79	37.6	D
	NB	L	0.22	25.7	C	0.22	24.4	C	0.36	27.5	C	0.30	28.9	C
		TR	0.21	25.4	C	0.10	23.2	C	0.26	26.3	C	0.16	27.2	C
	SB	LTR	0.94	77.1	**E**	0.80	54.2	D	**0.97**	**85.5**	**F**	0.76	58.7	**E**
	Overall		*	**43.4**	**D**	*	**38.0**	**D**	*	**63.2**	**E**	*	**41.5**	**D**

7. Traffic Analysis & Impacts

Potential Mitigation Strategies

- To improve operation of intersection by reducing the intensity and number of congested lane groups, consider:
  - Signal timing/phasing adjustments.
  - Roadway re-striping and geometric reconfigurations.
  - Removing on-street parking spaces to add a travel lane.
- Specific Improvements:
  - Mamaroneck Ave & Waverly Ave/Van Ranst Pl: relocate the north crosswalk to the south side of intersection to reduce pedestrian conflicts with high volume WB Left Turn Lane.
  - Fenimore Rd & Boston Post Road (Rt 1): Increase cycle length from 70 sec. to 90 sec and add new eastbound exclusive phase (for EB Left turns).

7. Traffic Analysis & Impacts

Summary of Congested Lane Groups (Existing & Future)

- Intersection improvements would reduce delays and v/c ratios, with some lane groups no longer considered congested.
  - » Reduced number of congested lane groups in weekday AM, midday, and Saturday midday peak hours.
  - » While the number of congested lane groups would remain the same in the PM peak hour, delays and v/c ratios would be lower with the intersection improvements.

Congested Lane Groups by Peak Hour

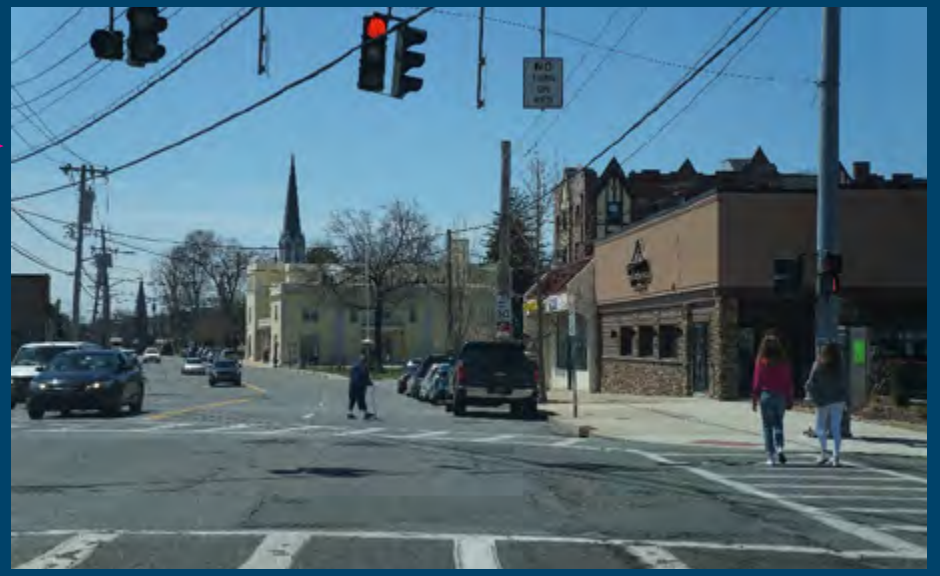
Condition	Peak Hour			
	AM	Midday	PM	Sat Midday
Existing	4	1	7	5
Reasonable Build-Out	**5**	**2**	**9**	**6**
Reasonable Build-Out w/ Improvements	*4*	*0*	*9*	*2*

Note: A signalized lane grouping operating at LOS E or F or with a v/c ratio of 0.90 or more is considered congested.

7. Traffic Analysis & Impacts

Additional Info: Bicycle & Pedestrians Counts

- Pedestrians concentrate along Mamaroneck Ave adjacent to train station.
  - » 193 to 409 pedestrian trips in one peak hour at Mamaroneck Ave and Halstead Ave
  - » 100 to 173 pedestrian trips in one peak hour at Mamaroneck Ave and Waverly Ave
- Bicycle Trips: 2 to 18 bicyclists observed at each intersection during peak hour.
- Greatest number of bicyclists (24) at Mamaroneck Ave and Boston Post Rd.



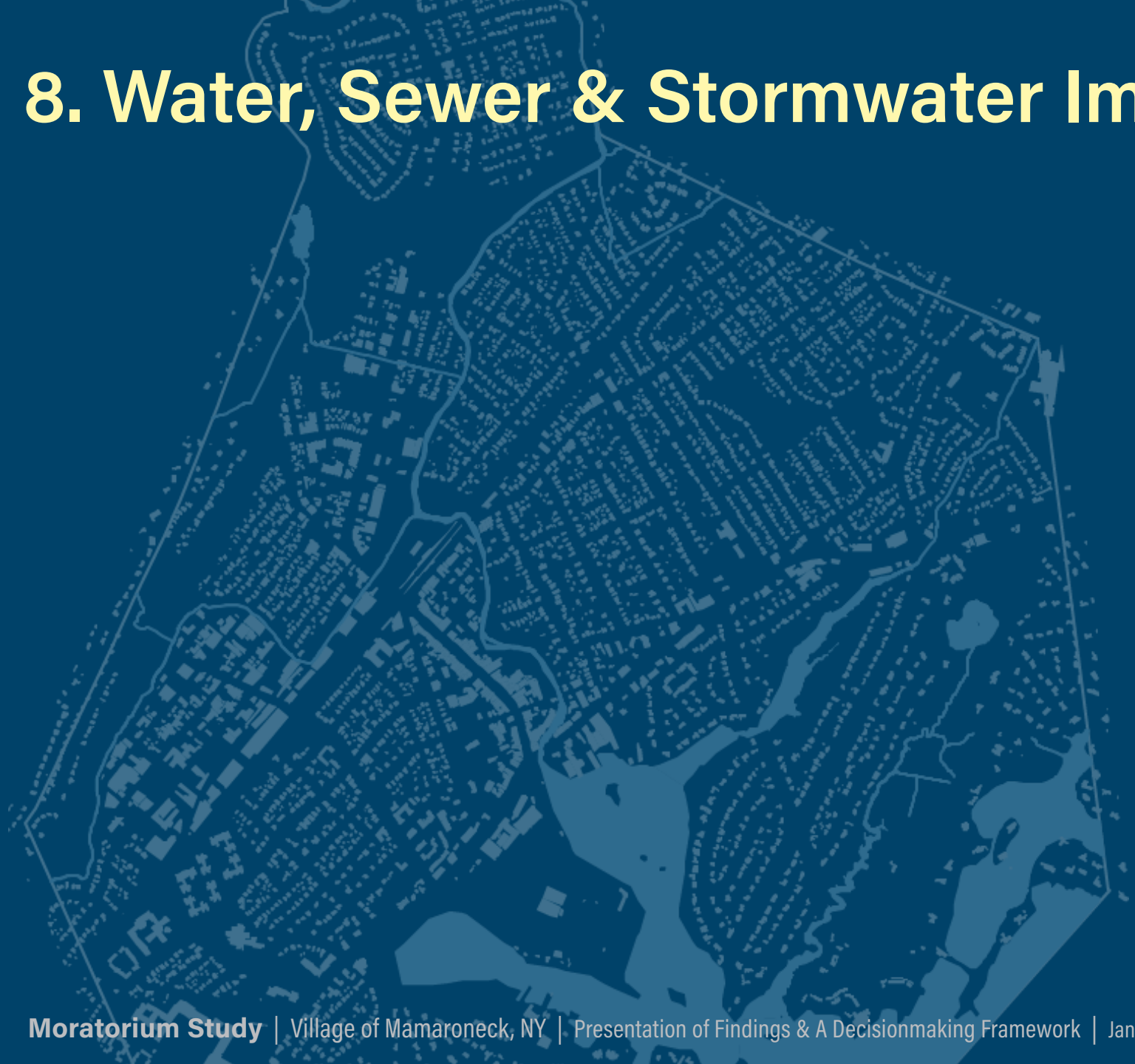


7. Traffic Analysis & Impacts

Additional Info: Travel to and Parking at the Train Station

- Multifamily residential development will likely add to the number of people utilizing the Metro-North Railroad Station.
  - Vehicular and pedestrian/bicycle activity in the vicinity of station might increase, especially at intersections near the station.
  - Demand for station parking might increase.
- According to Metro-North, Mamaroneck Station has approx. 627 parking spaces (265 operated by Metro-North and approx. 362 by others).
  - MNR's Parking Facility (spread over 2 lots and operated by LAZ) is approx. 90% full. Permits are sold out and there is currently a wait list of approx. 525 customers. There are no current plans for additional parking on the MTA/MNR-owned property.

8. Water, Sewer & Stormwater Impacts



8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure

- Conducted field visit with Westchester Joint Water Works (WJWW). Identified the following distribution system challenges:
  - Limitations of the water supply transmission lines north of the Village.
  - Limited pipe sizes in some locations (e.g., 6-inch pipes along the east side of Mamaroneck Ave in the C-2 District).
  - Irrigation of yards during warm seasons is a burden on the water supply system.
- Evaluated land use and density changes from redevelopment to determine their impact on water and sewer infrastructure. The following infrastructure was considered: water supply systems, water distribution systems, sanitary sewer collection systems, wastewater treatment plant.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure

- Methodology
  - Estimated water demand and sewage generation of redevelopment scenarios under existing and build-out conditions and determined the incremental changes.
  - Water usage and sewage generation rates based on Chapter 13 from *City Environmental Quality Review Technical Manual* including:
    - 150 gallons per day (gpd) per person for Residential Use (as recommended by Board of Trustees).
    - 0.10 gpd/sf for "Office"; 0.24 gpd/sf for "Local Retail" and "Other Retail/Service/Industrial Uses"; 0.17 gpd/sf for Air Conditioning
    - Assume 2.75 people per dwelling unit based on pop. est. of parcels in moratorium area.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure

- Results

Existing Water Consumption/Wastewater Generated

Land Use	Area/Units		Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Residential	286,147 gsf	298 DU	81,950	48,645
Office	86,649 gsf	- -	8,665	14,730
Local Retail	113,306 gsf	- -	27,193	19,262
Other Retail/Service/Industrial Uses	171,229 gsf	- -	41,095	29,109
Total Water Demand (gpd)				**270,650**
Total Wastewater Generation (gpd)				**158,903**

Build-Out Water Consumption/Wastewater Generated

Land Use	Area/Units		Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Residential	2,203,731 gsf	1440 DU	396,000	374,634
Office	0 gsf	- -	0	0
Local Retail	50,677 gsf	- -	12,162	8,615
Other Retail/Service/Industrial Uses	0 gsf	- -	0	0
Total Water Demand (gpd)				**791,412**
Total Wastewater Generation (gpd)				**408,162**

gpd = gallons per day

	Net Increment
Total Water Demand (gpd)	**520,762**
Total Wastewater Generation (gpd)	**249,259**

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure

- Water Consumption
  - Net increase of approximately 678,000 gallons per day.
  - Distribution system upgrades may be required (also need to consider fire protection in distribution system)
  - Increase represents 4.9% of Westchester Joint Waterworks (WJWW) average daily water supply* to their entire service system of 13.9 MGD (MIllions of Gallons per Day)



An Olympic-sized swimming pool holds more than 660,0000 gallons of water.

**WJWW daily average water supply to entire service system is 13.9 MGD based on 2015 data (www.wjww.com/about).*

WWJW notes potential issues with the distribution system.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure

- Wastewater Generation
  - » Net increment of approximately 406,000 gallons per day.
  - » Collection system upgrades may be required.
  - » Increase falls within the 8.6 MGD available average daily capacity of Mamaroneck Wastewater Treatment Plant (WWTP).*



An Olympic-sized swimming pool holds more than 660,0000 gallons of water.

**Mamaroneck WWTP is designed to treat average daily flow of 23.2 MGD and 2014 annual report indicated average flow of 14.6 MGD, leaving 8.6 MGD available average daily capacity (environment.westchestergov.com/images/stories/pdfs/2014ARredact.pdf).*

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure: Information about Systemwide Responsibilities & Costs

- Water Distribution System: Ownership and Funding
  - WJWW owns the supply and transmission mains, pump stations and storage facilities, and operates the entire system as a unit.
  - WJWW owns the service connection up to and including the meter.
  - WJWW is funded by its water rates and three contributing municipalities: Town & Village of Mamaroneck and Town/Village of Harrison. The Board of Directors is composed of the Chief Elected Official from each municipality.
  - WJWW invests in the distribution system to ensure appropriate capacity. It also pursues grants from NYS to fund capital investments to these facilities.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure: Information about Systemwide Responsibilities & Costs

- Sanitary Sewer System: Ownership and Funding
  - The Village manages and maintains 43 miles of a sanitary collection sewer and 2 sewer pump stations. Volumes from the sewers flow into the County trunk sewer system and are treated at the County sewage treatment plant.
  - The Village maintains, repairs, improves and replaces, when necessary, components of its sanitary sewer collection system to reduce extraneous flows and illegal discharges before they enter County trunk lines.
  - Propertyowners pay a sanitary sewer rent fee for the above. The fee is based on water consumption, with a standard sewer rent fee per unit of water, with one unit being 100 cubic feet (one ccf) or 748 gallons.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure: Information about Systemwide Responsibilities & Costs

- Water Distribution System: Costs Apportioned to the Developer of a Property
  - WWJW can require a developer to undertake modeling to determine system requirements to service a project and the impacts of a project on the distribution system (e.g., hydrant flow tests to measure flow and pressure drop at each adjacent water main to establish baseline) under anticipated domestic and fire demand.
  - Results of the modeling will identify any modifications needed to service the project, and the cost of their design, construction and construction oversight is typically paid for by the developer.
  - NYS and County regulations determine ownership requirements of expansions and/or upgrades. Typically, water lines will be owned and maintained by WJWW.
  - The design and construction of the water main improvements must be in accordance with WJWW requirements.

8. Water, Sewer & Stormwater Impacts

Water & Sewer Infrastructure: Information about Systemwide Responsibilities & Costs

- Sanitary Sewer System: Costs Apportioned to the Developer of a Property
  - The Village Engineer considers pre- and post-construction impacts of a project and may request a sewershed analysis. Structural integrity of a sewer pipe at the point of connection and adjacent pipe segments might also be considered.
  - When an extension of the existing sanitary sewer network is needed, the Village Engineer will typically require the developer to pay for costs associated with design, construction, and construction oversight of improvements.
  - While the County recommends an inflow and infiltration mitigation of 3:1, the Village lacks a fund to accept payments for this work and does not keep a list of improvements with corresponding inflow and infiltration estimates.

8. Water, Sewer & Stormwater Impacts

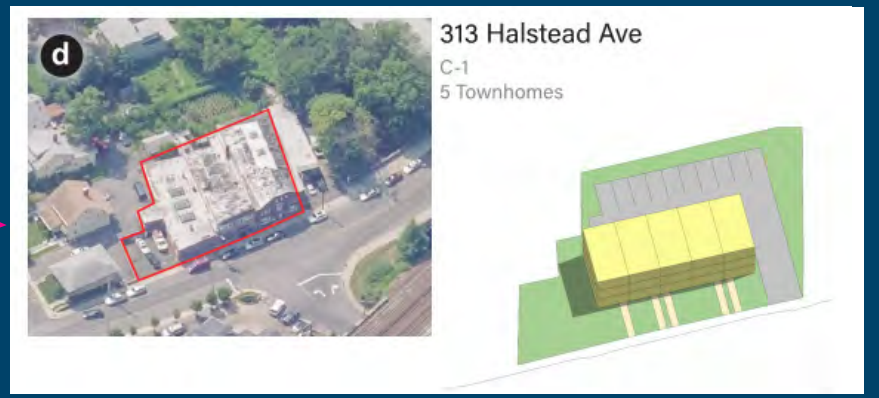
Water & Sewer Infrastructure: Information about Systemwide Responsibilities & Costs

- Sanitary Sewer System: Costs Apportioned to the Developer of a Property
  - Designs require review and approval of the Village Engineer, the Westchester County Department of Health and possibly the Westchester County Department of Environmental Facilities (when connecting directly to the County Infrastructure).
  - In some instances, State and/or Federal agencies will also need to be involved.

8. Water, Sewer & Stormwater Impacts

Stormwater

- Determine change in impervious and pervious cover due to redevelopment.
- Methodology*
  - Utilize the 26 “test-for-fit” sites (see page 35)
  - Determine impervious/pervious cover of each site under existing conditions.
  - Determine impervious/pervious cover of each site under the redevelopment scenario.
  - Compare change in impervious/pervious cover.







**Building square footage data was not included in assessment data provided by Towns*

8. Water, Sewer & Stormwater Impacts

Stormwater: Pervious & Impervious Coverage

- Results
  - The 26 test-for-fit parcels, if redeveloped according to the scenarios, would cumulatively, over time, lead to a net 33% increase in pervious land area.* Taken together, this amounts to just over 1 acre.
    - 17 of the 26 parcels show an increase in pervious cover (i.e., a decrease in impervious cover).
    - 9 of the 26 parcels show a decrease in pervious cover (i.e., an increase in impervious cover).

**Most of the infill redevelopment activities in the C-1 and C-2 zoning districts would be subject to Planning Board review, and the Planning Board has been encouraged applicants to reduce impervious surface cover, the potential net increase in pervious land area could be greater than 33%.*

8. Water, Sewer & Stormwater Impacts

Stormwater Management & Flooding

- Redevelopment will require following the Village's Stormwater Management Regulations:
  - §294-8(2). Postconstruction runoff controls for new development and redevelopment projects: Construction activities for new development that results in a land disturbance greater than 2,000 sq. ft. and less than one acre shall include stormwater quality and quantity controls ... and to attenuate the postdevelopment 25-year design storm, twenty-four-hour peak discharge rate (Qf) to predevelopment rates.
- Therefore, redevelopment of an existing, developed property (the properties analyzed are already developed) will improve stormwater control.

9. Appendices



9. Appendices

Reports

- Appendix A: Parcel Analysis, Redevelopment Scenarios & Fiscal Impacts
- Appendix B: Fiscal Impacts of Single-Family Homes Resulting from Subdivisions in Residential Neighborhoods
- Appendix C: Traffic Study
- Appendix D: Traffic Study Appendices

Click on any of the items above to go to a Google Drive folder that contains the Appendices



The Moratorium Study was produced by NV5 New York and Urban Partners of Philadelphia, PA

Moratorium Study

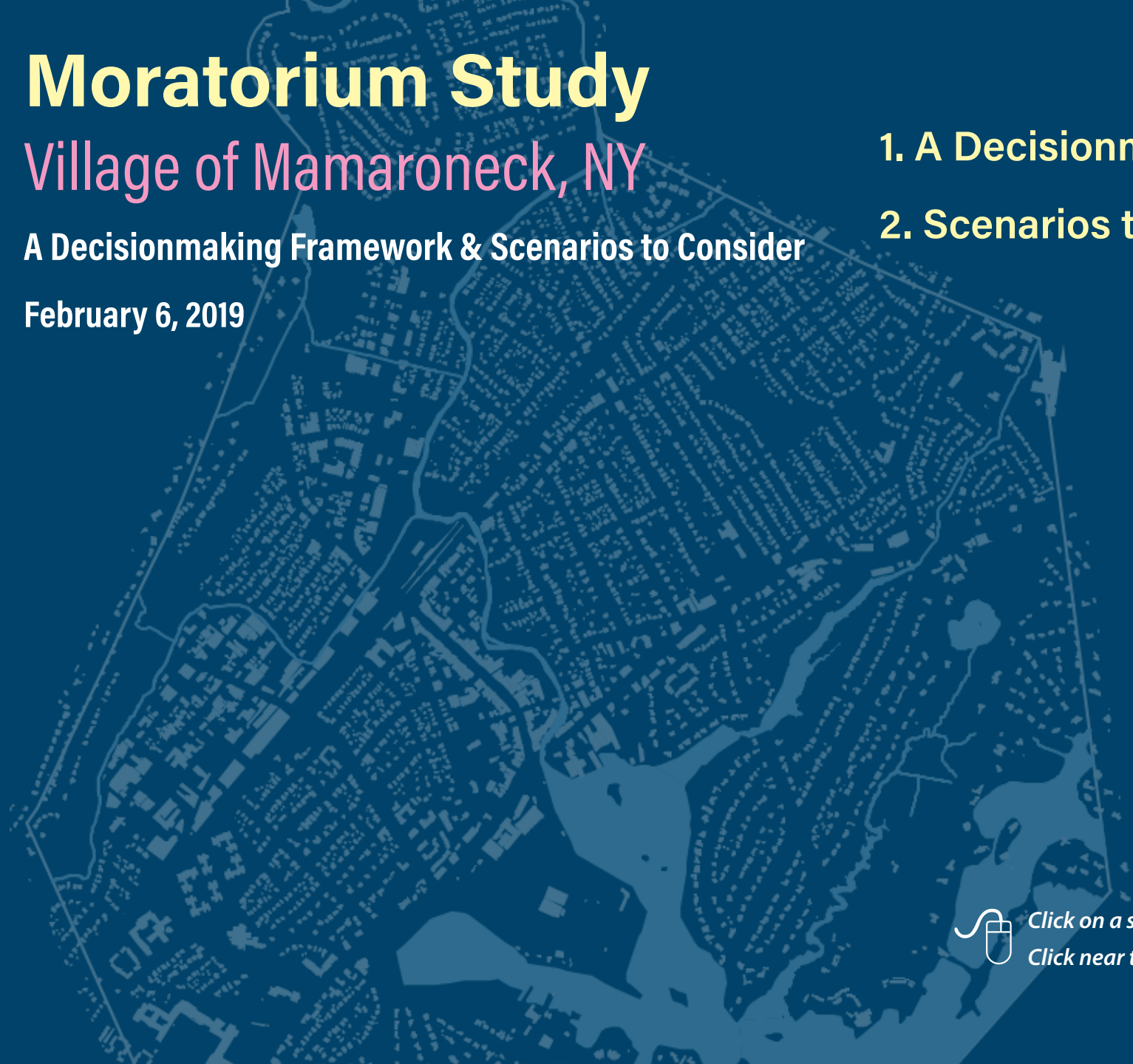
Village of Mamaroneck, NY

A Decisionmaking Framework & Scenarios to Consider

February 6, 2019

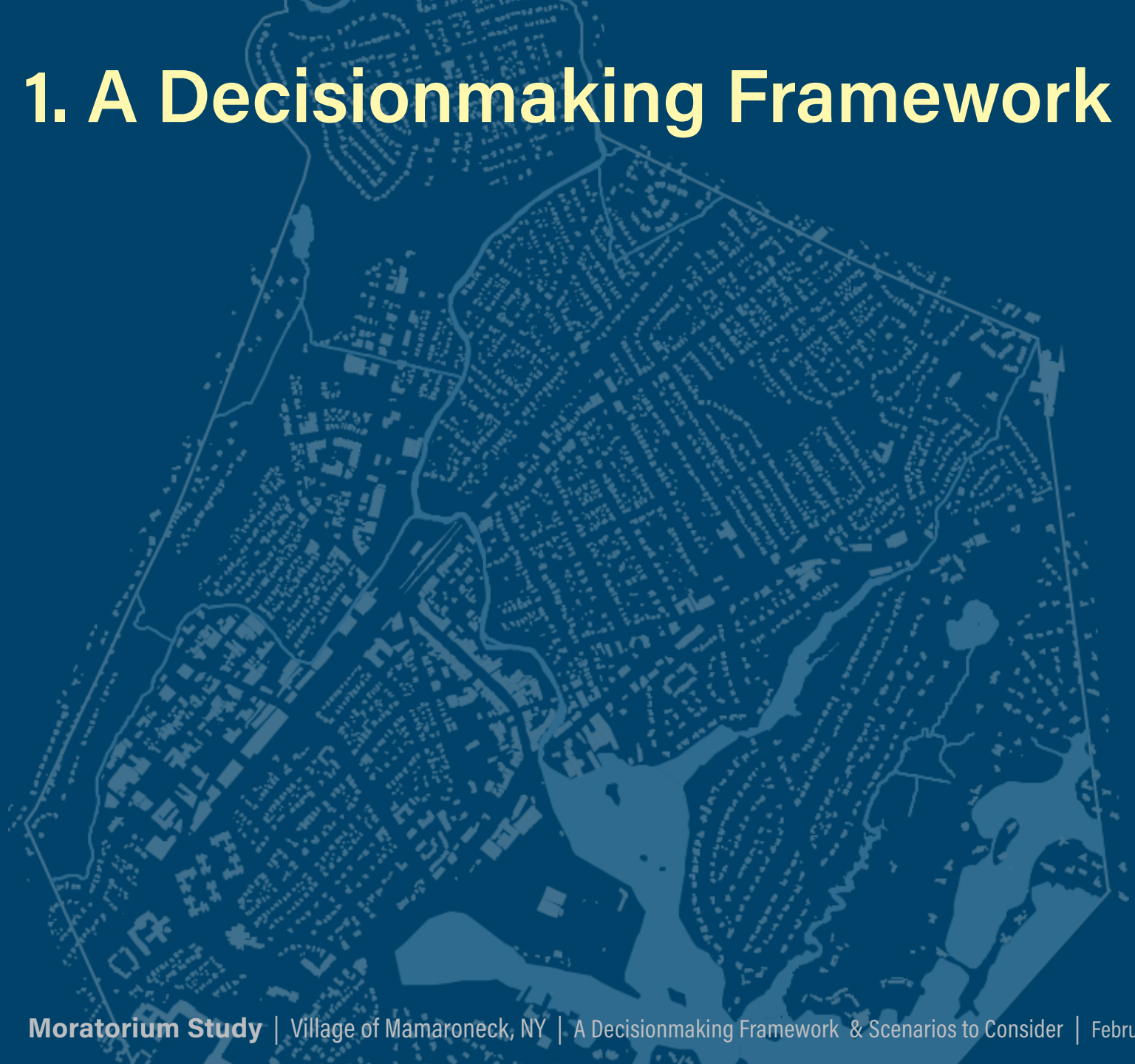
1. A Decisionmaking Framework 2

2. Scenarios to Consider 13



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1. A Decisionmaking Framework



1. A Decisionmaking Framework

Intention of the Infill Housing Provision

- A Consideration: Has the implementation of the Infill Housing Provision achieved its original intentions?

According to the 2012 Comprehensive Plan (p. 119) under 8.2e Infill Housing in the C-1 Zone:

"Residential uses are ... allowed by special permit in the C-1 and C-2 zones, according to the infill housing provision of the Zoning Code. This provision implemented ... a 1985 housing study that sought to promote the creation of new middle-income units in the ... C-1 zone (residential units were ... allowed in the C-2 district at the time of the study). Infill housing was intended to address unmet demand for middle-income housing within the Village. While this [is] an important objective, concern has been raised regarding ... size and setbacks ...."

1. A Decisionmaking Framework

Intention of the Infill Housing Provision

- A Consideration: Has the implementation of the Infill Housing Provision achieved its original intentions?
  - In the past decade, of the 150 new apartment units developed through the Infill Housing Provision, 9 are designated affordable (in terms of the rules regarding income limits).
  - The developers leveraged the incentives provided in the zoning code for providing affordable units.

In the past 10 years, the only affordable units that have been developed through the Infill Housing Provision are in the C-1 zoning district. This amounts to 9 of the 150 units developed in during this time period. These include:

- 5 units at Sheldrake Lofts (negotiated)
- 2 units at 690 Mamaroneck Ave (one 1BR, one 2BR)
- 2 at 422 E Boston Post Rd (one 1BR, one 2BR).

The Village reports long wait lists for these units. A tenant in an affordable unit can stay for 2 years, with a possible two-year renewal.

1. A Decisionmaking Framework

Vision & Values from Comprehensive Plan Update Process

- INVEST IN A PLEASANT QUALITY-OF-LIFE. The Village will have clean, litter-free streets, parks, and waterways; ample recreation opportunities and up-to-date public facilities; accessible open spaces; and streets that are designed to calm traffic and keep people safe.
- PRESERVE VILLAGE & NEIGHBORHOOD CHARACTER. The Village will preserve the overall compact, walkable scale and visual qualities of its streets, blocks, and traditional building fabric. In residential neighborhoods, characteristics of traditional house types and yards will be maintained.

1. A Decisionmaking Framework

Vision & Values from Comprehensive Plan Update Process

- MAINTAIN DIVERSITY & AFFORDABILITY. The Village will maintain its cultural and economic diversity, which is reflected in: the backgrounds of its residents; the offerings of its shops and restaurants; and the variety of home types, sizes, and price points that support residents of a wide range of incomes and stages of life.
- PROTECT & IMPROVE THE ENVIRONMENT. The Village, households, propertyowners, and businesses will do their part to protect and improve local water and air quality and reduce waste. The Village will promote, encourage, and facilitate environmental sustainability and will work with local institutions and neighboring towns to share information and coordinate sustainability programs.

1. A Decisionmaking Framework

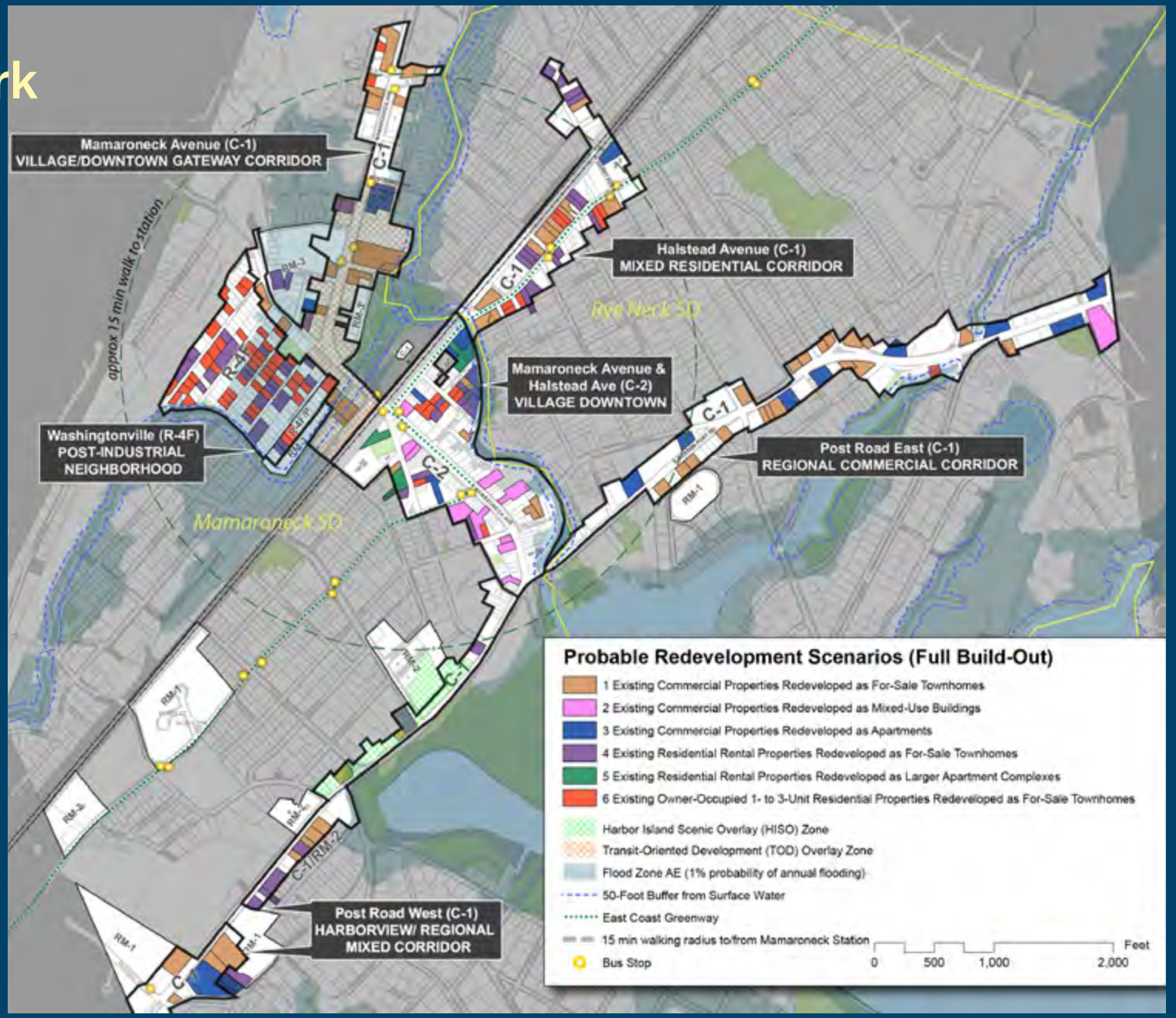
Vision & Values from Comprehensive Plan Update Process

- SUPPORT & ENCOURAGE WALKING AND BICYCLING. The Village will invest in its system of streets, sidewalks, intersections, signals, and signs to support and encourage safe pedestrian and bicycle circulation for people of all ages.
- BE PREPARED FOR STORMS, FLOODS AND RISING SEA LEVELS. The Village will build on its policies and regulations, monitor its natural and built infrastructure, and collaborate with governmental agencies to implement actions that reduce flooding and the risks of floodwaters to the economy, life, and property.

1. A Decisionmaking Framework

Map of Probable Redevelopment Activity By Parcel (Full Build-Out)

- Features Shown on Map
  - Character Districts
  - Redevelopment Scenarios
  - School Districts
  - Flood Zones
  - River Buffers
  - Overlay Zones
  - Walking Radius to Station
  - East Coast Greenway
  - Bus Stops



1. A Decisionmaking Framework

Using Character Districts as A Decisionmaking Framework

- "Character Districts" are based on existing zoning and the prevailing character of the built environment (building types/forms and uses along the street corridors)

Street Corridor & Zoning	Descriptive Name of Character District
WASHINGTONVILLE (R-4F)	"POST-INDUSTRIAL NEIGHBORHOOD"
MAMARONECK AVE (C-1) *includes TOD Overlay Zone*	"VILLAGE/DOWNTOWN GATEWAY CORRIDOR"
MAMARONECK AVE & HALSTEAD AVE (C-2)	"VILLAGE DOWNTOWN"
POST ROAD WEST (C-1)	"HARBORVIEW/REGIONAL MIXED CORRIDOR"
HALSTEAD AVE (C-1)	"MIXED RESIDENTIAL CORRIDOR"
POST ROAD EAST (C-1)	"REGIONAL COMMERCIAL CORRIDOR"

- It is suggested that the Village consider making decisions about the Infill Housing Overlay through the "lens" of the Character Districts.

1. A Decisionmaking Framework

Using Character Districts as a Decisionmaking Framework

- Impacts (positive or negative) of probable redevelopment activities can vary by Character District and should be informed by the emerging Vision & Values.

Topic	Impacts
1. CHARACTER	▪ Impacts on Village character based on probable redevelopment activities and building types introduced. ▪ Appropriateness of building type, form, scale, use with respect to the district and street characteristics. ▪ Impacts of new buildings on neighboring properties (e.g., setbacks/crowdedness, shadows, etc.). ▪ Proximity to parks.
2. ECONOMIC	▪ Impacts on businesses, business activity, and overall vibrancy from additional residents. ▪ Impacts on overall "competitiveness" of the Village as a place to shop, dine, conduct business.
3. ENVIRONMENTAL (Water, Natural Hazards, Infrastructure)	▪ Threat to life and property due to location of floodplains. ▪ Impacts of development in riverine buffers ▪ Infrastructure constraints. ▪ Potential future hazards as a result of projected sea level rise.

1. A Decisionmaking Framework

Using Character Districts as a Decisionmaking Framework

Topic	Impacts
4. ENVIRONMENTAL & TRANSPORTATION (Air Quality, Congestion)	▪ Convenience/safety of bicycling and/or walking versus driving for local trips; distance from train station. ▪ Convenience/safety of access to bus routes.
5.FISCAL	▪ Fiscal impacts to Village and School Districts based on the redevelopment scenarios.
6. SOCIOECONOMIC	▪ Impacts on affordability and diversity.

- Traffic impacts have been evaluated on a region- and area-wide basis and water, sewer, and stormwater impacts have been evaluated based site-specific analysis based on a sample of probable redevelopment sites.

1. A Decisionmaking Framework

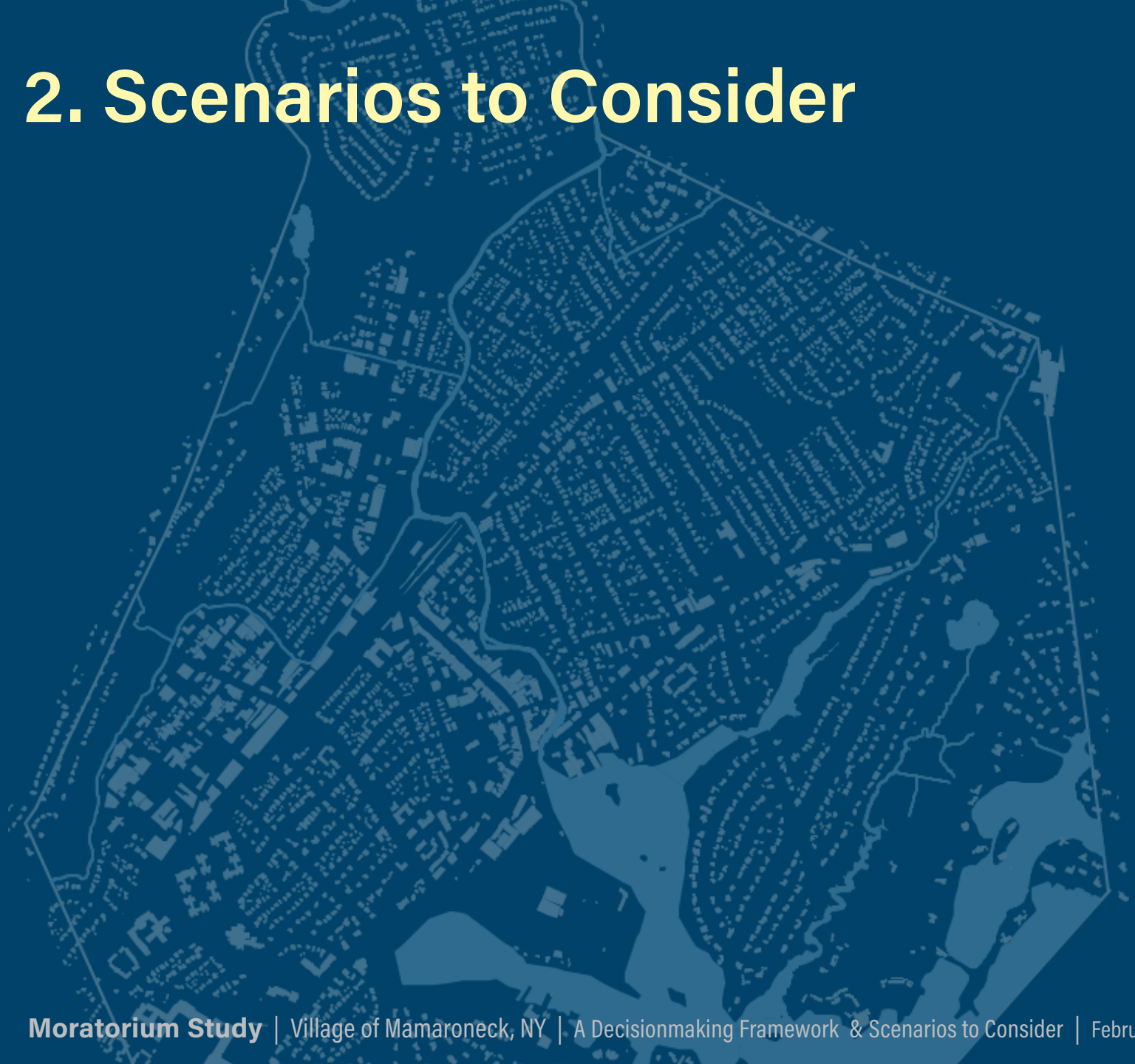
Worksheet

- Assess Potential Positive & Negative Impacts by Character District.
  - The version to the right was filled out by the consultant.

WORKSHEET 1: ASSESS THE POTENTIAL POSITIVE & NEGATIVE IMPACTS OF THE REDEVELOPMENT SCENARIOS BY CHARACTER DISTRICT **Name:** *Neil Desai, NV5 (CONSULTANT)*

Character District	Washingtonville (R- 4F)	Mamaroneck Ave (C- 1)	Mamaroneck Ave & Halstead Ave (C- 2)	Halstead Avenue (C- 1)	Post Road West (C- 1)	Post Road East (C- 1)
Name	POST- INDUSTRIAL NEIGHBORHOOD	VILLAGE/DOWNTOWN GATEWAY CORRIDOR	VILLAGE DOWNTOWN	MIXED RESIDENTIAL CORRIDOR	HARBORVIEW/REGIONAL MIXED CORRIDOR	REGIONAL COMMERCIAL CORRIDOR
1. CHARACTER	- The newer development generally fits the character, but subdivisions result in larger volume structures.	+ New residential uses could complement the existing character of the area. + Residential uses are appropriate to locate near Columbus Park.	+ Mixed use building types (w/ground floor commerce and apartments above) along the Avenue are appropriate for this downtown setting.	+ New residential uses would complement the existing character of the area and street type.	- Redevelopment scenarios indicate strong potential for townhomes, which might not complement the existing character of the area and street type.	- Residential uses are not consistent with the prevailing character and activity of the area.
2. ECONOMIC	-Potential economic consequences of frequent flooding causing property damage.	+ Redevelopment scenarios could add more people with convenient access to downtown via walking or bicycling and support business activity.	+ Redevelopment scenarios would add more people and activity to downtown, supporting business activity.	+ Redevelopment scenarios would add more people with convenient access to downtown via walking or bicycling and support business activity.	-Rather than permit redevelopment of commercial into residential, should consider retaining and or promoting more commercial uses to serve Mamaroneck High School.	- Redevelopment from commercial to residential could reduce the overall vitality of this section as a commercial corridor.
3. ENVIRONMENTAL (Water, Natural Hazards, Infrastructure)	- Much of the area is in a flood zone +/- New residential structures would be designed to handle floods (still presents risks to life and property).	- Half of this area is located in a flood zone. +/- New residential structures would be designed to handle floods (still presents risks to life and property).	+ Most of the properties in this area are not located in a flood zone. (Note: Several properties along the river are partially in a flood zone.)	+ Not located in a flood zone.	+ Not located in a flood zone	+ Not located in a flood zone.
4. ENVIRONMENTAL & TRANSPORTATION (Air Quality, Congestion)	+ Within 5- to 15-minute walking distance to train station and downtown core.	+ Within 5- to 10-minute walking distance to train station and 5- to-15 minute walking distance to downtown core. + New food market to be located in this area. + Located along bus routes.	+ Within 3- to 10-minute walking distance to train station. + Located in downtown; easy access on foot or bicycle. - Would add additional cars in downtown, which could aggravate existing localized congestion.	+ Within a 3- to 10- minute walking distance to train station + Located along bus routes and East Coast Greenway	- Parts of this area are the farthest distance from downtown and the train station of any location in the Village, so higher likelihood of driving for local trips.	- Parts of this area are the farthest distance from downtown and the train station of any location in the Village, so higher likelihood of driving for local trips.
5. FISCAL	+ Overall, the potential redevelopment activity in this area will mostly likely yield a net fiscal positive for both the Village and School District.	+ Redevelopment of commercial properties into apts might have negative fiscal impacts to Village and S.D, but, overall, redevelopment activity in this area will likely yield a net fiscal positive for both.	+/- Redevelopment into for-sale townhomes will have strong positive fiscal impacts on both the Village and S.D., but would be reduced by the likely negative fiscal impacts of the redevelopment of commercial properties into mixed-use and apts.	+ Redevelopment of commercial properties into apts will likely have some negative fiscal impacts on the School Dist., but, overall, redevelopment activity will likely yield a net fiscal positive for Village and S.D.	+ Redevelopment of commercial properties into apartments will have negative fiscal impacts to the S.D., overall, redevelopment will likely yield a net positive fiscal impact for both.	+ Redevelopment of commercial properties into apartments could have some negative fiscal impacts, but, overall, redevelopment will likely yield a net positive fiscal impact for both Village and S.D..
6. SOCIOECONOMIC	- Redevelopment scenarios indicate potential for for-sale townhouses replacing rental properties, which would reduce the supply of a lower cost housing type	- Redevelopment scenarios indicate potential for for-sale townhouses to replace rental properties, which would reduce the supply of a lower cost housing type.	- Redevelopment scenarios indicate some potential for existing residential apartments being replaced by newer apartments, which would reduce the supply of lower cost units. + New apts as part of mixed-use would add flexible and comparatively more affordable living options in downtown and provide for a lifestyle attractive to young prof. and "empty-nesters."	- Redevelopment scenarios indicate strong potential for for-sale townhouses, many of which would replace rental properties, thus reducing the supply of a lower cost housing type.	- Redevelopment scenarios indicate strong potential for conversion of existing residential rental properties into for-sale townhouses, which would reduce the supply of a lower cost housing type.	+ The redevelopment scenarios indicate no existing rental apartments that could be converted into for-sale townhomes. - The sale prices of new townhomes, which would likely exceed $1 million, would be beyond the means of people of many income brackets.
Evaluation "Score" (min/max = -6/+6)	**-2**	**+2**	**+3**	**+4**	**-2**	**-2**
Infill Housing Provision	**Does not apply to R- 4F (refer to *Comprehensive Plan Update* recommendations)**	**Consider Retaining + Modifications**	**Consider Retaining + Modifications**	**Consider Retaining + Modifications**	**Consider Removing or Reducing Redevelopment Potential**	**Consider Removing or Reducing Redevelopment Potential**

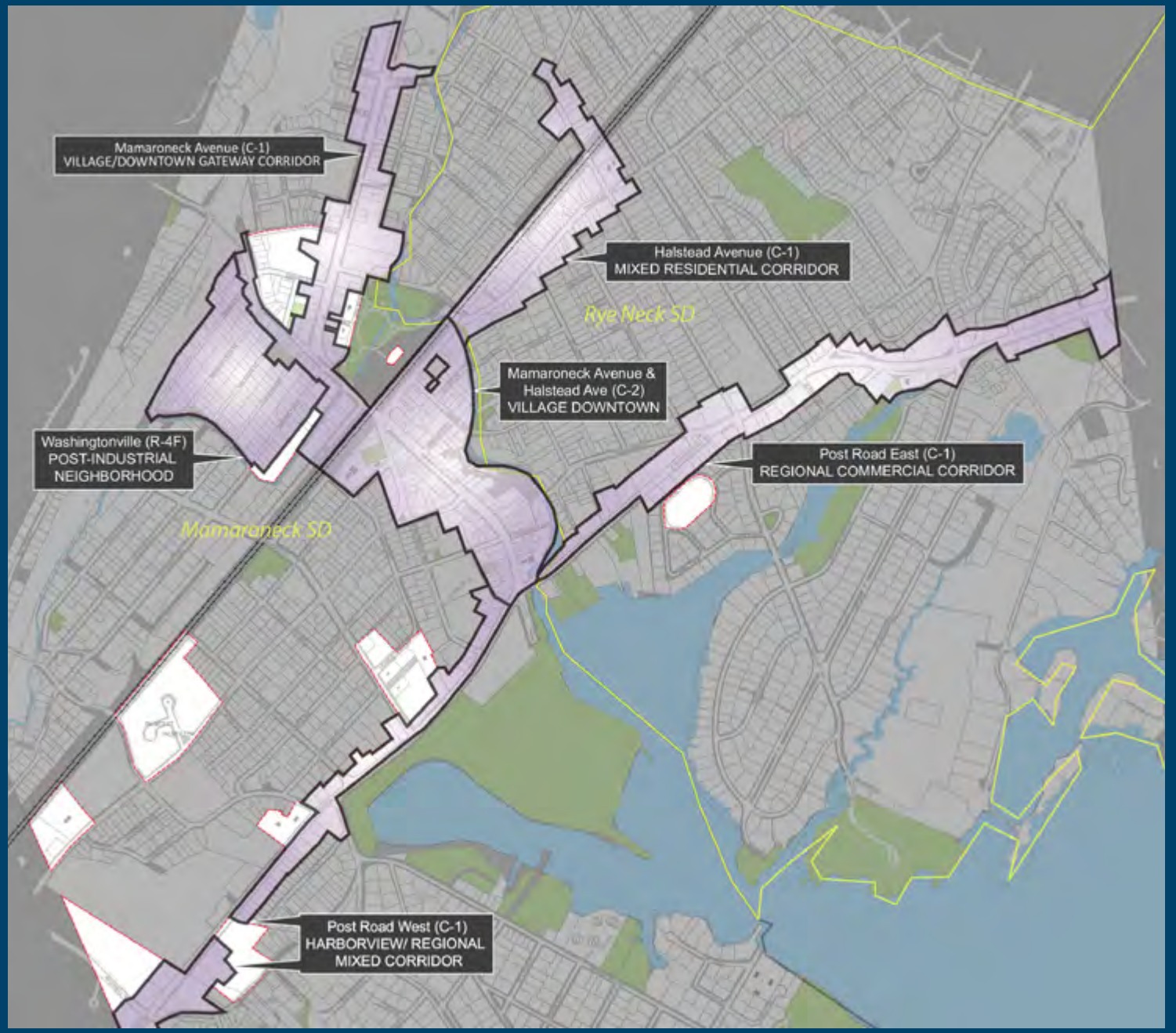
2. Scenarios to Consider



2. Scenarios to Consider

Scenarios Defined

- A scenario represents a path forward consisting of a series of decisions about residential infill development in the moratorium area based on certain objectives.



2. Scenarios

Proposed Scenarios

- During a January 8, 2019 Work Session, the Mayor and the Board of Trustees (BOT) were presented with preliminary versions of three scenarios:
  - FULL BUILD-OUT: "NO CHANGE"
  - SCENARIO #1: "CONTEXT-SENSITIVE DEVELOPMENT"
  - SCENARIO #2: "AREA-WIDE DENSITY REDUCTION"
- The Planning Department was asked to further refine Scenario #1 and Scenario #2, which includes providing alternatives for each and including more data to quantify each scenario in terms of the potential number of housing units that could be developed in the future.

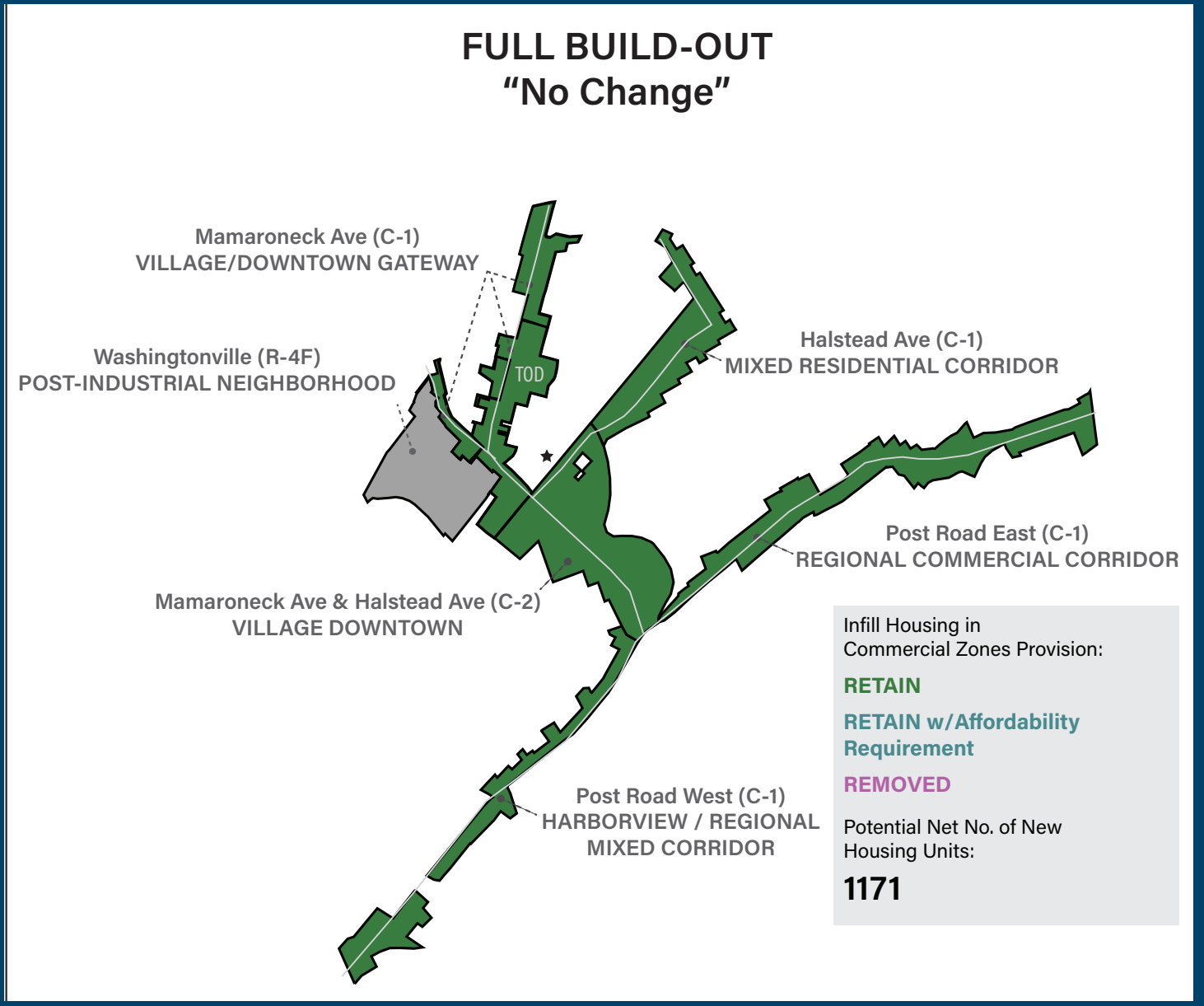
2. Scenarios to Consider

Scenario Summaries

- FULL BUILD-OUT: "NO CHANGE"
  - » Infill Housing in Commercial Zones provision: retain in all areas.

* The Infill Housing in Commercial Zones Provision does not apply to the Washingtonville (R-4F) area. However, this area is included in all of the scenario summary maps because it was part of the build-out analysis.

** The moratorium on residential subdivisions into to two or more lots applies to Washingtonville (R-4F) and all other residential districts in the Village.



2. Scenarios to Consider

Scenario Summaries

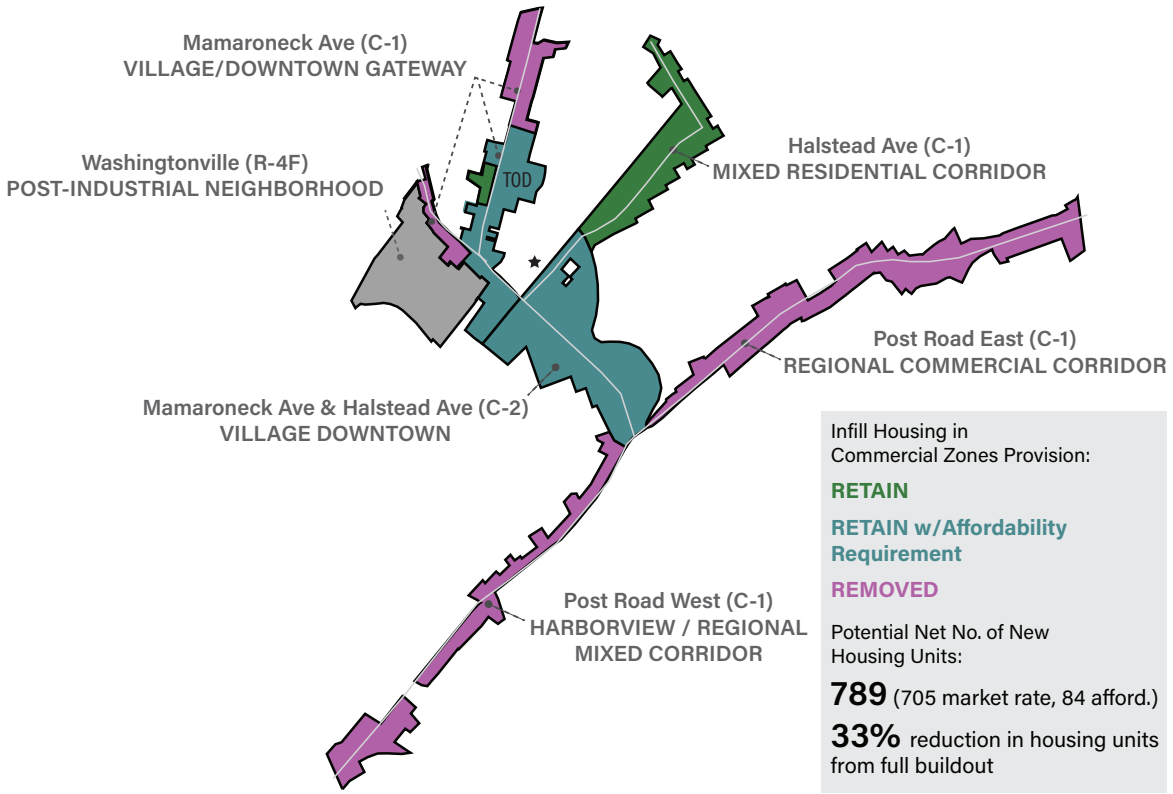
- SCENARIO #1: "CONTEXT-SENSITIVE DEVELOPMENT"
  - Infill Housing in Commercial Zones provision: remove in certain areas and retain in other areas.
  - Institute affordable housing requirements in certain areas, if possible (i.e., a certain percent of new residential units must be affordable at certain income levels):
    - Scenario #1a: Institute affordable housing requirements in the C-2 and TOD zones.
    - Scenario #1b: 10% FAR Reduction in the C-1, C-2, and TOD zones.*

* Affordable housing requirements would not be feasible in this scenario given the reduction in FAR, according to Planning Department *pro forma* models.

2. Scenarios to Consider

Scenario Summary Maps

SCENARIO #1A
"Context-Sensitive Development w/Affordability Requirement"



Infill Housing in Commercial Zones Provision:

RETAIN

RETAIN w/Affordability Requirement

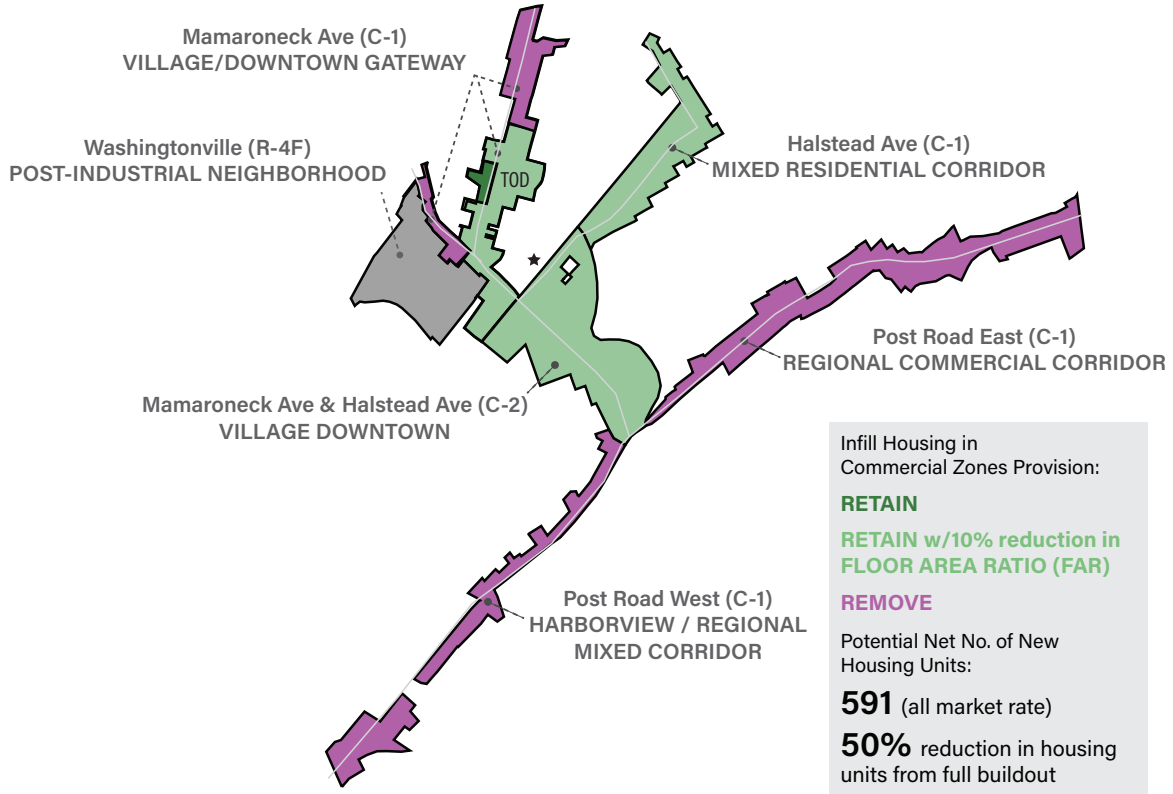
REMOVED

Potential Net No. of New Housing Units:

789 (705 market rate, 84 afford.)

33% reduction in housing units from full buildout

SCENARIO #1B
"Context-Sensitive Development" w/Density Reduction" (10%)



Infill Housing in Commercial Zones Provision:

RETAIN

RETAIN w/10% reduction in FLOOR AREA RATIO (FAR)

REMOVE

Potential Net No. of New Housing Units:

591 (all market rate)

50% reduction in housing units from full buildout

2. Scenarios to Consider

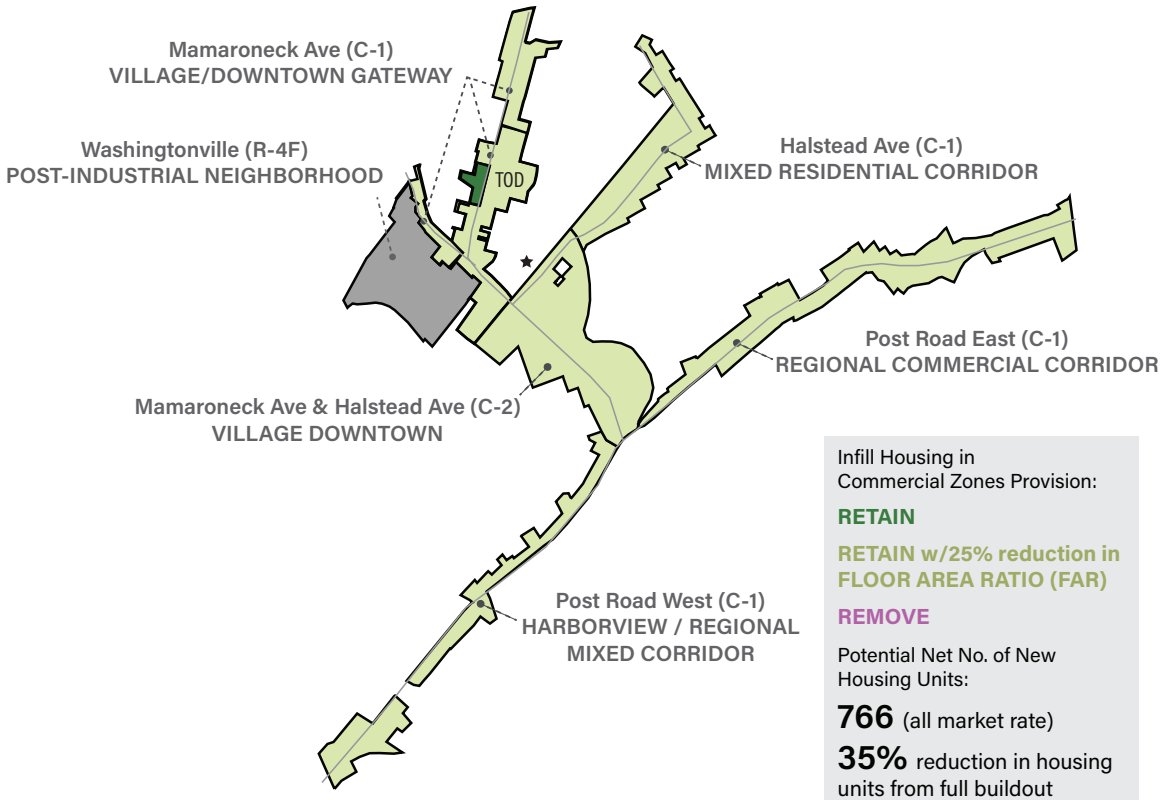
Scenario Summaries

- SCENARIO #2: "AREA-WIDE DENSITY REDUCTION"
  - Infill Housing in Commercial Zones provision: retain in all areas.
  - Reduce FAR across the board:
    - Scenario #2a: 25% FAR Reduction in the C-1, C-2, and TOD zones.
    - Scenario #2b: 10% FAR Reduction in the C-1, C-2, and TOD zones.

2. Scenarios to Consider

Scenario Summary Maps

SCENARIO #2A
"Area-Wide Density Reduction" (25%)



Infill Housing in Commercial Zones Provision:

RETAIN

RETAIN w/25% reduction in FLOOR AREA RATIO (FAR)

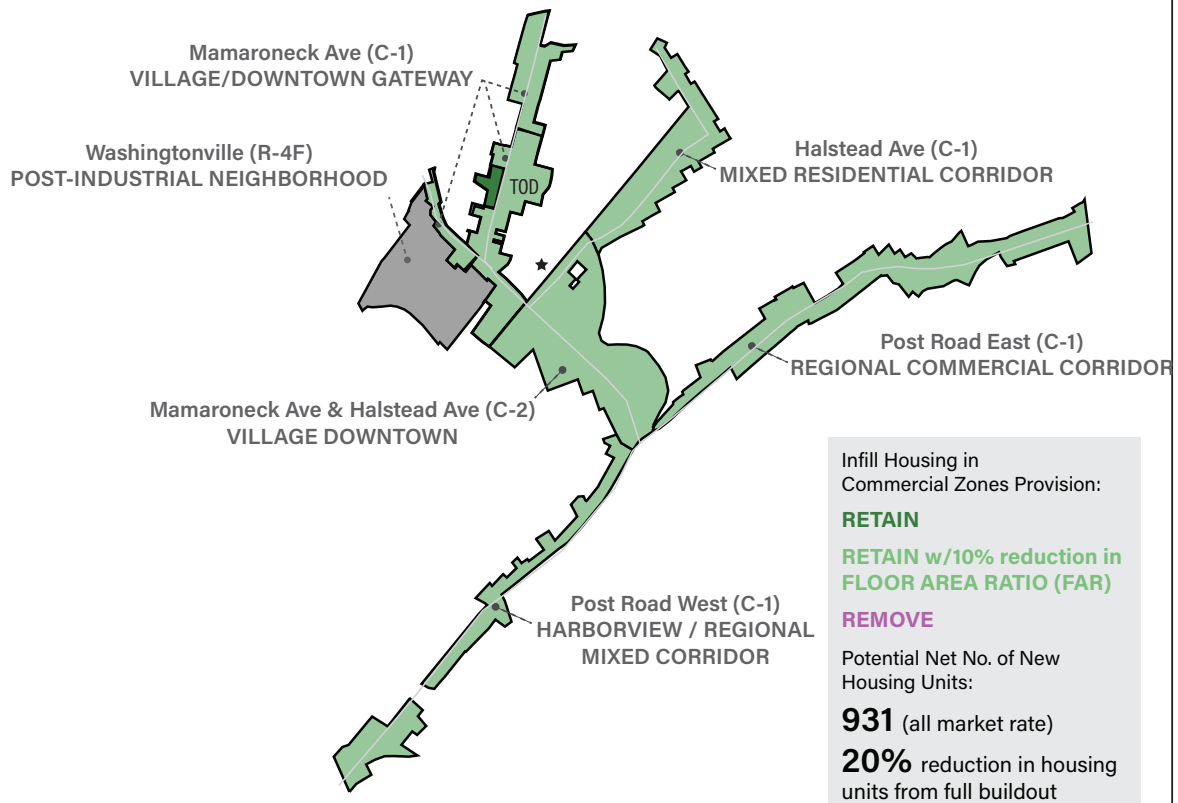
REMOVE

Potential Net No. of New Housing Units:

766 (all market rate)

35% reduction in housing units from full buildout

SCENARIO #2B
"Area-Wide Density Reduction" (10%)



Infill Housing in Commercial Zones Provision:

RETAIN

RETAIN w/10% reduction in FLOOR AREA RATIO (FAR)

REMOVE

Potential Net No. of New Housing Units:

931 (all market rate)

20% reduction in housing units from full buildout

2. Scenarios to Consider

Scenario Summary Tables

SCENARIO #1a: "CONTEXT-SENSITIVE DEVELOPMENT w/Affordability Requirement"

Objectives

- ➔ Permit infill development in areas where it will complement the physical sense of a compact, walkable Village. Scale back development in areas where it will not.
- ➔ Permit infill development that will complement or enhance the existing built environment and activity types within its Character District.
- ➔ Provide affordable housing options at various income levels in appropriate locations where FARs will allow for a sufficient level of development to make it feasible.

CHARACTER DISTRICT	SUBDISTRICTS	INFILL HOUSING PROVISION	ASSOCIATED ZONING STRATEGIES	NET NEW HOUSING UNITS POTENTIAL	POTENTIAL REDUCTION IN COMMERCIAL SPACE
Washingtonville (R- 4F) **POST- INDUSTRIAL NEIGHBORHOOD**	N/A	N/A	No changes.	+42 units	-1,040 sf
Mamaroneck Ave (C- 1) **VILLAGE/DOWNTOWN GATEWAY CORRIDOR**	**Mamaroneck Ave (C-1)** *Section A: Properties* ***NOT*** *in the Transit-Oriented Development Overlay Zone*	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
	Mamaroneck Ave (C-1) *Section B: Transit-Oriented Development Overlay Zone and RM-3*	**RETAIN**	• **AFFORDABILITY**: Retain max FAR as 1.2; require affordable units for developments with at least 5 units. 10% of units must be accessible to 80% Area Median Income (AMI) or lower. Developments with fewer than 5 units have a maximum FAR of 1.0. • **REDUCE PARKING REQUIREMENT**: To 0.75 space per dwelling unit plus 0.25 space per bedroom in excess of one. This will help enable with affordable units to be more feasible in terms of space and costs/revenue. • TOD incentives stay in place (i.e., payment into neighborhood stabilization fund, provision of green infrastructure and/or green building elements, and provision of ground floor retail that activates pedestrian activity).	+109 units	-68,600 sf
Mamaroneck Ave & Halstead Ave (C- 2) **VILLAGE DOWNTOWN**	N/A	**RETAIN**	• **AFFORDABILITY**: Retain max FAR as 2.0; require affordable units for developments with at least 5 units. 10% of units must be accessible to 80% of AMI or lower. Maintain 0.5 FAR bonus for development with 100% of units that are accessible to 80% of AMI or lower. Developments with fewer than 5 units have a maximum FAR of 1.8. • **REDUCE PARKING REQUIREMENT**: To 0.75 per unit plus 0.25 per bedroom in excess of one. This will enable buildings with affordable units to be feasible in terms of space and cost/revenue.	+569 units	-104,380 sf
Halstead Avenue (C- 1) **MIXED RESIDENTIAL CORRIDOR**	N/A	**RETAIN**	No changes.	+69 units	-52,978 sf
Post Road West (C- 1) **HARBORVIEW/REGIONAL MIXED CORRIDOR**	N/A	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
Post Road East (C- 1) **REGIONAL COMMERCIAL CORRIDOR**	N/A	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
			TOTALS	**+789 units**	**-227,000 sf**

2. Scenarios to Consider

Scenario Summary Tables

SCENARIO #1b: "CONTEXT-SENSITIVE DEVELOPMENT with 10% Reduction in FAR"

Objectives

- ➔ Permit infill development in areas where it will complement the physical sense of a compact, walkable Village. Scale back development in areas where it will not.
- ➔ Permit infill development that will complement or enhance the existing built environment and activity types within its Character District.
- ➔ Where infill development is permitted, scale back the intensity of development slightly to manage development impacts.

CHARACTER DISTRICT	SUBDISTRICTS	INFILL HOUSING PROVISION	ASSOCIATED ZONING STRATEGIES	NET NEW HOUSING UNITS POTENTIAL	POTENTIAL REDUCTION IN COMMERCIAL SPACE
Washingtonville (R- 4F) **POST- INDUSTRIAL NEIGHBORHOOD**	N/A	N/A	No changes.	+42 units	-1,040 sf
Mamaroneck Ave (C- 1) **VILLAGE/DOWNTOWN GATEWAY CORRIDOR**	**Mamaroneck Ave (C-1)** *Section A: Properties **NOT** in the Transit-Oriented Development Overlay Zone*	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
	Mamaroneck Ave (C-1) *Section B: Transit-Oriented Development Overlay Zone and RM-3*	**RETAIN**	• Reduce FAR by ~10%, from 1.2 to 1.1. • Bonuses are scaled down appropriately.	+98 units	-68,600 sf
Mamaroneck Ave & Halstead Ave (C- 2) **VILLAGE DOWNTOWN**	N/A	**RETAIN**	• Reduce FAR by ~10%, from 2.0 to 1.8.	+393 units	-94,626 sf
Halstead Avenue (C- 1) **MIXED RESIDENTIAL CORRIDOR**	N/A	**RETAIN**	No changes.	+58 units	-52,978 sf
Post Road West (C- 1) **HARBORVIEW/REGIONAL MIXED CORRIDOR**	N/A	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
Post Road East (C- 1) **REGIONAL COMMERCIAL CORRIDOR**	N/A	**REMOVE**	• With the removal of the infill housing provision, only commercial development will be permitted (pursuant to C-1 regulations).	0	0
			TOTALS	**+591 units**	**-217,250 sf**

2. Scenarios to Consider

Scenario Summary Tables

SCENARIO #2A: "AREA-WIDE DENSITY REDUCTION" w/25% Reduction in FAR"

Objectives

➔ Retain the infill housing provision, but reduce the intensity and scale of infill housing development throughout the entire Moratorium Area.

CHARACTER DISTRICT	SUBDISTRICTS	INFILL HOUSING PROVISION	ASSOCIATED ZONING STRATEGIES	NET NEW HOUSING UNITS POTENTIAL	POTENTIAL REDUCTION IN COMMERCIAL SPACE
Washingtonville (R- 4F) POST- INDUSTRIAL NEIGHBORHOOD	N/A	N/A	No changes.	+42 units	-42,980 sf
Mamaroneck Ave (C- 1) VILLAGE/DOWNTOWN GATEWAY CORRIDOR	**Mamaroneck Ave (C-1)** *Section A: Properties **NOT** in the Transit-Oriented Development Overlay Zone*	**RETAIN**	• Reduce FAR by ~25%, from 0.6 to 0.45.	+28 units	-43,500 sf
	Mamaroneck Ave (C-1) *Section B: Transit-Oriented Development Overlay Zone and RM-3*	**RETAIN**	• Reduce FAR by 25%, from 1.2 to .9. • Bonuses are scaled down appropriately.	+109 units	-68,600 sf
Mamaroneck Ave & Halstead Ave (C- 2) VILLAGE DOWNTOWN	N/A	**RETAIN**	• Reduce FAR by 25%, from 2.0 to 1.5.	+338 units	-85,760 sf
Halstead Avenue (C- 1) MIXED RESIDENTIAL CORRIDOR	N/A	**RETAIN**	• Reduce FAR by 25%, from 0.6 to 0.45.	+36 units	-42,980 sf
Post Road West (C- 1) HARBORVIEW/REGIONAL MIXED CORRIDOR	N/A	**RETAIN**	• Reduce FAR by 25%, from 0.6 to 0.45.	+85 units	-71,070 sf
Post Road East (C- 1) REGIONAL COMMERCIAL CORRIDOR	N/A	**RETAIN**	• Reduce FAR by 25%, from 0.6 to 0.45.	+156 units	-121,940 sf
			TOTALS	**+766 units**	**-433,884 sf**

2. Scenarios to Consider

Scenario Summary Tables

SCENARIO #2B: "AREA-WIDE DENSITY REDUCTION" w/10% Reduction in FAR"

Objectives

➔ Retain the infill housing provision, but reduce the intensity and scale of infill housing development throughout the entire Moratorium Area.

CHARACTER DISTRICT	SUBDISTRICTS	INFILL HOUSING PROVISION	ASSOCIATED ZONING STRATEGIES	NET NEW HOUSING UNITS POTENTIAL	POTENTIAL REDUCTION IN COMMERCIAL SPACE
Washingtonville (R- 4F) POST- INDUSTRIAL NEIGHBORHOOD	N/A	N/A	No changes.	+42 units	-1,040 sf
Mamaroneck Ave (C- 1) VILLAGE/DOWNTOWN GATEWAY CORRIDOR	**Mamaroneck Ave (C-1)** *Section A: Properties **NOT** in the Transit-Oriented Development Overlay Zone*	**RETAIN**	• Reduce FAR by ~10%, from 0.6 to 0.55.	+36 units	-43,500 sf
	Mamaroneck Ave (C-1) *Section B: Transit-Oriented Development Overlay Zone and RM-3*	**RETAIN**	• Reduce FAR by ~10%, from 1.2 to 1.1. • Bonuses are scaled down appropriately.	+98 units	-68,600 sf
Mamaroneck Ave & Halstead Ave (C- 2) VILLAGE DOWNTOWN	N/A	**RETAIN**	• Reduce FAR by ~10%, from 2.0 to 1.8.	+393 units	-94,630 sf
Halstead Avenue (C- 1) MIXED RESIDENTIAL CORRIDOR	N/A	**RETAIN**	• Reduce FAR by ~10%, from 0.6 to 0.55.	+58 units	-52,980 sf
Post Road West (C- 1) HARBORVIEW/REGIONAL MIXED CORRIDOR	N/A	**RETAIN**	• Reduce FAR by ~10%, from 0.6 to 0.55.	+111 units	-74,000 sf
Post Road East (C- 1) REGIONAL COMMERCIAL CORRIDOR	N/A	**RETAIN**	• Reduce FAR by ~10%, from 0.6 to 0.55.	+193 units	-128,620 sf
			TOTALS	**+931 units**	**-463,360 sf**

2. Scenarios to Consider

Discussion of Potential Advantages & Disadvantages of Each Scenario

- Village Character
- Walkability & Access to Transit
- Traffic
- Affordable Housing
- Water, Sewer, Stormwater, River Buffers, Flood Zones

2. Scenarios to Consider

Discussion of Potential Advantages & Disadvantages of Each Scenario

Topic	Impacts
1. CHARACTER	▪ Impacts on Village character based on probable redevelopment activities and building types introduced. ▪ Appropriateness of building type, form, scale, use with respect to the district and street characteristics. ▪ Impacts of new buildings on neighboring properties (e.g., setbacks/crowdedness, shadows, etc.). ▪ Proximity to parks.
2. ECONOMIC	▪ Impacts on businesses, business activity, and overall vibrancy from additional residents. ▪ Impacts on overall "competitiveness" of the Village as a place to shop, dine, conduct business.
3. ENVIRONMENTAL (Water, Natural Hazards, Infrastructure)	▪ Threat to life and property due to location of floodplains. ▪ Impacts of development in riverine buffers ▪ Infrastructure constraints. ▪ Potential future hazards as a result of projected sea level rise.
4. ENVIRONMENTAL & TRANSPORTATION (Air Quality, Congestion)	▪ Convenience/safety of bicycling and/or walking versus driving for local trips; distance from train station. ▪ Convenience/safety of access to bus routes.
5.FISCAL	▪ Fiscal impacts to Village and School Districts based on the redevelopment scenarios.
6. SOCIOECONOMIC	▪ Impacts on affordability and diversity.

2. Scenarios to Consider

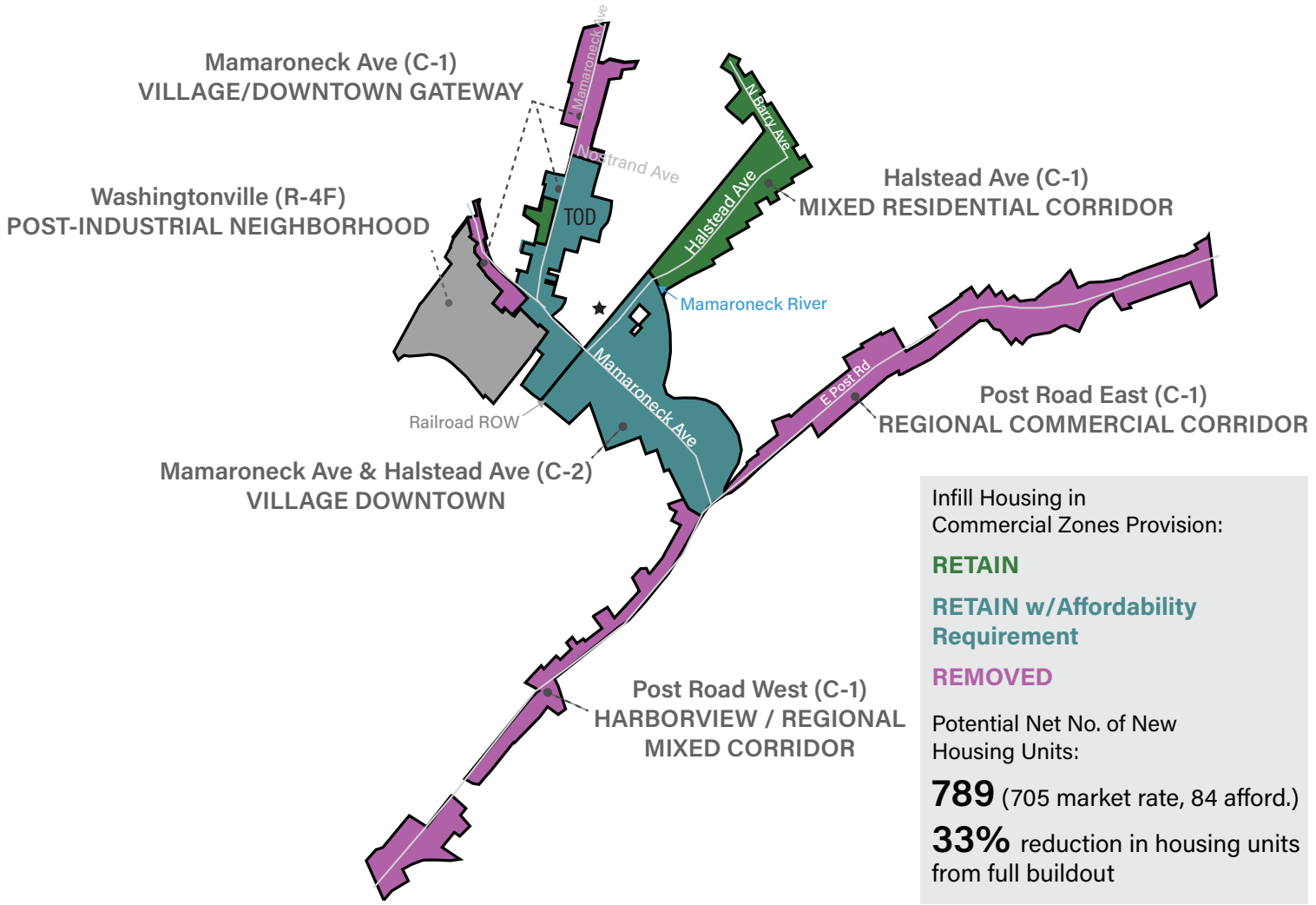
Selected Scenarios

- At a Work Session on January 30, the Mayor and BOT requested the Planning Department to further examine Scenario #1A and Scenario #1B.

2. Scenarios to Consider

Scenario #1A

SCENARIO #1A
"Context-Sensitive Development w/Affordability Requirement"



Infill Housing in Commercial Zones Provision:

RETAIN

RETAIN w/Affordability Requirement

REMOVED

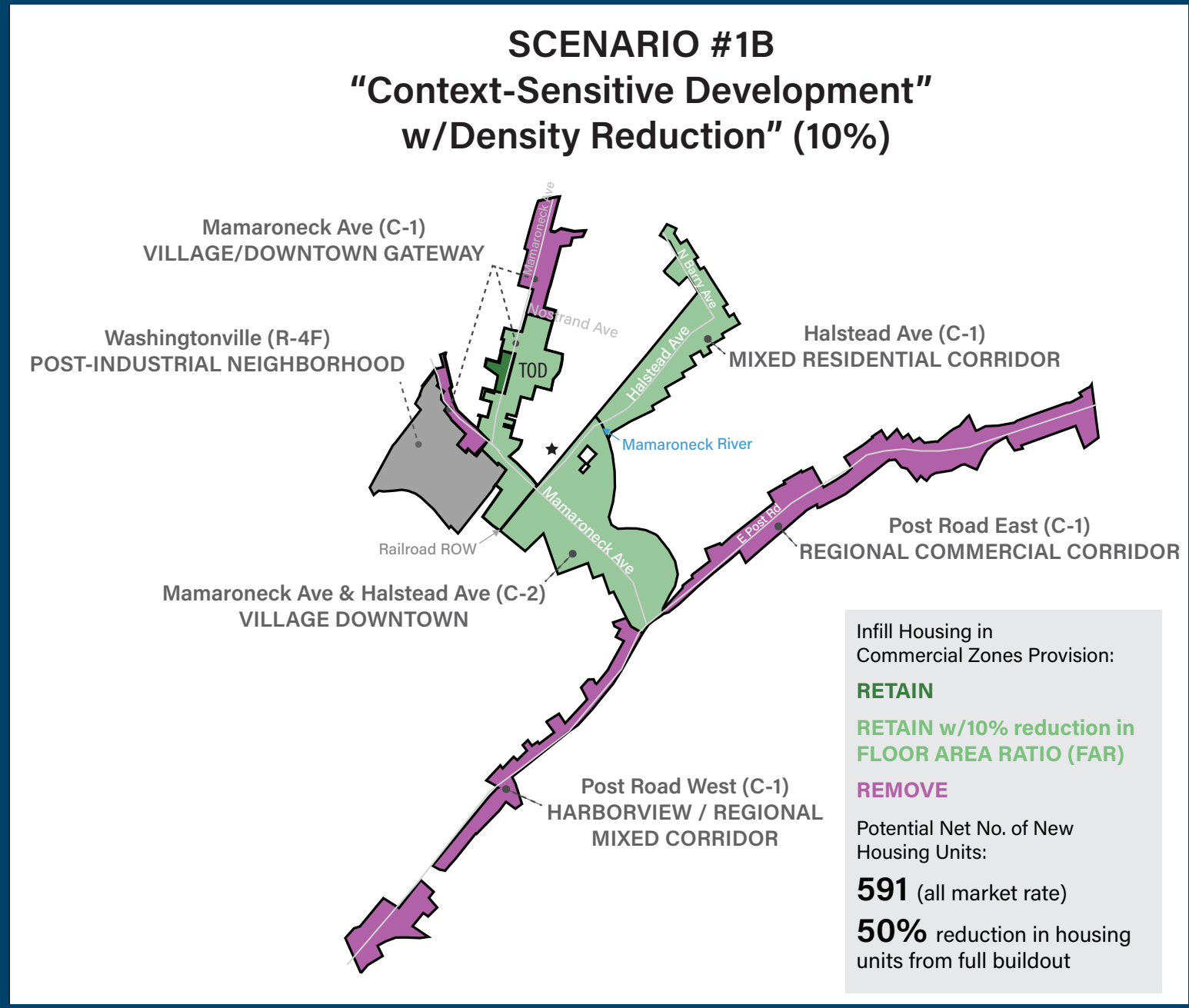
Potential Net No. of New Housing Units:

789 (705 market rate, 84 afford.)

33% reduction in housing units from full buildout

2. Scenarios to Consider

Scenario #1B



2. Scenarios to Consider

References

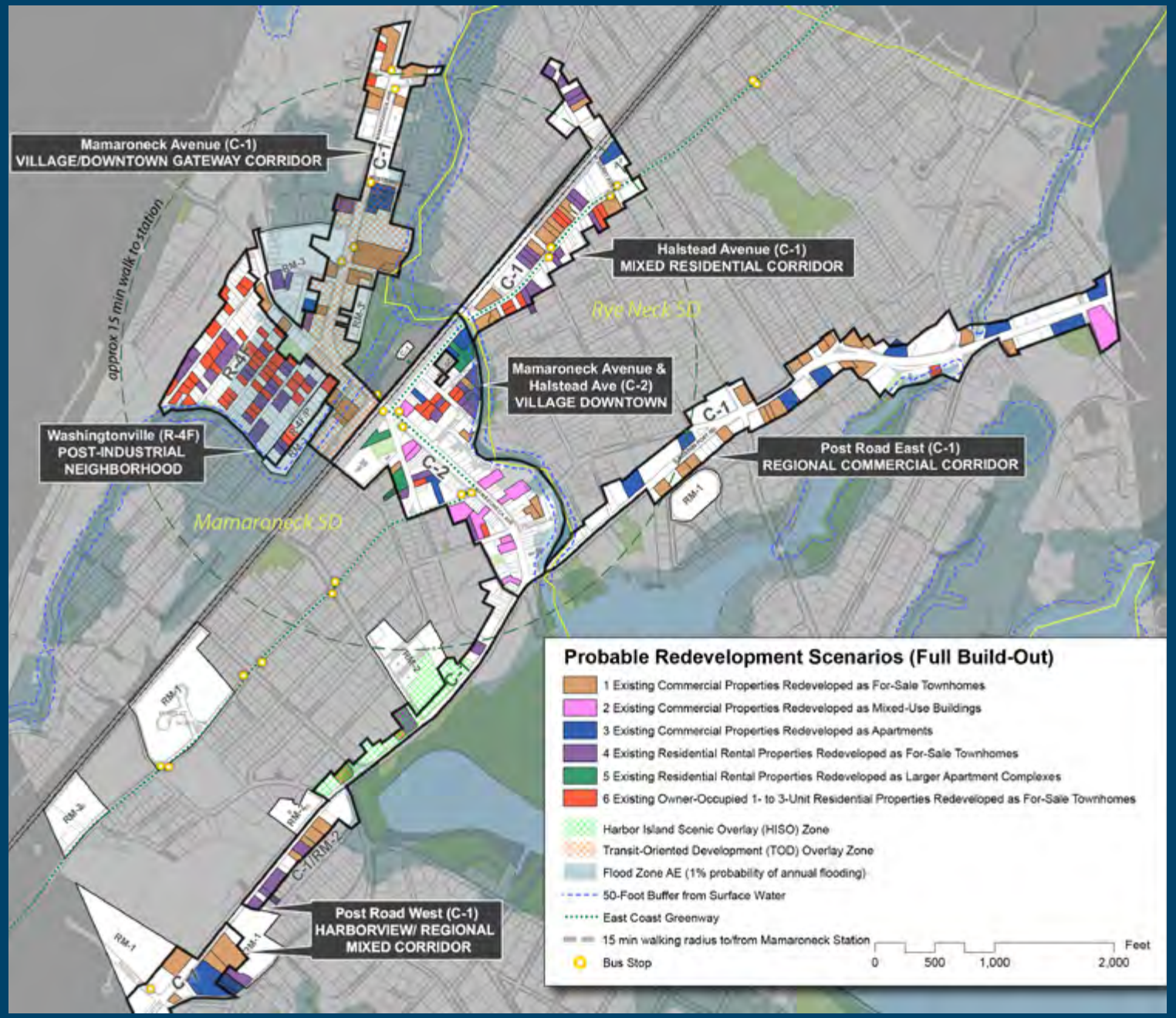
- Table of Zoning Districts
  - » Dimensional Standards
  - » Parking Requirements

		Under § 342-50 Residence Uses in Commercial Districts						
Districts ->		**C-1**	**C-1m**	**C-1b**	**C-1v**	**C-1o**	**C-2**	**TOD Overlay**
Frontage ->			Mamaroneck Ave	Boston Post Road	Van Rast Pl	Old White Plains Rd		
Max Lot Area	sf	40,000	40,000	40,000	40,000	40,000	n/a	n/a
FAR		0.6	0.6	0.6	0.6	0.6	2.0	0.6
FAR max w/bonus		0.8	0.8	0.8	0.8	0.8	2.5	1.5
Min Lot Width	f	50	50	50	50	50	n/a	50
Min Lot Depth	f	100	100	100	100	100	n/a	100
Min Lot Area	sf	5,000	5,000	5,000	5,000	5,000	n/a	5,000
Min Lot Area (per du)		n/a	n/a	n/a	n/a	n/a	n/a	n/a
Max Stories		3.0	4.0	4.0	4.0	4.0	4.0	3.0 or 4.0
Max Stories on Wide Streets		n/a	n/a	n/a	n/a	n/a	n/a	n/a
Max Height	f	40	50	45	40	50	45	40 or 50
Max Height w/bonus		n/a	n/a	n/a	n/a	n/a	60	n/a
Max Coverage	%	30	35	35	30	35	n/a	50
Max Coverage w/bonus	%	35	n/a	n/a	35	35	n/a	n/a
Min Front Yard	f	20	20	20	20	20	0	5
Min Lesser Side	f	10	10	10	10	10	0	20
Min Two Sides Combined	f	20	20	20	20	20	0	8
Min Rear Yard	f	25	25	25	25	25	10	25
Min Pkg & Dwy Setback	f	5	5	5	5	5	n/a	5
Usable Open Space Req (per u	sf	300	200	300	300	200	n/a	150
Min Pkg Req (per unit + br)		1+.5	1+.5	1+.5	1+.5	1+.5	1+.5	1+.25

2. Scenarios to Consider

References

- Map of Probable Redevelopment
  - » Character Districts
  - » Probable Redev. Scenarios
  - » School Districts
  - » Flood Zones
  - » River Buffers
  - » Overlay Zones
  - » Walking Radius to Station
  - » East Coast Greenway
  - » Bus Stops



1. Identifying the Parcels to Analyze for Future Redevelopment Potential

Based on property records, there are a total of 1,209 parcels within the Village of Mamaroneck's Moratorium Area. Many of these parcels, however, are individual condo units within larger condominium complexes. A parcel-specific analysis revealed that consolidating these individual units to condominium properties reduced the number of parcels to analyze for future redevelopment potential from 1,209 parcels to 668 parcels.

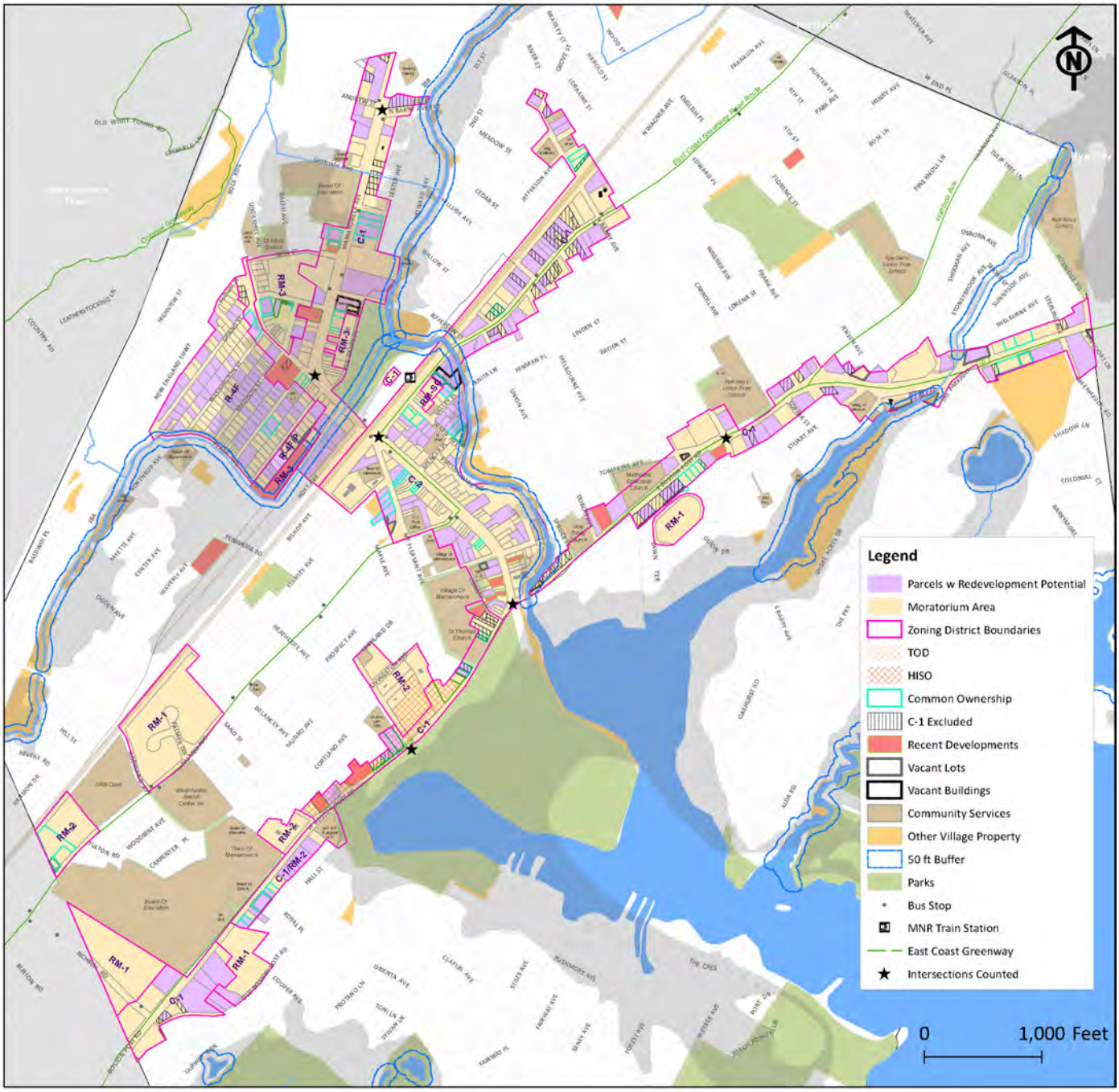
There are also a number of individual parcels adjacent to one another and owned by the same entity. We made the decision to assume that these parcels would be combined for redevelopment purposes. This reduced the number of parcels to analyze to 605.

Of these 605 parcels, 28 are either publicly-owned or are owned by the Washingtonville Housing Alliance. We removed these properties from the analysis, leaving 577 parcels for further consideration. 227 parcels (or combinations of parcels, also referred to as "assemblages") are not large enough to qualify for redevelopment (due to the minimum lot size of 5,000 sq. ft.; 7,500 sq. ft. in the R-4F zone. This leaves 350 parcels to analyze.

Eleven of these properties have either recently undergone redevelopment or are in the midst of significant reinvestment. Another 73 properties are unlikely to be redeveloped. These include larger churches, new automobile dealerships, McDonald's, large established restaurants, larger/older apartment complexes and condominiums, social service facilities, freestanding banks owned by the bank itself, etc. Finally, we determined that 56 parcels have current values that are so high that acquisition, demolition, and redevelopment would not likely be financially feasible. **This leaves 210 parcels to analyze for their future redevelopment potential**.

Figure 1 highlights the Moratorium Area and the 210 parcels that were analyzed for future redevelopment potential.

Figure 1: Map of the Moratorium Area



2. Approach to the Fiscal Impact Analysis

Assessing the fiscal impact of redevelopment on the Village and the two school districts requires both an understanding of the fiscal impact of the existing uses of these properties and an estimate of the likely fiscal impact from the new uses. The ***change in fiscal impact between existing and new uses*** is the appropriate measure of the fiscal impacts of redevelopment.

The Village of Mamaroneck receives a variety of revenue streams that are impacted by the nature and value of development on individual parcels as well as the population occupying those parcels. These revenue sources include:

1. **Real Property Tax**: $24.63 million based on a tax rate of .60414% of real estate market value
2. **Sales Tax Disbursement**: $2.76 million based on resident population, currently at $143 per capita
3. **Mortgage Tax**: $500,000 based on .75% of sales value; assumes 1.64% of property sells annually
4. **Building & Electric Permits**: $701,000 based on property values @ 2.85% of property tax revenue
5. **Library District Property Tax**: $2.79 million at a tax rate of .069% of real estate market value
6. **Youth Day Camp Fees**: $300,000, estimated at $79 per school-aged child
7. **Utility Gross Receipts Tax**: $300,000 based on property values @ 1.22% of property tax revenue
8. **Other**: $2.88 million based on $112 per resident and $2,800 per commercial acre.

Note: "Other" revenue includes parking fees & fines, allocated 63% to residents and 37% to commercial uses; recreation fees and permits/licenses, allocated 95% to residents and 5% to commercial uses; and state revenue sharing, allocated entirely to residents.

Similarly, the physical and demographic characteristics of individual parcels can impact most Village expenditures, including:

1. **Police, Fire & Jail Services**: $13.49 million (including fringe benefits) based on $420 per resident (60% of total cost) and $20,475 per business acre (40% of cost)
2. **Infrastructure**: $4.99 million based on $4,089 per developed acre
3. **Youth Day Camp**: $421,000, estimated at $111 per school-aged child
4. **General Administration/Sanitation/Recreation/Library**: $15.36 million (including fringe benefits) based on $787 per resident (99% of total cost) and $761 per business acre (1% of cost).

For the school districts, with modest adjustments for external revenues, the local cost per enrolled student for Mamaroneck SD in 2018 is $21,635; for Rye Neck SD, it is $23,494. Similarly, the only significant local revenue source is the real estate property tax at 1.338% of market value for Mamaroneck SD and 1.512% of market value for Rye Neck SD. To determine the likely number of enrolled students from any given property, we note that enrollment in Mamaroneck SD schools is 94% of persons aged 5 to17, while enrollment in Rye Neck SD schools is 87% of persons aged 5 to17.

Finally, we note that these cost factors cover only operating costs. Both school districts report that, while there is some physical capacity for growth at middle school and secondary levels, their elementary school facilities are totally filled and any net growth in elementary school enrollment will require the addition of new classroom space. The capital budgets of these districts estimate the cost of new elementary school space at $70,000 per student; amortizing that cost yields an annual debt service expenditure of $3,777 per incremental elementary school student.

As a result, the net fiscal impact of any use—existing or redeveloped—for the Village is the total of these eight revenue streams less the total of the four cost components. This net fiscal impact will be positive if the revenues exceed the costs; negative if costs are higher than revenues. Similarly, for the School Districts, the net fiscal impact of any use is the revenue received (from real estate property taxes) less the operating cost to educate students enrolled from that parcel and less any debt service required to pay for new elementary school facilities. The **net fiscal impact of redevelopment**, then, is the ***net fiscal impact of the future use less the net fiscal impact of the existing use.***

3. Redevelopment Scenarios

Recent development activity in the Moratorium Zone has generally focused on two building types: (1) two- and three-bedroom townhomes for sale and (2) smaller apartment complexes of one- and two-bedroom units. During the redevelopment process, the decision of whether to pursue the townhome for sale or rental apartment approach will be impacted most importantly by the size of the parcel and the patience of the developer.

More than 80% of potential redevelopment parcels are too small to reasonably accommodate even a small apartment development; therefore, these smaller parcels can almost always be assumed to change to for-sale townhomes. On the other hand, somewhat larger parcels can accommodate either the townhome or the apartment product. The total short-term profitability of the townhome product appears higher; however, there is significant risk in anticipating a multi-year buildout and many developers will opt for the lesser, but more certain, returns from rental apartments. For this analysis, we have selected the approach that appears most compatible with recent activity in the vicinity of each specific parcel.

We also note that the zoning along certain blocks of Mamaroneck Avenue prohibits residential first floor uses. This results in likely mixed use redevelopment—either through demolition and reconstruction of four-story buildings (three floors of apartments over a commercial first floor) or through retention of the existing commercial building and adding a new building in the rear of the parcel with three floors of apartments over parking.
Given these likely redevelopment types, for this analysis we assume that the redevelopment of all parcels will include some multiple of one or more of these components:

1. **2-Bedroom Townhome** for sale priced at $1.1 million in most locations (note: this pricing is based on current offerings; some locations may command higher prices, but we are here assuming the $1.1 million price to be the standard at 2018 pricing);
2. **3-Bedroom Townhome** for sale priced at $1.5 million in most locations;
3. **2-Bedroom Townhome** for sale priced at $640,000 in Washingtonville (note: we anticipate townhome pricing in Washingtonville to be at approximately 58% of pricing elsewhere in the Village; this is based on analysis of rents for new townhomes in Washingtonville);
4. **3-Bedroom Townhome** for sale priced at $870,000 in Washingtonville;
5. **800 square foot 1-Bedroom Rental Apartment** valued at $175,000 based on $218.75 per SF;
6. **1,025 square foot 2-Bedroom Rental Apartment** valued at $225,000 based on $218.75 per SF;
7. 1**,000 square foot commercial space** valued at $300,000 based on $300 per SF.

3.1 Population & School Enrollment Characteristics of Redevelopment Components

To assess the fiscal impact of each of these components, we need to establish the population and school-age children (SAC) likely to reside within each component. The standard approach often used to determine these characteristics employs the demographic multiplier tables calculated by the Rutgers University Center for Urban Policy for New York in 2006. This analysis was based on broad demographic impacts for different housing types. This Rutgers model is now 12 years old and, while still respected for its differentiation among housing types, may be vulnerable to overall adjustments in demographic patterns such as changes in child-bearing and household living arrangements.

Given the sensitivity of this Mamaroneck fiscal impact analysis to demographic characteristics, we have endeavored to develop three alternative approaches to estimating these factors. These are described in detail in **Appendix A-1**. In brief, these three approaches are:

1. **Adjusted Rutgers Model**, which increases expected school-age children in Mamaroneck by 9% to reflect current conditions;
2. **A Local School Attraction** model based on the observation that a community with attractive schools may result in greater population and school-age children density than average. To assess that potential, this

model calculates actual population per occupied bedroom for both school district segments of Mamaroneck and, noting that almost all children occupy "extra" bedrooms in each housing unit—that is, bedrooms AFTER the first, it calculates the number of school-age children per occupied bedroom after the first for each school district segment; and

3. **The Non-Householder Population** model which considers how many persons reside in a particular housing type beyond the first person (the defined householder) and what share of these "extra persons" are school-age children. We have undertaken this analysis for both the Mamaroneck FSD and Rye Neck FSD portions of the Village.

On **Table 1**, we estimate population, school-age children (SAC), and public school enrollment factors for each development component utilizing all three models. Note that these calculations are reported in fractions of persons for two reasons: first, these components are "building" blocks and will be added to get specific impacts for individual parcels and, second, because this analysis estimates the **likelihood** of specific impacts over a long period of time. The three models yield fairly consistent estimates of overall population (+/- 15%) with the exception of one-bedroom rental apartments where there are differences up to 67%. For SAC children, there is great consistency among the models for one-bedroom apartments, but significant variation for townhomes and two-bedroom apartments in the Mamaroneck SD. On the other hand, for Rye Neck SD, variation in SAC among the models is substantially less.

Table 1. Demographic Characteristics of Redevelopment Components

		Adjusted Rutgers Model				Local School Attraction				Non-Householder Population			
Redevelopment Component	Estimated Redeveloped Value	Estimated Population	Total Estimated SAC	Enrollment: MSD (94% of SAC) RNSD (87% of SAC)	Elementary School Enrollment	Estimated Population	Total Estimated SAC	Enrollment: MSD (94% of SAC) RNSD (87% of SAC)	Elementary School Enrollment	Estimated Population	Total Estimated SAC	Enrollment: MSD (94% of SAC) RNSD (87% of SAC)	Elementary School Enrollment
Mamaroneck SD													
Townhome--2 Bedroom For Sale	$ 1,100,000	2.09	0.14	0.13	0.06	2.18	0.38	0.36	0.17	1.72	0.24	0.23	0.11
Townhome--3 Bedroom For Sale	$ 1,500,000	2.83	0.41	0.39	0.18	3.27	0.76	0.72	0.34	2.68	0.55	0.52	0.24
Townhome--2 BR Washingtonville For Sale	$ 640,000	2.09	0.14	0.13	0.06	2.18	0.38	0.36	0.17	1.72	0.24	0.23	0.11
Townhome--3 BR Washingtonville For Sale	$ 870,000	2.83	0.41	0.39	0.18	3.27	0.76	0.72	0.34	2.68	0.55	0.52	0.24
Apartment--1 Bedroom Rental	$ 175,000	1.67	0.09	0.08	0.04	1.09	0.00	0.00	0.00	1.33	0.11	0.10	0.05
Apartment--2 Bedroom Rental	$ 225,000	2.31	0.26	0.24	0.11	2.18	0.38	0.36	0.17	2.66	0.55	0.52	0.24
Commercial Space--1,000 SF	$ 300,000												
Rye Neck SD													
Townhome--2 Bedroom For Sale	$ 1,100,000	2.09	0.14	0.12	0.06	2.00	0.31	0.27	0.13	1.84	0.26	0.23	0.11
Townhome--3 Bedroom For Sale	$ 1,500,000	2.83	0.41	0.36	0.17	3.00	0.62	0.54	0.25	2.76	0.55	0.48	0.22
Apartment--1 Bedroom Rental	$ 175,000	1.67	0.09	0.08	0.04	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
Apartment--2 Bedroom Rental	$ 225,000	2.31	0.26	0.23	0.11	2.00	0.31	0.27	0.13	1.82	0.26	0.23	0.11
Commercial Space--1,000 SF	$ 300,000												

3.2 Fiscal Impact of Redevelopment Components

On **Table 2**, we apply the fiscal factors for the Village and the two school districts described above and the population and school-age children factors for each of the three models from Table 1 to assess the fiscal impact of each of these components under each of the three models. These impacts are summarized on Table 2 and the details of these calculations are shown in more detail in **Appendix B**.

The $1.1 million to $1.5 million townhomes and commercial space yield very positive fiscal impacts for the Village and both School Districts under all three models. The Washingtonville townhomes are quite positive fiscally for the Village, but their impacts on Mamaroneck SD vary from model to model. The 2-BR apartments result in very modest fiscal losses for the Village under all three models, while the net impacts on the Village of 1-BR apartments vary from model to model, but are generally very modest. For the School Districts, 1-BR apartments provide generally positive fiscal impacts, but 2-BR units are a consistent fiscal negative.

Table 2. Net Fiscal Impact of Redevelopment Components

	Adjusted Rutgers Model							Local School Attraction							Non-Householder Population						
	Village Impact			School District Impact				Village Impact			School District Impact				Village Impact			School District Impact			
Redevelopment Component	Total Revenue	Total Expense	Net Fiscal Impact of New Use--Village	Revenue	Operating Expense	Debt Service for New Elementary School Space	Net Fiscal Impact of New Use--School District	Total Revenue	Total Expense	Net Fiscal Impact of New Use--Village	Revenue	Operating Expense	Debt Service for New Elementary School Space	Net Fiscal Impact of New Use--School District	Total Revenue	Total Expense	Net Fiscal Impact of New Use--Village	Revenue	Operating Expense	Debt Service for New Elementary School Space	Net Fiscal Impact of New Use--School District
Mamaroneck SD																					
Townhome--2 Bedroom For Sale	$ 8,354	$ 2,768	**$ 5,587**	$ 14,718	$ 2,847	$ 234	**$ 11,637**	$ 8,386	$ 2,894	**$ 5,493**	$ 14,718	$ 7,748	$ 636	**$ 6,334**	$ 8,268	$ 2,323	**$ 5,945**	$ 14,718	$ 4,881	$ 400	**$ 9,437**
Townhome--3 Bedroom For Sale	$ 11,404	$ 3,773	**$ 7,631**	$ 20,070	$ 8,338	$ 684	**$ 11,048**	$ 11,495	$ 4,331	**$ 7,164**	$ 20,070	$ 15,497	$ 1,272	**$ 3,302**	$ 11,377	$ 3,596	**$ 7,781**	$ 20,070	$ 11,185	$ 918	**$ 7,967**
Townhome--2 BR Washingtonville For Sale	$ 5,088	$ 2,768	**$ 2,321**	$ 8,563	$ 2,847	$ 234	**$ 5,482**	$ 5,120	$ 2,894	**$ 2,227**	$ 8,563	$ 7,748	$ 636	**$ 179**	$ 5,002	$ 2,323	**$ 2,679**	$ 8,563	$ 4,881	$ 400	**$ 3,282**
Townhome--3 BR Washingtonville For Sale	$ 6,931	$ 3,773	**$ 3,158**	$ 11,641	$ 8,338	$ 684	**$ 2,618**	$ 7,022	$ 4,331	**$ 2,691**	$ 11,641	$ 15,497	$ 1,272	**$ (5,128)**	$ 6,904	$ 3,596	**$ 3,308**	$ 11,641	$ 11,185	$ 918	**$ (462)**
Apartment--1 Bedroom Rental	$ 1,676	$ 1,910	**$ (234)**	$ 2,342	$ 1,830	$ 150	**$ 361**	$ 1,585	$ 1,262	**$ 323**	$ 2,342			**$ 2,342**	$ 1,590	$ 1,538	**$ 52**	$ 2,342	$ 2,237	$ 184	**$ (79)**
Apartment--2 Bedroom Rental	$ 2,207	$ 2,674	**$ (467)**	$ 3,011	$ 5,288	$ 434	**$ (2,711)**	$ 2,198	$ 2,516	**$ (318)**	$ 3,011	$ 7,748	$ 636	**$ (5,374)**	$ 2,319	$ 3,062	**$ (743)**	$ 3,011	$ 11,185	$ 918	**$ (9,093)**
Commercial Space--1,000 SF	$ 2,184	$ 487	**$ 1,697**	$ 4,014			**$ 4,014**	$ 2,184	$ 487	**$ 1,697**	$ 4,014			**$ 4,014**	$ 2,184	$ 487	**$ 1,697**	$ 4,014			**$ 4,014**
Rye Neck SD																					
Townhome--2 Bedroom For Sale	$ 8,354	$ 2,768	**$ 5,587**	$ 16,632	$ 2,862	$ 216	**$ 13,554**	$ 8,355	$ 2,669	**$ 5,686**	$ 16,632	$ 6,357	$ 480	**$ 9,795**	$ 8,300	$ 2,470	**$ 5,830**	$ 16,632	$ 5,314	$ 402	**$ 10,916**
Townhome--3 Bedroom For Sale	$ 11,404	$ 3,769	**$ 7,636**	$ 22,680	$ 8,380	$ 633	**$ 13,666**	$ 11,446	$ 3,990	**$ 7,455**	$ 22,680	$ 12,714	$ 961	**$ 9,006**	$ 11,398	$ 3,692	**$ 7,705**	$ 22,680	$ 11,242	$ 849	**$ 10,589**
Apartment--1 Bedroom Rental	$ 1,676	$ 1,959	**$ (283)**	$ 2,646	$ 1,840	$ 139	**$ 667**	$ 1,573	$ 1,223	**$ 350**	$ 2,646			**$ 2,646**	$ 1,498	$ 1,223	**$ 275**	$ 2,646			**$ 2,646**
Apartment--2 Bedroom Rental	$ 2,207	$ 2,721	**$ (514)**	$ 3,402	$ 5,314	$ 402	**$ (2,314)**	$ 2,167	$ 2,391	**$ (224)**	$ 3,402	$ 6,357	$ 480	**$ (3,435)**	$ 2,082	$ 2,187	**$ (105)**	$ 3,402	$ 5,314	$ 402	**$ (2,314)**
Commercial Space--1,000 SF	$ 2,238	$ 973	**$ 1,265**	$ 4,536			**$ 4,536**	$ 2,238	$ 973	**$ 1,265**	$ 4,536			**$ 4,536**	$ 2,238	$ 973	**$ 1,265**	$ 4,536			**$ 4,536**

4. Property-Specific Fiscal Impact Analysis

As previously noted, we analyzed 210 properties individually to assess the likely fiscal impact of their redevelopment. These 210 properties present six different redevelopment circumstances:

1. **Existing Commercial properties are Redeveloped as For-Sale Townhomes.** 56 properties—28 located in the Mamaroneck School District and 28 located in the Rye Neck District—fit this circumstance. For most properties, the anticipated redevelopment is two to six townhomes. However, seven parcels, all located within the Mamaroneck SD, can accommodate a larger number of townhomes.

2. **Existing Commercial Properties are Redeveloped as Mixed-Use Developments.** 11 properties, seven of which are in the 100 to 400 blocks of Mamaroneck Avenue, are anticipated to redevelop in mixed use.

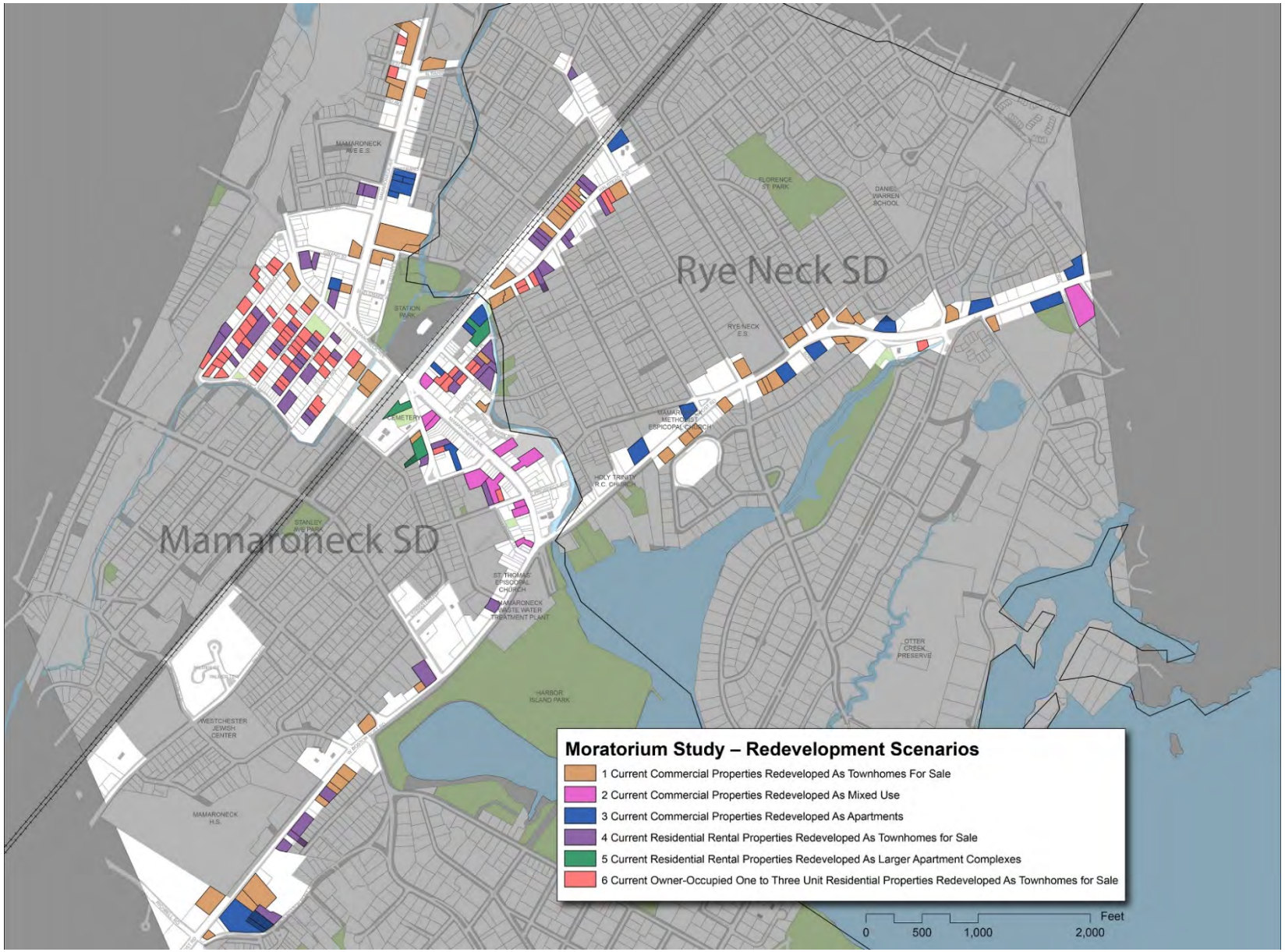
3. **Existing Commercial Properties are Redeveloped as Apartments.** 18 properties—nine located in the Mamaroneck SD and nine in the Rye Neck District—fit this circumstance. These properties could add as many as 400 apartments through redevelopment.

4. **Existing Residential Rental Properties are Redeveloped as For-Sale Townhomes.** 59 properties, two-thirds of which currently have one to three rental units, are candidates for redevelopment as for sale townhomes. Of these 59, 43 are located in the Mamaroneck School District and 16 are in the Rye Neck District.

5. **Existing Residential Rental Properties are Redeveloped as Larger Apartment Complexes.** Three assemblages in the Mamaroneck SD currently house 15 apartments, but could be redeveloped into as many as 150 apartments.

6. **Existing Owner-Occupied 1- to 3-Family Buildings are Redeveloped as For-Sale Townhomes.** There are 63 apparently owner-occupied smaller properties that could over time evolve into small new townhome complexes of two to five units. The timing of these smaller redevelopments will be difficult to predict because they likely will coincide with the current owners moving for reasons other than the desire to redevelop.

Figure 2: Map of Probable Future Redevelopment Scenarios



Category 1: Existing Commercial Properties Redeveloping As For-Sale Townhomes.

Fiscal Impact of Existing Uses

On **Table 3**, we calculate the fiscal impact on the Village and the school districts from the existing development on these 56 properties. Not surprisingly, the fiscal impact on the Village varies from property to property—some modestly positive; some modestly negative. This near zero average fiscal impact results from the balancing of two factors: (1) with no existing residential population, commercial properties make fewer demands on municipal services; and (2) as likely targets for redevelopment, these properties have comparatively low market values and property tax yield. For the School Districts, however, commercial properties yield substantial fiscal gain because they include no children.

Table 3. Fiscal Impact of Existing Use—Category 1: Commercial Properties Redeveloping As Townhomes

Address	Dir	Street	Square Feet of Land	Current Assessment	Current Housing Units	Current Use Village Revenue: Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Current Use Mamaroneck SD: Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Commercial Properties Redeveloped As Townhomes For Sale (56)																					
Mamaroneck SD (28)																					
749	W	BOSTON POST RD	6,367	$600,000	0	$ 3,625		$ 74	$ 103	$ 414	$ 44	$ 409	$ 4,669	$ 2,993	$ 598	$ 111	$ 3,702	**$ 968**	$ 8,028		**$ 8,028**
510	W	BOSTON POST RD	5,936	$635,000	0	$ 3,836		$ 78	$ 109	$ 438	$ 47	$ 382	$ 4,890	$ 2,790	$ 557	$ 104	$ 3,451	**$ 1,439**	$ 8,496		**$ 8,496**
600	W	BOSTON POST RD	16,391	$1,100,000	0	$ 6,646		$ 135	$ 189	$ 759	$ 81	$ 1,054	$ 8,864	$ 7,704	$ 1,539	$ 286	$ 9,529	**$ (666)**	$ 14,718		**$ 14,718**
667	W	BOSTON POST RD	14,532	$1,300,000	0	$ 7,854		$ 160	$ 224	$ 897	$ 96	$ 934	$10,164	$ 6,831	$ 1,364	$ 254	$ 8,449	**$ 1,716**	$ 17,394		**$ 17,394**
703	W	BOSTON POST RD	13,557	$1,000,000	0	$ 6,041		$ 123	$ 172	$ 690	$ 74	$ 871	$ 7,972	$ 6,372	$ 1,273	$ 237	$ 7,882	**$ 90**	$ 13,380		**$ 13,380**
721	W	BOSTON POST RD	6,292	$625,000	0	$ 3,776		$ 77	$ 108	$ 431	$ 46	$ 404	$ 4,842	$ 2,958	$ 591	$ 110	$ 3,658	**$ 1,184**	$ 8,363		**$ 8,363**
1015	W	BOSTON POST RD	47,927	$3,500,000	0	$21,145		$ 431	$ 603	$ 2,415	$ 258	$ 3,081	$27,932	$ 22,528	$ 4,499	$ 837	$ 27,864	**$ 68**	$ 46,830		**$ 46,830**
1030	W	BOSTON POST RD	34,726	$2,725,000	0	$16,463		$ 335	$ 469	$ 1,880	$ 201	$ 2,232	$21,580	$ 16,323	$ 3,260	$ 607	$ 20,189	**$ 1,391**	$ 36,461		**$ 36,461**
1043	W	BOSTON POST RD	17,285	$1,250,000	0	$ 7,552		$ 154	$ 215	$ 863	$ 92	$ 1,111	$ 9,986	$ 8,125	$ 1,623	$ 302	$ 10,049	**$ (63)**	$ 16,725		**$ 16,725**
1153	W	BOSTON POST RD	5,184	$600,000	0	$ 3,625		$ 74	$ 103	$ 414	$ 44	$ 333	$ 4,593	$ 2,437	$ 487	$ 91	$ 3,014	**$ 1,580**	$ 8,028		**$ 8,028**
115		HOYT AVE	22,282	$1,400,000	0	$ 8,458		$ 172	$ 241	$ 966	$ 103	$ 1,432	$11,373	$ 10,473	$ 2,092	$ 389	$ 12,954	**$ (1,582)**	$ 18,732		**$ 18,732**
135		HOYT AVE	6,197	$610,000	0	$ 3,685		$ 75	$ 105	$ 421	$ 45	$ 398	$ 4,730	$ 2,913	$ 582	$ 108	$ 3,603	**$ 1,127**	$ 8,162		**$ 8,162**
180		JEFFERSON AVE	10,888	$723,400	0	$ 4,370		$ 89	$ 125	$ 499	$ 53	$ 700	$ 5,836	$ 5,118	$ 1,022	$ 190	$ 6,330	**$ (494)**	$ 9,679		**$ 9,679**
660		MAMARONECK AVE	7,718	$825,000	0	$ 4,984		$ 101	$ 142	$ 569	$ 61	$ 496	$ 6,354	$ 3,628	$ 724	$ 135	$ 4,487	**$ 1,867**	$ 11,039		**$ 11,039**
712		MAMARONECK AVE	12,405	$1,450,000	0	$ 8,760		$ 178	$ 250	$ 1,001	$ 107	$ 797	$11,093	$ 5,831	$ 1,164	$ 217	$ 7,212	**$ 3,881**	$ 19,401		**$ 19,401**
731		MAMARONECK AVE	69,186	$3,630,000	0	$21,930		$ 446	$ 625	$ 2,505	$ 268	$ 4,447	$30,221	$ 32,520	$ 6,495	$ 1,209	$ 40,223	**$ (10,002)**	$ 48,569		**$ 48,569**
950		MAMARONECK AVE	15,339	$850,000	0	$ 5,135		$ 105	$ 146	$ 587	$ 63	$ 986	$ 7,021	$ 7,210	$ 1,440	$ 268	$ 8,918	**$ (1,897)**	$ 11,373		**$ 11,373**
955		MAMARONECK AVE	8,378	$550,000	0	$ 3,323		$ 68	$ 95	$ 380	$ 41	$ 539	$ 4,444	$ 3,938	$ 786	$ 146	$ 4,871	**$ (427)**	$ 7,359		**$ 7,359**
960		MAMARONECK AVE	10,881	$1,065,000	0	$ 6,434		$ 131	$ 183	$ 735	$ 78	$ 699	$ 8,261	$ 5,115	$ 1,021	$ 190	$ 6,326	**$ 1,935**	$ 14,250		**$ 14,250**
1001		MAMARONECK AVE	19,434	$1,200,000	0	$ 7,250		$ 148	$ 207	$ 828	$ 88	$ 1,249	$ 9,770	$ 9,135	$ 1,824	$ 340	$ 11,299	**$ (1,529)**	$ 16,056		**$ 16,056**
1008		MAMARONECK AVE	39,014	$3,200,000	0	$19,332		$ 394	$ 551	$ 2,208	$ 236	$ 2,508	$25,229	$ 18,338	$ 3,662	$ 682	$ 22,682	**$ 2,547**	$ 42,816		**$ 42,816**
705-715		MAMARONECK AVE	17,169	$1,660,000	0	$10,029		$ 204	$ 286	$ 1,145	$ 122	$ 1,104	$12,890	$ 8,070	$ 1,612	$ 300	$ 9,982	**$ 2,908**	$ 22,211		**$ 22,211**
360		MT PLEASANT AVE	5,684	$790,000	0	$ 4,773		$ 97	$ 136	$ 545	$ 58	$ 365	$ 5,975	$ 2,672	$ 534	$ 99	$ 3,305	**$ 2,670**	$ 10,570		**$ 10,570**
712		OLD WHITE PLAINS	9,907	$650,000	0	$ 3,927		$ 80	$ 112	$ 449	$ 48	$ 637	$ 5,252	$ 4,657	$ 930	$ 173	$ 5,760	**$ (508)**	$ 8,697		**$ 8,697**
744-760		OLD WHITE PLAINS	17,723	$1,190,000	0	$ 7,189		$ 146	$ 205	$ 821	$ 88	$ 1,139	$ 9,589	$ 8,331	$ 1,664	$ 310	$ 10,304	**$ (715)**	$ 15,922		**$ 15,922**
355		PHILLIPS PARK RD	6,020	$530,000	0	$ 3,202		$ 65	$ 91	$ 366	$ 39	$ 387	$ 4,150	$ 2,830	$ 565	$ 105	$ 3,500	**$ 650**	$ 7,091		**$ 7,091**
0	E	PLAZA AVE	13,799	$440,000	0	$ 2,658		$ 54	$ 76	$ 304	$ 32	$ 887	$ 4,011	$ 6,486	$ 1,295	$ 241	$ 8,022	**$ (4,011)**	$ 5,887		**$ 5,887**
225		VALLEY PL	6,318	$580,000	0	$ 3,504		$ 71	$ 100	$ 400	$ 43	$ 406	$ 4,524	$ 2,970	$ 593	$ 110	$ 3,673	**$ 851**	$ 7,760		**$ 7,760**

APPENDIX A: PARCEL ANALYSIS, REDEVELOPMENT SCENARIOS & FISCAL IMPACTS - 12/14/2018

						Current Use Village Revenue												Current Use Rye Neck SD		
Address	Dir	Street	Square Feet of Land	Current Assessment	Current Housing Units	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Rye Neck SD (28)																					
501	E	BOSTON POST RD	12,097	$999,900	0	$ 6,041		$ 123	$ 172	$ 690	$ 74	$ 778	$ 7,877	$ 5,686	$ 1,136	$ 211	$ 7,033	**$ 844**	$ 15,118		**$ 15,118**
555	E	BOSTON POST RD	9,858	$853,000	0	$ 5,153		$ 105	$ 147	$ 589	$ 63	$ 634	$ 6,690	$ 4,634	$ 925	$ 172	$ 5,731	**$ 959**	$ 12,897		**$ 12,897**
579	E	BOSTON POST RD	9,695	$576,900	0	$ 3,485		$ 71	$ 99	$ 398	$ 43	$ 623	$ 4,719	$ 4,557	$ 910	$ 169	$ 5,636	**$ (917)**	$ 8,723		**$ 8,723**
637	E	BOSTON POST RD	11,595	$136,300	0	$ 823		$ 17	$ 23	$ 94	$ 10	$ 745	$ 1,713	$ 5,450	$ 1,088	$ 203	$ 6,741	**$ (5,028)**	$ 2,061		**$ 2,061**
708	E	BOSTON POST RD	16,432	$918,800	0	$ 5,551		$ 113	$ 158	$ 634	$ 68	$ 1,056	$ 7,580	$ 7,724	$ 1,542	$ 287	$ 9,553	**$ (1,973)**	$ 13,892		**$ 13,892**
723	E	BOSTON POST RD	6,909	$326,000	0	$ 1,969		$ 40	$ 56	$ 225	$ 24	$ 444	$ 2,759	$ 3,248	$ 649	$ 121	$ 4,017	**$ (1,258)**	$ 4,929		**$ 4,929**
735	E	BOSTON POST RD	6,637	$399,000	0	$ 2,411		$ 49	$ 69	$ 275	$ 29	$ 427	$ 3,260	$ 3,120	$ 623	$ 116	$ 3,859	**$ (599)**	$ 6,033		**$ 6,033**
745	E	BOSTON POST RD	16,238	$841,500	0	$ 5,084		$ 104	$ 145	$ 581	$ 62	$ 1,044	$ 7,019	$ 7,633	$ 1,524	$ 284	$ 9,440	**$ (2,422)**	$ 12,723		**$ 12,723**
804	E	BOSTON POST RD	9,956	$876,100	0	$ 5,293		$ 108	$ 151	$ 605	$ 65	$ 640	$ 6,861	$ 4,680	$ 935	$ 174	$ 5,788	**$ 1,072**	$ 13,247		**$ 13,247**
816	E	BOSTON POST RD	8,947	$455,300	0	$ 2,751		$ 56	$ 78	$ 314	$ 34	$ 575	$ 3,808	$ 4,205	$ 840	$ 156	$ 5,202	**$ (1,394)**	$ 6,884		**$ 6,884**
910	E	BOSTON POST RD	7,733	$821,400	0	$ 4,962		$ 101	$ 141	$ 567	$ 61	$ 497	$ 6,329	$ 3,635	$ 726	$ 135	$ 4,496	**$ 1,833**	$ 12,420		**$ 12,420**
916	E	BOSTON POST RD	8,340	$593,300	0	$ 3,584		$ 73	$ 102	$ 409	$ 44	$ 536	$ 4,749	$ 3,920	$ 783	$ 146	$ 4,849	**$ (100)**	$ 8,971		**$ 8,971**
931	E	BOSTON POST RD	7,667	$747,500	0	$ 4,516		$ 92	$ 129	$ 516	$ 55	$ 493	$ 5,800	$ 3,604	$ 720	$ 134	$ 4,457	**$ 1,343**	$ 11,302		**$ 11,302**
946	E	BOSTON POST RD	13,792	$1,162,300	0	$ 7,022		$ 143	$ 200	$ 802	$ 86	$ 887	$ 9,139	$ 6,483	$ 1,295	$ 241	$ 8,018	**$ 1,121**	$ 17,574		**$ 17,574**
951	E	BOSTON POST RD	16,821	$759,000	0	$ 4,585		$ 93	$ 131	$ 524	$ 56	$ 1,081	$ 6,470	$ 7,907	$ 1,579	$ 294	$ 9,779	**$ (3,309)**	$ 11,476		**$ 11,476**
964	E	BOSTON POST RD	7,001	$535,200	0	$ 3,233		$ 66	$ 92	$ 369	$ 39	$ 450	$ 4,250	$ 3,291	$ 657	$ 122	$ 4,070	**$ 180**	$ 8,092		**$ 8,092**
1214	E	BOSTON POST RD	13,927	$829,300	0	$ 5,010		$ 102	$ 143	$ 572	$ 61	$ 895	$ 6,783	$ 6,546	$ 1,307	$ 243	$ 8,097	**$ (1,313)**	$ 12,539		**$ 12,539**
1275	E	BOSTON POST RD	10,503	$810,500	0	$ 4,897		$ 100	$ 140	$ 559	$ 60	$ 675	$ 6,430	$ 4,937	$ 986	$ 183	$ 6,106	**$ 324**	$ 12,255		**$ 12,255**
313		HALSTEAD AVE	13,547	$1,108,600	0	$ 6,697		$ 136	$ 191	$ 765	$ 82	$ 871	$ 8,742	$ 6,368	$ 1,272	$ 237	$ 7,876	**$ 866**	$ 16,762		**$ 16,762**
324		HALSTEAD AVE	17,581	$1,539,200	0	$ 9,299		$ 189	$ 265	$ 1,062	$ 113	$ 1,130	$12,059	$ 8,264	$ 1,650	$ 307	$ 10,221	**$ 1,838**	$ 23,273		**$ 23,273**
480		HALSTEAD AVE	9,889	$353,900	0	$ 2,138		$ 44	$ 61	$ 244	$ 26	$ 636	$ 3,148	$ 4,648	$ 928	$ 173	$ 5,749	**$ (2,601)**	$ 5,351		**$ 5,351**
500		HALSTEAD AVE	15,632	$894,700	0	$ 5,405		$ 110	$ 154	$ 617	$ 66	$ 1,005	$ 7,357	$ 7,348	$ 1,467	$ 273	$ 9,088	**$ (1,731)**	$ 13,528		**$ 13,528**
530		HALSTEAD AVE	8,021	$634,900	0	$ 3,836		$ 78	$ 109	$ 438	$ 47	$ 516	$ 5,024	$ 3,770	$ 753	$ 140	$ 4,663	**$ 360**	$ 9,600		**$ 9,600**
540		HALSTEAD AVE	8,379	$500,300	0	$ 3,023		$ 62	$ 86	$ 345	$ 37	$ 539	$ 4,091	$ 3,938	$ 787	$ 146	$ 4,871	**$ (781)**	$ 7,565		**$ 7,565**
558		HALSTEAD AVE	6,300	$334,800	0	$ 2,023		$ 41	$ 58	$ 231	$ 25	$ 405	$ 2,782	$ 2,961	$ 591	$ 110	$ 3,663	**$ (881)**	$ 5,062		**$ 5,062**
606		HALSTEAD AVE	6,748	$412,400	0	$ 2,491		$ 51	$ 71	$ 285	$ 30	$ 434	$ 3,362	$ 3,172	$ 633	$ 118	$ 3,923	**$ (561)**	$ 6,235		**$ 6,235**
641		HALSTEAD AVE	17,256	$475,300	0	$ 2,871		$ 58	$ 82	$ 328	$ 35	$ 1,109	$ 4,484	$ 8,111	$ 1,620	$ 301	$ 10,032	**$ (5,548)**	$ 7,187		**$ 7,187**
426		UNION AVE	8,900	$564,500	0	$ 3,410		$ 69	$ 97	$ 390	$ 42	$ 572	$ 4,580	$ 4,183	$ 835	$ 155	$ 5,174	**$ (594)**	$ 8,535		**$ 8,535**

Net Fiscal Impact of Redevelopment

On **Table 4**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 3.

Taking the first property—749 W. Boston Post Road—for example. The anticipated redevelopment is 2 two-bedroom and 1 three-bedroom townhomes with a market value of $3.7 million. From Table 3, the current fiscal impact on the Village is a positive $968 annually, while the fiscal impact on Mamaroneck SD is a positive $8,028 annually. From Table 2, the anticipated fiscal impact for the Village under the Adjusted Rutgers Model is a positive $5,587 for each two-bedroom townhome and $7,631 for the three-bedroom townhome. This yields a total positive fiscal impact for the three townhomes of $18,805. Comparing that to the current $968 positive fiscal impact results is a **change in fiscal impact from redevelopment** for the Village of positive $17,837.

Similarly from Table 2, the anticipated fiscal impact for the School District under the Adjusted Rutgers Model is a positive $11,000 + for each of the three townhomes, yielding a total positive fiscal impact for the three townhomes for the School District of $34,322. Comparing that to the current $8,028 positive fiscal impact results is a **change in fiscal impact from redevelopment** for the School District of positive $26,294.

The other two models result in similar net positive change for the Village in the $17,200 to $18,700 range. The results for the School District are also positive, but less under the other two models—net $7,900 and net $18,800. Averaging the estimates from the three models, we identify an average net fiscal impact for the Village of positive $17,908 and an average net fiscal impact for Mamaroneck School District of positive $17,683.

Looking altogether at the 28 properties in this category in Mamaroneck SD, we observe:

- Redevelopment of all 28 properties yield average net positive results for the Village;
- Redevelopment of 26 of the 28 properties yields average net positive results for the School District.

Similarly, for the 28 properties in this category in Rye Neck SD, we observe that all 28 properties yield average net positive results from redevelopment for both the Village and the School District.

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Table 4. Net Fiscal Impact from Change in Use—Category 1: Commercial Properties Redeveloping As Townhomes

								Adjusted Rutgers Model					Local School Attraction					Non-Householder Population					Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (28)																								
749	W	BOSTON POST RD	$600,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 968	$ 8,028	$ 18,805	**$ 17,837**	$ 34,322		**$ 26,294**	$ 18,150	**$ 17,182**	$ 15,970		**$ 7,942**	$ 19,671	**$ 18,703**	$ 26,841		**$ 18,813**	**$ 17,908**	**$ 17,683**
510	W	BOSTON POST RD	$635,000	1 2-BR Townhome + 1 3-BR Townhome	$ 2,600,000	$ 1,439	$ 8,496	$ 13,218	**$ 11,779**	$ 22,685		**$ 14,189**	$ 12,657	**$ 11,218**	$ 9,636		**$ 1,140**	$ 13,726	**$ 12,287**	$ 17,404		**$ 8,908**	**$ 11,761**	**$ 8,079**
600	W	BOSTON POST RD	$1,100,000	5 3-BR Townhomes	$ 7,500,000	$ (666)	$ 14,718	$ 39,697	**$ 40,363**	$ 55,240		**$ 40,522**	$ 37,602	**$ 38,268**	$ 16,510		**$ 1,792**	$ 40,366	**$ 41,031**	$ 39,835		**$ 25,117**	**$ 39,887**	**$ 22,477**
667	W	BOSTON POST RD	$1,300,000	6 3-BR Townhomes	$ 9,000,000	$ 1,716	$ 17,394	$ 47,637	**$ 45,921**	$ 66,288		**$ 48,894**	$ 45,123	**$ 43,407**	$ 19,812		**$ 2,418**	$ 48,439	**$ 46,723**	$ 47,802		**$ 30,408**	**$ 45,350**	**$ 27,240**
703	W	BOSTON POST RD	$1,000,000	2 2-BR Townhomes + 4 3-BR Townhomes	$ 8,200,000	$ 90	$ 13,380	$ 43,388	**$ 43,298**	$ 67,466		**$ 54,086**	$ 41,543	**$ 41,453**	$ 25,876		**$ 12,496**	$ 44,557	**$ 44,468**	$ 50,742		**$ 37,362**	**$ 43,073**	**$ 34,648**
721	W	BOSTON POST RD	$625,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 1,184	$ 8,363	$ 18,805	**$ 17,621**	$ 34,322		**$ 25,960**	$ 18,150	**$ 16,966**	$ 15,970		**$ 7,608**	$ 19,671	**$ 18,487**	$ 26,841		**$ 18,479**	**$ 17,691**	**$ 17,349**
1015	W	BOSTON POST RD	$3,500,000	1 2-BR Townhome + 14 3-BR Townhomes	$22,100,000	$ 68	$ 46,830	$116,967	**$116,900**	$166,309		**$119,479**	$111,017	**$110,949**	$ 52,562		**$ 5,732**	$119,156	**$119,088**	$120,975		**$ 74,145**	**$ 115,646**	**$ 66,452**
1030	W	BOSTON POST RD	$2,725,000	1 2-BR Townhome + 10 3-BR Townhomes	$16,100,000	$ 1,391	$ 36,461	$ 85,210	**$ 83,818**	$122,117		**$ 85,657**	$ 80,935	**$ 79,544**	$ 39,354		**$ 2,894**	$ 86,864	**$ 85,472**	$ 89,107		**$ 52,647**	**$ 82,945**	**$ 47,066**
1043	W	BOSTON POST RD	$1,250,000	5 3-BR Townhomes	$ 7,500,000	$ (63)	$ 16,725	$ 39,697	**$ 39,760**	$ 55,240		**$ 38,515**	$ 37,602	**$ 37,665**	$ 16,510		$ (215)	$ 40,366	**$ 40,428**	$ 39,835		**$ 23,110**	**$ 39,284**	**$ 20,470**
1153	W	BOSTON POST RD	$600,000	2 2-BR Townhomes	$ 2,200,000	$ 1,580	$ 8,028	$ 11,174	**$ 9,594**	$ 23,274		**$ 15,246**	$ 10,986	**$ 9,406**	$ 12,668		**$ 4,640**	$ 11,890	**$ 10,310**	$ 18,874		**$ 10,846**	**$ 9,770**	**$ 10,244**
115		HOYT AVE	$1,400,000	7 3-BR Townhomes	$10,500,000	$ (1,582)	$ 18,732	$ 55,576	**$ 57,158**	$ 77,336		**$ 58,604**	$ 52,643	**$ 54,225**	$ 23,114		**$ 4,382**	$ 56,512	**$ 58,094**	$ 55,769		**$ 37,037**	**$ 56,492**	**$ 33,341**
135		HOYT AVE	$610,000	1 2-BR Townhome + 1 3-BR Townhome	$ 2,600,000	$ 1,127	$ 8,162	$ 13,218	**$ 12,091**	$ 22,685		**$ 14,523**	$ 12,657	**$ 11,530**	$ 9,636		**$ 1,474**	$ 13,726	**$ 12,599**	$ 17,404		**$ 9,242**	**$ 12,074**	**$ 8,413**
180		JEFFERSON AVE	$723,400	3 2-BR Townhomes + 1 3-BR Townhome	$ 4,800,000	$ (494)	$ 9,679	$ 24,392	**$ 24,886**	$ 45,959		**$ 36,280**	$ 23,643	**$ 24,137**	$ 22,304		**$ 12,625**	$ 25,616	**$ 26,110**	$ 36,278		**$ 26,599**	**$ 25,044**	**$ 25,168**
660		MAMARONECK AVE	$825,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 1,867	$ 11,039	$ 18,805	**$ 16,938**	$ 34,322		**$ 23,284**	$ 18,150	**$ 16,283**	$ 15,970		**$ 4,932**	$ 19,671	**$ 17,804**	$ 26,841		**$ 15,803**	**$ 17,009**	**$ 14,673**
712		MAMARONECK AVE	$1,450,000	1 2-BR Townhome + 3 3-BR Townhomes	$ 5,600,000	$ 3,881	$ 19,401	$ 28,480	**$ 24,599**	$ 44,781		**$ 25,380**	$ 26,985	**$ 23,104**	$ 16,240		$ (3,161)	$ 29,288	**$ 25,407**	$ 33,338		**$ 13,937**	**$ 24,370**	**$ 12,052**
731		MAMARONECK AVE	$3,630,000	2 2-BR Townhomes + 20 3-BR Townhomes	$32,200,000	$(10,002)	$ 48,569	$170,419	**$180,421**	$244,234		**$195,665**	$161,870	**$171,872**	$ 78,708		**$ 30,139**	$173,727	**$183,730**	$178,214		**$ 129,645**	**$ 178,674**	**$ 118,483**
950		MAMARONECK AVE	$850,000	1 2-BR Townhome + 4 3-BR Townhomes	$ 7,100,000	$ (1,897)	$ 11,373	$ 37,573	**$ 39,469**	$ 55,829		**$ 44,456**	$ 35,812	**$ 37,709**	$ 19,542		**$ 8,169**	$ 38,425	**$ 40,322**	$ 41,305		**$ 29,932**	**$ 39,167**	**$ 27,519**
955		MAMARONECK AVE	$550,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (427)	$ 7,359	$ 18,805	**$ 19,232**	$ 34,322		**$ 26,963**	$ 18,150	**$ 18,577**	$ 15,970		**$ 8,611**	$ 19,671	**$ 20,098**	$ 26,841		**$ 19,482**	**$ 19,302**	**$ 18,352**
960		MAMARONECK AVE	$1,065,000	3 3-BR Townhomes	$ 4,500,000	$ 1,935	$ 14,250	$ 22,893	**$ 20,958**	$ 33,144		**$ 18,894**	$ 21,492	**$ 19,557**	$ 9,906		$ (4,344)	$ 23,343	**$ 21,408**	$ 23,901		**$ 9,651**	**$ 20,641**	**$ 8,067**
1001		MAMARONECK AVE	$1,200,000	6 3-BR Townhomes	$ 9,000,000	$ (1,529)	$ 16,056	$ 47,637	**$ 49,166**	$ 66,288		**$ 50,232**	$ 45,123	**$ 46,652**	$ 19,812		**$ 3,756**	$ 48,439	**$ 49,968**	$ 47,802		**$ 31,746**	**$ 48,595**	**$ 28,578**
1008		MAMARONECK AVE	$3,200,000	12 3-BR Townhomes	$18,000,000	$ 2,547	$ 42,816	$ 95,274	**$ 92,727**	$132,576		**$ 89,760**	$ 90,245	**$ 87,698**	$ 39,624		$ (3,192)	$ 96,877	**$ 94,331**	$ 95,604		**$ 52,788**	**$ 91,585**	**$ 46,452**
705-715		MAMARONECK AVE	$1,660,000	2 2-BR Townhomes + 4 3-BR Townhomes	$ 8,200,000	$ 2,908	$ 22,211	$ 43,388	**$ 40,479**	$ 67,466		**$ 45,255**	$ 41,543	**$ 38,635**	$ 25,876		**$ 3,665**	$ 44,557	**$ 41,649**	$ 50,742		**$ 28,531**	**$ 40,254**	**$ 25,817**
360		MT PLEASANT AVE	$790,000	3 3-BR Townhomes	$ 4,500,000	$ 2,670	$ 10,570	$ 22,893	**$ 20,223**	$ 33,144		**$ 22,574**	$ 21,492	**$ 18,822**	$ 9,906		$ (664)	$ 23,343	**$ 20,673**	$ 23,901		**$ 13,331**	**$ 19,906**	**$ 11,747**
712		OLD WHITE PLAINS	$650,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (508)	$ 8,697	$ 9,474	**$ 9,982**	$ 7,854		$ (843)	$ 8,073	**$ 8,581**	$(15,384)		$ (24,081)	$ 9,924	**$ 10,432**	$ (1,386)		$ (10,083)	**$ 9,665**	$ (11,669)
744-760		OLD WHITE PLAINS	$1,190,000	2 2-BR + 4 3-BR Washingtonville Townhomes	$ 4,760,000	$ (715)	$ 15,922	$ 18,964	**$ 19,679**	$ 21,436		**$ 5,514**	$ 17,119	**$ 17,834**	$(20,154)		$ (36,076)	$ 20,133	**$ 20,849**	$ 4,716		$ (11,206)	**$ 19,454**	$ (13,923)
355		PHILLIPS PARK RD	$530,000	4 3-BR Townhomes	$ 6,000,000	$ 650	$ 7,091	$ 30,524	**$ 29,874**	$ 44,192		**$ 37,101**	$ 28,656	**$ 28,006**	$ 13,208		**$ 6,117**	$ 31,124	**$ 30,474**	$ 31,868		**$ 24,777**	**$ 29,451**	**$ 22,665**
0	E	PLAZA AVE	$440,000	3 2-BR + 2 3-BR Washingtonville Townhomes	$ 3,650,000	$ (4,011)	$ 5,887	$ 14,579	**$ 18,591**	$ 21,682		**$ 15,795**	$ 13,489	**$ 17,500**	$ (9,719)		$ (15,606)	$ 15,800	**$ 19,811**	$ 8,922		**$ 3,035**	**$ 18,634**	**$ 1,074**
225		VALLEY PL	$580,000	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ 851	$ 7,760	$ 26,436	**$ 25,585**	$ 45,370		**$ 37,610**	$ 25,314	**$ 24,463**	$ 19,272		**$ 11,512**	$ 27,452	**$ 26,601**	$ 34,808		**$ 27,048**	**$ 25,550**	**$ 25,390**

APPENDIX A: PARCEL ANALYSIS, REDEVELOPMENT SCENARIOS & FISCAL IMPACTS - 12/14/2018

								Adjusted Rutgers Model					Local School Attraction					Non-Householder Population					Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Rye Neck SD (28)																								
501	E	BOSTON POST RD	$999,900	1 2-BR Townhome + 3 3-BR Townhomes	$ 5,600,000	$ 844	$ 15,118	$ 28,495	**$ 27,651**	$ 54,552		**$ 39,434**	$ 28,051	**$ 27,207**	$ 36,813		**$ 21,695**	$ 28,945	**$ 28,101**	$ 42,683		**$ 27,565**	**$ 27,653**	**$ 29,564**
555	E	BOSTON POST RD	$853,000	3 3-BR Townhomes	$ 4,500,000	$ 959	$ 12,897	$ 22,908	**$ 21,949**	$ 40,998		**$ 28,101**	$ 22,365	**$ 21,406**	$ 27,018		**$ 14,121**	$ 23,115	**$ 22,156**	$ 31,767		**$ 18,870**	**$ 21,837**	**$ 20,364**
579	E	BOSTON POST RD	$576,900	3 3-BR Townhomes	$ 4,500,000	$ (917)	$ 8,723	$ 22,908	**$ 23,825**	$ 40,998		**$ 32,275**	$ 22,365	**$ 23,282**	$ 27,018		**$ 18,295**	$ 23,115	**$ 24,032**	$ 31,767		**$ 23,044**	**$ 23,713**	**$ 24,538**
637	E	BOSTON POST RD	$136,300	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ (5,028)	$ 2,061	$ 26,446	**$ 31,474**	$ 54,440		**$ 52,379**	$ 26,282	**$ 31,310**	$ 37,602		**$ 35,541**	$ 27,070	**$ 32,098**	$ 43,010		**$ 40,949**	**$ 31,627**	**$ 42,956**
708	E	BOSTON POST RD	$918,800	5 3-BR Townhomes	$ 7,500,000	$ (1,973)	$ 13,892	$ 39,722	**$ 41,696**	$ 68,330		**$ 54,438**	$ 38,910	**$ 40,883**	$ 45,030		**$ 31,138**	$ 40,029	**$ 42,002**	$ 52,945		**$ 39,053**	**$ 41,527**	**$ 41,543**
723	E	BOSTON POST RD	$326,000	2 3-BR Townhomes	$ 3,000,000	$ (1,258)	$ 4,929	$ 15,272	**$ 16,530**	$ 27,332		**$ 22,403**	$ 14,910	**$ 16,168**	$ 18,012		**$ 13,083**	$ 15,410	**$ 16,668**	$ 21,178		**$ 16,249**	**$ 16,455**	**$ 17,245**
735	E	BOSTON POST RD	$399,000	2 3-BR Townhomes	$ 3,000,000	$ (599)	$ 6,033	$ 15,272	**$ 15,871**	$ 27,332		**$ 21,299**	$ 14,910	**$ 15,509**	$ 18,012		**$ 11,979**	$ 15,410	**$ 16,009**	$ 21,178		**$ 15,145**	**$ 15,796**	**$ 16,141**
745	E	BOSTON POST RD	$841,500	5 3-BR Townhomes	$ 7,500,000	$ (2,422)	$ 12,723	$ 39,722	**$ 42,144**	$ 68,330		**$ 55,607**	$ 38,910	**$ 41,332**	$ 45,030		**$ 32,307**	$ 40,029	**$ 42,451**	$ 52,945		**$ 40,222**	**$ 41,976**	**$ 42,712**
804	E	BOSTON POST RD	$876,100	3 3-BR Townhomes	$ 4,500,000	$ 1,072	$ 13,247	$ 22,908	**$ 21,836**	$ 40,998		**$ 27,751**	$ 22,365	**$ 21,293**	$ 27,018		**$ 13,771**	$ 23,115	**$ 22,043**	$ 31,767		**$ 18,520**	**$ 21,724**	**$ 20,014**
816	E	BOSTON POST RD	$455,300	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (1,394)	$ 6,884	$ 20,859	**$ 22,253**	$ 40,886		**$ 34,002**	$ 20,596	**$ 21,990**	$ 27,807		**$ 20,923**	$ 21,240	**$ 22,634**	$ 32,094		**$ 25,210**	**$ 22,292**	**$ 26,712**
910	E	BOSTON POST RD	$821,400	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 1,833	$ 12,420	$ 18,810	**$ 16,977**	$ 40,774		**$ 28,354**	$ 18,827	**$ 16,994**	$ 28,596		**$ 16,176**	$ 19,365	**$ 17,532**	$ 32,421		**$ 20,001**	**$ 17,167**	**$ 21,511**
916	E	BOSTON POST RD	$593,300	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (100)	$ 8,971	$ 18,810	**$ 18,910**	$ 40,774		**$ 31,803**	$ 18,827	**$ 18,927**	$ 28,596		**$ 19,625**	$ 19,365	**$ 19,465**	$ 32,421		**$ 23,450**	**$ 19,101**	**$ 24,960**
931	E	BOSTON POST RD	$747,500	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 1,343	$ 11,302	$ 18,810	**$ 17,467**	$ 40,774		**$ 29,472**	$ 18,827	**$ 17,484**	$ 28,596		**$ 17,294**	$ 19,365	**$ 18,022**	$ 32,421		**$ 21,119**	**$ 17,658**	**$ 22,628**
946	E	BOSTON POST RD	$1,162,300	3 2-BR Townhomes + 2 3-BR Townhomes	$ 6,300,000	$ 1,121	$ 17,574	$ 33,333	**$ 32,213**	$ 67,994		**$ 50,420**	$ 33,276	**$ 32,155**	$ 47,397		**$ 29,823**	$ 34,103	**$ 32,983**	$ 53,926		**$ 36,352**	**$ 32,450**	**$ 38,865**
951	E	BOSTON POST RD	$759,000	5 3-BR Townhomes	$ 7,500,000	$ (3,309)	$ 11,476	$ 39,722	**$ 43,031**	$ 68,330		**$ 56,854**	$ 38,910	**$ 42,219**	$ 45,030		**$ 33,554**	$ 40,029	**$ 43,338**	$ 52,945		**$ 41,469**	**$ 42,863**	**$ 43,959**
964	E	BOSTON POST RD	$535,200	2 3-BR Townhomes	$ 3,000,000	$ 180	$ 8,092	$ 15,272	**$ 15,092**	$ 27,332		**$ 19,240**	$ 14,910	**$ 14,730**	$ 18,012		**$ 9,920**	$ 15,410	**$ 15,230**	$ 21,178		**$ 13,086**	**$ 15,017**	**$ 14,082**
1214	E	BOSTON POST RD	$829,300	3 2-BR Townhomes + 2 3-BR Townhomes	$ 6,300,000	$ (1,313)	$ 12,539	$ 33,333	**$ 34,647**	$ 67,994		**$ 55,455**	$ 33,276	**$ 34,589**	$ 47,397		**$ 34,858**	$ 34,103	**$ 35,417**	$ 53,926		**$ 41,387**	**$ 34,884**	**$ 43,900**
1275	E	BOSTON POST RD	$810,500	3 2-BR Townhomes + 1 3-BR Townhome	$ 4,800,000	$ 324	$ 12,255	$ 24,397	**$ 24,073**	$ 54,328		**$ 42,073**	$ 24,513	**$ 24,189**	$ 38,391		**$ 26,136**	$ 25,195	**$ 24,871**	$ 43,337		**$ 31,082**	**$ 24,378**	**$ 33,097**
313		HALSTEAD AVE	$1,108,600	3 2-BR Townhomes + 2 3-BR Townhomes	$ 6,300,000	$ 866	$ 16,762	$ 33,333	**$ 32,467**	$ 67,994		**$ 51,232**	$ 33,276	**$ 32,410**	$ 47,397		**$ 30,635**	$ 34,103	**$ 33,237**	$ 53,926		**$ 37,164**	**$ 32,705**	**$ 39,677**
324		HALSTEAD AVE	$1,539,200	2 2-BR Townhomes + 4 3-BR Townhomes	$ 8,200,000	$ 1,838	$ 23,273	$ 43,408	**$ 41,570**	$ 81,772		**$ 58,499**	$ 42,936	**$ 41,098**	$ 55,614		**$ 32,341**	$ 44,084	**$ 42,247**	$ 64,188		**$ 40,915**	**$ 41,638**	**$ 43,919**
480		HALSTEAD AVE	$353,900	3 3-BR Townhomes	$ 4,500,000	$ (2,601)	$ 5,351	$ 22,908	**$ 25,509**	$ 40,998		**$ 35,647**	$ 22,365	**$ 24,966**	$ 27,018		**$ 21,667**	$ 23,115	**$ 25,716**	$ 31,767		**$ 26,416**	**$ 25,397**	**$ 27,910**
500		HALSTEAD AVE	$894,700	1 2-BR Townhome + 4 3-BR Townhomes	$ 7,100,000	$ (1,731)	$ 13,528	$ 37,593	**$ 39,323**	$ 68,218		**$ 54,690**	$ 37,032	**$ 38,763**	$ 45,819		**$ 32,291**	$ 38,054	**$ 39,785**	$ 53,272		**$ 39,744**	**$ 39,290**	**$ 42,242**
530		HALSTEAD AVE	$634,900	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ 360	$ 9,600	$ 18,810	**$ 18,450**	$ 40,774		**$ 31,174**	$ 18,827	**$ 18,467**	$ 28,596		**$ 18,996**	$ 19,365	**$ 19,005**	$ 32,421		**$ 22,821**	**$ 18,640**	**$ 24,331**
540		HALSTEAD AVE	$500,300	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (781)	$ 7,565	$ 18,810	**$ 19,591**	$ 40,774		**$ 33,209**	$ 18,827	**$ 19,608**	$ 28,596		**$ 21,031**	$ 19,365	**$ 20,146**	$ 32,421		**$ 24,856**	**$ 19,781**	**$ 26,366**
558		HALSTEAD AVE	$334,800	2 3-BR Townhomes	$ 3,000,000	$ (881)	$ 5,062	$ 15,272	**$ 16,153**	$ 27,332		**$ 22,270**	$ 14,910	**$ 15,791**	$ 18,012		**$ 12,950**	$ 15,410	**$ 16,291**	$ 21,178		**$ 16,116**	**$ 16,078**	**$ 17,112**
606		HALSTEAD AVE	$412,400	2 3-BR Townhomes	$ 3,000,000	$ (561)	$ 6,235	$ 15,272	**$ 15,833**	$ 27,332		**$ 21,097**	$ 14,910	**$ 15,471**	$ 18,012		**$ 11,777**	$ 15,410	**$ 15,971**	$ 21,178		**$ 14,943**	**$ 15,759**	**$ 15,939**
641		HALSTEAD AVE	$475,300	2 2-BR Townhomes + 4 3-BR Townhomes	$ 8,200,000	$ (5,548)	$ 7,187	$ 43,408	**$ 48,956**	$ 81,772		**$ 74,585**	$ 42,936	**$ 48,484**	$ 55,614		**$ 48,427**	$ 44,084	**$ 49,633**	$ 64,188		**$ 57,001**	**$ 49,024**	**$ 60,005**
426		UNION AVE	$564,500	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (594)	$ 8,535	$ 20,859	**$ 21,453**	$ 40,886		**$ 32,351**	$ 20,596	**$ 21,190**	$ 27,807		**$ 19,272**	$ 21,240	**$ 21,834**	$ 32,094		**$ 23,559**	**$ 21,492**	**$ 25,060**

Category 2: Existing Commercial Properties Redeveloped As Mixed Use Developments.

Fiscal Impact of Existing Uses

On **Table 5**, we calculate the fiscal impact on the Village and the school districts from the existing development on these 11 properties. The fiscal impact of these properties on the Village is generally positive, though one sparsely developed property yields a negative impact. For the school districts, however, these properties yield substantial fiscal gain because they include no children.

Net Fiscal Impact of Redevelopment

On **Table 6**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 5.

Looking altogether at the ten properties in this category in Mamaroneck SD, we observe:

- Redevelopment of these ten properties generally yield neutral results for the Village government—the average net fiscal impact is positive for five properties and negative for the other five.

- For Mamaroneck SD, the results are similarly mixed. Redevelopment of five properties results in average positive net fiscal impact for the School District; redevelopment of the other five yields average negative net fiscal impact. We should note that where the anticipated redevelopment includes a large share of two-bedroom apartments, the average negative net fiscal impact is larger.

Similarly, for the one property in this category in Rye Neck SD, we observe that the average net fiscal impact is modestly negative for both the Village and the school district.

Table 5. Fiscal Impact of Existing Use—Category 2: Commercial Properties Redeveloping As Mixed Use

					Current Use Village Revenue									Current Use Village Expense						Current Use School District		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Commercial Properties Redeveloped As Mixed Use (11)																						
Mamaroneck SD (10)																						
100	W	BOSTON POST RD	7,585	$1,120,000	$ 6,766	$-	$ 138	$ 193	$ 773	$-	$ 83	$ 488	$ 8,440	$ 3,565	$ 712	$-	$ 133	$ 4,410	**$ 4,030**	$ 14,986	$ -	**$ 14,986**
115		HALSTEAD AVE	10,045	$900,000	$ 5,437	$-	$ 111	$ 155	$ 621	$-	$ 66	$ 646	$ 7,036	$ 4,722	$ 943	$-	$ 175	$ 5,840	**$ 1,196**	$ 12,042	$ -	**$ 12,042**
142		MAMARONECK AVE	10,355	$920,000	$ 5,558	$-	$ 113	$ 158	$ 635	$-	$ 68	$ 666	$ 7,198	$ 4,867	$ 972	$-	$ 181	$ 6,020	**$ 1,178**	$ 12,310	$ -	**$ 12,310**
152		MAMARONECK AVE	5,486	$910,000	$ 5,498	$-	$ 112	$ 157	$ 628	$-	$ 67	$ 353	$ 6,814	$ 2,579	$ 515	$-	$ 96	$ 3,189	**$ 3,624**	$ 12,176	$ -	**$ 12,176**
239		MAMARONECK AVE	24,424	$3,050,000	$18,426	$-	$ 375	$ 525	$ 2,105	$-	$ 225	$ 1,570	$ 23,226	$ 11,480	$ 2,293	$-	$ 427	$ 14,200	**$ 9,026**	$ 40,809	$ -	**$ 40,809**
271		MAMARONECK AVE	17,206	$1,735,000	$10,482	$-	$ 213	$ 299	$ 1,197	$-	$ 128	$ 1,106	$ 13,425	$ 8,088	$ 1,615	$-	$ 301	$ 10,003	**$ 3,422**	$ 23,214	$ -	**$ 23,214**
242		MAMARONECK AVE	20,052	$3,580,000	$21,628	$-	$ 440	$ 616	$ 2,470	$-	$ 264	$ 1,289	$ 26,708	$ 9,425	$ 1,882	$-	$ 350	$ 11,658	**$ 15,050**	$ 47,900	$ -	**$ 47,900**
418		MAMARONECK AVE	9,595	$1,310,000	$ 7,914	$-	$ 161	$ 226	$ 904	$-	$ 97	$ 617	$ 9,918	$ 4,510	$ 901	$-	$ 168	$ 5,578	**$ 4,340**	$ 17,528	$ -	**$ 17,528**
410-416		MAMARONECK AVE	7,785	$1,430,000	$ 8,639	$-	$ 176	$ 246	$ 987	$-	$ 105	$ 500	$ 10,654	$ 3,659	$ 731	$-	$ 136	$ 4,526	**$ 6,128**	$ 19,133	$ -	**$ 19,133**
124		PALMER AVE	25,054	$5,020,000	$30,328	$-	$ 617	$ 864	$ 3,464	$-	$ 370	$ 1,610	$ 37,254	$ 11,776	$ 2,352	$-	$ 438	$ 14,566	**$ 22,688**	$ 67,168	$ -	**$ 67,168**
Rye Neck SD (1)																						
1521	E	BOSTON POST RD	58,126	$833,600	$ 5,036	$-	$ 103	$ 144	$ 575	$-	$ 61	$ 3,736	$ 9,655	$ 27,322	$ 5,456	$-	$ 1,015	$ 33,793	**$(24,138)**	$ 12,604	$ -	**$ 12,604**

Table 6. Net Fiscal Impact from Change in Use—Category 2: Commercial Properties Redeveloping As Mixed Use

								Adjusted Rutgers Model				Local School Attraction				Non-Householder Population				Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (10)																					
100	W	BOSTON POST RD	$1,120,000	3,000 SF Restaurant & 14 Parking Spaces First Floor; 12 1BR Apartments	$ 3,220,000	$ 4,030	$ 14,986	$ 2,271	$ (1,759)	$ 16,374	$ 1,388	$ 8,977	$ 4,947	$ 40,146	$ 25,160	$ 5,727	$ 1,697	$ 11,094	$ (3,892)	$ 1,628	$ 7,552
115		HALSTEAD AVE	$900,000	3,000 SF 1st Floor Retail/Rear Parking--21 Spaces; 21 1BR Apartments	$ 4,575,000	$ 1,196	$ 12,042	$ 157	$ (1,039)	$ 19,623	$ 7,581	$ 11,891	$ 10,695	$ 61,224	$ 49,182	$ 6,203	$ 5,007	$ 10,383	$ (1,659)	$ 4,888	$ 18,368
142		MAMARONECK AVE	$920,000	5,000 SF 1st Floor Retail/Rear Parking--16 Spaces; 14 Apartments--10 1BR; 4 2BR	$ 4,150,000	$ 1,178	$ 12,310	$ 4,270	$ 3,093	$ 12,836	$ 526	$ 10,454	$ 9,276	$ 21,994	$ 9,684	$ 6,046	$ 4,869	$ (17,092)	$ (29,402)	$ 5,746	$ (6,397)
152		MAMARONECK AVE	$910,000	1,500 SF 1st Floor Retail/Rear Parking--11 Spaces; 11 1BR Apartments	$ 2,375,000	$ 3,624	$ 12,176	$ (39)	$ (3,664)	$ 9,992	$ (2,184)	$ 6,107	$ 2,483	$ 31,783	$ 19,607	$ 3,128	$ (496)	$ 5,152	$ (7,024)	$ (559)	$ 3,467
239		MAMARONECK AVE	$3,050,000	5,000 SF 1st Floor Retail/Rear Parking--60 Spaces; 48 Apartments--24 1BR; 24 2BR	$ 11,100,000	$ 9,026	$ 40,809	$ (8,343)	$ (17,369)	$ (36,330)	$ (77,139)	$ 8,639	$ (387)	$ (52,698)	$ (93,507)	$ (8,053)	$ (17,079)	$(200,058)	$(240,867)	$ (11,612)	$ (137,171)
271		MAMARONECK AVE	$1,735,000	5,000 SF 1st Floor Retail/Rear Parking--38 Spaces; 32 Apartments--20 1BR; 12 2BR	$ 7,700,000	$ 3,422	$ 23,214	$ (1,809)	$ (5,231)	$ (5,242)	$ (28,456)	$ 11,153	$ 7,731	$ 2,422	$ (20,792)	$ 640	$ (2,782)	$ (90,626)	$(113,840)	$ (94)	$ (54,363)
242		MAMARONECK AVE	$3,580,000	Current Bank In Front (6,774 SF)/Rear Parking--47 Spaces; 38 Apartments--20 1BR; 18 2BR	$ 11,130,000	$ 15,050	$ 47,900	$ 1,959	$ (13,091)	$ 6,322	$ (41,578)	$ 15,813	$ 763	$ (1,992)	$ (49,892)	$ 2,752	$ (12,298)	$(117,354)	$(165,254)	$ (8,209)	$ (85,575)
418		MAMARONECK AVE	$1,310,000	Current Commercial Building In Front (6,327 SF)/Rear Parking--23 Spaces; 18 1 BR Apartments	$ 5,335,000	$ 4,340	$ 17,528	$ 110	$ (4,229)	$ 24,026	$ 6,498	$ 10,168	$ 5,829	$ 59,684	$ 42,156	$ 5,293	$ 953	$ 16,106	$ (1,422)	$ 851	$ 15,744
410-416		MAMARONECK AVE	$1,430,000	Current Commercial Building In Front (5,076 SF)/Rear Parking--16 Spaces; 15 1 BR Apartments	$ 4,055,000	$ 6,128	$ 19,133	$ 2,603	$ (3,525)	$ 24,548	$ 5,415	$ 10,985	$ 4,857	$ 54,263	$ 35,130	$ 6,922	$ 795	$ 17,948	$ (1,185)	$ 709	$ 13,120
124		PALMER AVE	$5,020,000	10,000 SF 1st Floor Commercial/ Rear Parking--46 Spaces; 40 Apartments--28 1BR; 12 2BR	$ 10,600,000	$ 22,688	$ 67,168	$ 4,796	$ (17,892)	$ 17,716	$ (49,452)	$ 22,228	$ (460)	$ 41,228	$ (25,940)	$ 9,548	$ (13,139)	$ (71,188)	$(138,356)	$ (10,497)	$ (71,249)
Rye Neck SD (1)																					
1521	E	BOSTON POST RD	$833,600	Retain Bank; Add 32 Unit Apartment--1 & 2 BR	$ 7,233,600	$ (24,138)	$ 12,604	$ (36,893)	$ (12,755)	$ (13,748)	$ (26,352)	$ (22,122)	$ 2,016	$ (20)	$ (12,624)	$ (21,412)	$ 2,726	$ 17,916	$ 5,312	$ (2,671)	$ (11,221)

Category 3: Existing Commercial Properties Redeveloped As Apartment Complexes.

Fiscal Impact of Existing Uses

On **Table 7**, we calculate the fiscal impact on the Village and the school districts from the existing development on these 18 properties. As likely targets for redevelopment, these properties have comparatively low market values and property tax yield. As a result, the fiscal impacts on the Village from these properties are generally negative. For the school districts, however, these properties yield substantial fiscal gain because they include no children.

Net Fiscal Impact of Redevelopment

On **Table 8**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 7.

Looking altogether at the nine properties in this category in Mamaroneck SD, we observe:

- Redevelopment of all nine properties yields modest average changes in fiscal impact for the Village—average net positive results for six properties; average net negative results for the other three properties;
- For Mamaroneck SD, the four properties assumed to redevelop as one-bedroom apartments result in average positive fiscal impacts;
- For the five properties assumed to include both one- and two-bedroom apartments, the average results for Mamaroneck SD are significantly negative. This is not surprising since these properties currently include no school children.

For the nine properties in this category in Rye Neck SD, the average net fiscal impact results for the school district are modestly negative for all nine properties, while the Village sees universally positive average fiscal impact.

Table 7. Fiscal Impact of Existing Use—Category 3: Commercial Properties Redeveloping As Apartments

					Current Use Village Revenue									Current Use Village Expense						Current Use School District		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Commercial Properties Redeveloped As Apartments (18)																						
Mamaroneck SD (9)																						
135		HALSTEAD AVE	6,778	$470,000	$ 2,839	$-	$ 58	$ 81	$ 324	$-	$ 35	$ 436	$ 3,773	$ 3,186	$ 636	$-	$ 118	$ 3,941	$ (168)	$ 6,289	$ -	$ 6,289
245		HALSTEAD AVE	6,070	$440,000	$ 2,658	$-	$ 54	$ 76	$ 304	$-	$ 32	$ 390	$ 3,514	$ 2,853	$ 570	$-	$ 106	$ 3,529	$ (15)	$ 5,887	$ -	$ 5,887
273		HALSTEAD AVE	17,346	$670,000	$ 4,048	$-	$ 82	$ 115	$ 462	$-	$ 49	$ 1,115	$ 5,872	$ 8,153	$ 1,628	$-	$ 303	$ 10,085	$ (4,212)	$ 8,965	$ -	$ 8,965
132	E	PROSPECT AVE	8,544	$965,000	$ 5,830	$-	$ 119	$ 166	$ 666	$-	$ 71	$ 549	$ 7,401	$ 4,016	$ 802	$-	$ 149	$ 5,117	$ 2,284	$ 12,912		$ 12,912
145		LIBRARY LN	5,146	$410,000	$ 2,477	$-	$ 50	$ 71	$ 283	$-	$ 30	$ 331	$ 3,242	$ 2,419	$ 483	$-	$ 90	$ 2,992	$ 250	$ 5,486	$ -	$ 5,486
46		MADISON ST	10,159	$310,000	$ 1,873	$-	$ 38	$ 53	$ 214	$-	$ 23	$ 653	$ 2,854	$ 4,775	$ 954	$-	$ 177	$ 5,906	$ (3,052)	$ 4,148	$ -	$ 4,148
827-859/806		MAMARONECK AVE/LESTER AVE	45,061	$1,431,000	$ 8,645	$-	$ 176	$ 246	$ 987	$-	$ 105	$ 2,896	$ 13,057	$ 21,181	$ 4,230	$-	$ 787	$ 26,198	$(13,141)	$ 19,147	$ -	$ 19,147
147		PALMER AVE	14,996	$740,000	$ 4,471	$-	$ 91	$ 127	$ 511	$-	$ 55	$ 964	$ 6,218	$ 7,049	$ 1,408	$-	$ 262	$ 8,718	$ (2,500)	$ 9,901	$ -	$ 9,901
1053/1047-1101		W BOSTON POST RD/OLD BOSTON POST RD	84,769	$3,500,000	$21,145	$-	$ 431	$ 603	$ 2,415	$-	$ 258	$ 5,449	$ 30,300	$ 39,845	$ 7,957	$-	$ 1,481	$ 49,283	$(18,983)	$ 46,830	$ -	$ 46,830
Rye Neck SD (9)																						
521	N	BARRY AVE	19,725	$281,200	$ 1,699	$-	$ 35	$ 48	$ 194	$-	$ 21	$ 1,268	$ 3,265	$ 9,272	$ 1,852	$-	$ 345	$ 11,468	$ (8,203)	$ 4,252	$ -	$ 4,252
444	E	BOSTON POST RD	25,740	$636,700	$ 3,847	$-	$ 78	$ 110	$ 439	$-	$ 47	$ 1,655	$ 6,175	$ 12,099	$ 2,416	$-	$ 450	$ 14,965	$ (8,789)	$ 9,627	$ -	$ 9,627
566	E	BOSTON POST RD	14,714	$470,400	$ 2,842	$-	$ 58	$ 81	$ 325	$-	$ 35	$ 946	$ 4,286	$ 6,916	$ 1,381	$-	$ 257	$ 8,554	$ (4,269)	$ 7,112	$ -	$ 7,112
767	E	BOSTON POST RD	18,720	$544,000	$ 3,287	$-	$ 67	$ 94	$ 375	$-	$ 40	$ 1,203	$ 5,066	$ 8,799	$ 1,757	$-	$ 327	$ 10,883	$ (5,818)	$ 8,225	$ -	$ 8,225
801	E	BOSTON POST RD	19,140	$551,700	$ 3,333	$-	$ 68	$ 95	$ 381	$-	$ 41	$ 1,230	$ 5,148	$ 8,997	$ 1,797	$-	$ 334	$ 11,128	$ (5,980)	$ 8,342	$ -	$ 8,342
1000	E	BOSTON POST RD	19,376	$556,100	$ 3,360	$-	$ 68	$ 96	$ 384	$-	$ 41	$ 1,245	$ 5,194	$ 9,108	$ 1,819	$-	$ 339	$ 11,265	$ (6,071)	$ 8,408	$ -	$ 8,408
1258	E	BOSTON POST RD	20,145	$370,300	$ 2,237	$-	$ 46	$ 64	$ 256	$-	$ 27	$ 1,295	$ 3,924	$ 9,469	$ 1,891	$-	$ 352	$ 11,712	$ (7,788)	$ 5,599	$ -	$ 5,599
1427	E	BOSTON POST RD	28,500	$662,100	$ 4,000	$-	$ 81	$ 114	$ 457	$-	$ 49	$ 1,832	$ 6,533	$ 13,396	$ 2,675	$-	$ 498	$ 16,569	$(10,036)	$ 10,011	$ -	$ 10,011
1514	E	BOSTON POST RD	22,046	$602,700	$ 3,641	$-	$ 74	$ 104	$ 416	$-	$ 44	$ 1,417	$ 5,696	$ 10,363	$ 2,069	$-	$ 385	$ 12,817	$ (7,121)	$ 9,113	$ -	$ 9,113

Table 8. Net Fiscal Impact from Change in Use—Category 3: Commercial Properties Redeveloping As Apartments

								Adjusted Rutgers Model				Local School Attraction				Non-Householder Population				Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (9)																					
135		HALSTEAD AVE	$470,000	17 1-BR Apartments	$ 2,975,000	$ (168)	$ 6,289	$ (3,994)	$ (3,827)	$ 6,137	$ (152)	$ 5,505	$ 5,673	$ 39,814	$ 33,525	$ 900	$ 1,068	$ (1,343)	$ (7,632)	$ 971	$ 8,581
245		HALSTEAD AVE	$440,000	15 1-BR Apartments	$ 2,625,000	$ (15)	$ 5,887	$ (3,525)	$ (3,510)	$ 5,415	$ (472)	$ 4,857	$ 4,872	$ 35,130	$ 29,243	$ 795	$ 809	$ (1,185)	$ (7,072)	$ 724	$ 7,233
273		HALSTEAD AVE	$670,000	38 Apartments--19 1-BR; 19 2-BR	$ 7,600,000	$ (4,212)	$ 8,965	$ (13,322)	$ (9,110)	$ (44,650)	$ (53,615)	$ 122	$ 4,335	$ (57,608)	$ (66,573)	$ (13,093)	$ (8,880)	$ (174,268)	$ (183,233)	$ (4,552)	$ (101,140)
132	E	PROSPECT AVE	$965,000	24 1-BR Apartments	$ 4,200,000	$ 2,284	$ 12,912	$ (5,639)	$ (7,924)	$ 8,664	$ (4,248)	$ 7,771	$ 5,487	$ 56,208	$ 43,296	$ 1,271	$ (1,013)	$ (1,896)	$ (14,808)	$ (1,150)	$ 8,080
145		LIBRARY LN	$410,000	12 1-BR Apartments	$ 2,100,000	$ 250	$ 5,486	$ (2,820)	$ (3,070)	$ 4,332	$ (1,154)	$ 3,886	$ 3,636	$ 28,104	$ 22,618	$ 636	$ 386	$ (948)	$ (6,434)	$ 317	$ 5,010
46		MADISON ST	$310,000	11 Apartments--6 1-BR; 5 2-BR	$ 2,175,000	$ (3,052)	$ 4,148	$ (3,741)	$ (689)	$ (11,389)	$ (15,537)	$ 356	$ 3,408	$ (12,818)	$ (16,966)	$ (3,392)	$ (340)	$ (45,939)	$ (50,087)	$ 793	$ (27,530)
827-859/806		MAMARONECK AVE/LESTER AVE	$1,431,000	30 Apartments--15 1-BR; 15 2-BR	$ 6,000,000	$ (13,141)	$ 19,147	$ (10,518)	$ 2,623	$ (35,250)	$ (54,397)	$ 96	$ 13,237	$ (45,480)	$ (64,627)	$ (10,336)	$ 2,804	$ (137,580)	$ (156,727)	$ 6,221	$ (91,917)
147		PALMER AVE	$740,000	28 Apartments--14 1-BR; 14 2-BR	$ 5,600,000	$ (2,500)	$ 9,901	$ (9,817)	$ (7,316)	$ (32,900)	$ (42,801)	$ 90	$ 2,590	$ (42,448)	$ (52,349)	$ (9,647)	$ (7,147)	$ (128,408)	$ (138,309)	$ (3,958)	$ (77,820)
1053/1047-1101		W BOSTON POST/OLD BOST. POST	$3,500,000	56 Apartments--28 1-BR; 28 2-BR	$ 11,200,000	$ (18,983)	$ 46,830	$ (19,633)	$ (650)	$ (65,800)	$ (112,630)	$ 180	$ 19,163	$ (84,896)	$ (131,726)	$ (19,295)	$ (311)	$ (256,816)	$ (303,646)	$ 6,067	$ (182,667)
Rye Neck SD (9)																					
521	N	BARRY AVE	$281,200	12 Apartments--6 1-BR; 6 2-BR	$ 2,400,000	$ (8,203)	$ 4,252	$ (4,783)	$ 3,420	$ (9,882)	$ (14,134)	$ 756	$ 8,959	$ (4,734)	$ (8,986)	$ 1,022	$ 9,226	$ 1,992	$ (2,260)	$ 7,202	$ (8,460)
444	E	BOSTON POST RD	$636,700	17 Apartments--9 1-BR; 8 2-BR	$ 3,375,000	$ (8,789)	$ 9,627	$ (6,660)	$ 2,129	$ (12,509)	$ (22,136)	$ 1,358	$ 10,147	$ (3,666)	$ (13,293)	$ 1,638	$ 10,428	$ 5,302	$ (4,325)	$ 7,568	$ (13,251)
566	E	BOSTON POST RD	$470,400	Convert to 20 Apts--10 1-BR; 10 2-BR	$ 4,000,000	$ (4,269)	$ 7,112	$ (7,972)	$ (3,703)	$ (16,470)	$ (23,582)	$ 1,260	$ 5,529	$ (7,890)	$ (15,002)	$ 1,704	$ 5,972	$ 3,320	$ (3,792)	$ 2,599	$ (14,126)
767	E	BOSTON POST RD	$544,000	11 Apartments--6 1-BR; 5 2-BR	$ 2,175,000	$ (5,818)	$ 8,225	$ (4,269)	$ 1,549	$ (7,568)	$ (15,793)	$ 980	$ 6,798	$ (1,299)	$ (9,524)	$ 1,127	$ 6,945	$ 4,306	$ (3,919)	$ 5,097	$ (9,746)
801	E	BOSTON POST RD	$551,700	11 Apartments--6 1-BR; 5 2-BR	$ 2,175,000	$ (5,980)	$ 8,342	$ (4,269)	$ 1,711	$ (7,568)	$ (15,910)	$ 980	$ 6,960	$ (1,299)	$ (9,641)	$ 1,127	$ 7,107	$ 4,306	$ (4,036)	$ 5,259	$ (9,862)
1000	E	BOSTON POST RD	$556,100	11 Apartments--6 1-BR; 5 2-BR	$ 2,175,000	$ (6,071)	$ 8,408	$ (4,269)	$ 1,802	$ (7,568)	$ (15,976)	$ 980	$ 7,051	$ (1,299)	$ (9,707)	$ 1,127	$ 7,198	$ 4,306	$ (4,102)	$ 5,350	$ (9,929)
1258	E	BOSTON POST RD	$370,300	12 Apartments--6 1-BR; 6 2-BR	$ 2,400,000	$ (7,788)	$ 5,599	$ (4,783)	$ 3,005	$ (9,882)	$ (15,481)	$ 756	$ 8,544	$ (4,734)	$ (10,333)	$ 1,022	$ 8,810	$ 1,992	$ (3,607)	$ 6,786	$ (9,807)
1427	E	BOSTON POST RD	$662,100	18 Apartments--9 1-BR; 9 2-BR	$ 3,600,000	$ (10,036)	$ 10,011	$ (7,175)	$ 2,862	$ (14,823)	$ (24,834)	$ 1,134	$ 11,170	$ (7,101)	$ (17,112)	$ 1,533	$ 11,570	$ 2,988	$ (7,023)	$ 8,534	$ (16,323)
1514	E	BOSTON POST RD	$602,700	14 Apartments--7 1-BR; 7 2-BR	$ 2,800,000	$ (7,121)	$ 9,113	$ (5,580)	$ 1,540	$ (11,529)	$ (20,642)	$ 882	$ 8,003	$ (5,523)	$ (14,636)	$ 1,193	$ 8,313	$ 2,324	$ (6,789)	$ 5,952	$ (14,022)

Category 4: Existing Residential Rental Properties Redeveloping As For-Sale Townhomes

Fiscal Impact of Existing Uses

On **Table 9**, we estimate the demographic characteristics of the existing uses on these 59 properties. As noted above, these characteristics were developed by examining the block level data on occupied housing units and population provided by the 2010 census and allocating that data to individual housing units on each block.

On **Table 10**, we calculate the fiscal impact on the Village and the school districts from the existing development on these 59 properties. Again, given that these properties are potentially subject to redevelopment, the lower assessed values and current resident population service needs yield mostly negative fiscal impacts for the Village and the school districts.

Table 9. Demographic Characteristics of Category 4--Existing Residential Rental Properties

Address	Dir	Street	Square Feet of Land	Current Assessment	Estimated Current Housing Units	Estimated Current Population	Estimated Current SAC Elementary	Estimated Current SAC Middle/High	Total Estimated Current SAC
Current Residential Rental Properties Redeveloped As Townhomes for Sale (59)									
Mamaroneck SD (43)									
406-418	W	BOSTON POST RD	26,811	$1,360,000	4	9.50	0.45	1.80	2.25
829-841	W	BOSTON POST RD	20,656	$960,000	3	6.53	0.37	0.69	1.05
921-929	W	BOSTON POST RD	9,904	$1,345,000	6	13.05	0.73	1.38	2.11
731	W	BOSTON POST RD	6,201	$650,000	2	4.35	0.24	0.46	0.70
737	W	BOSTON POST RD	5,941	$369,000	3	6.53	0.37	0.69	1.05
903	W	BOSTON POST RD	9,573	$710,000	2	4.35	0.24	0.46	0.70
200-212	W	BOSTON POST RD	10,438	$1,355,000	6	11.30	0.68	0.57	1.25
124		CENTER AVE	5,007	$653,000	4	14.24	1.33	1.43	2.76
141		CENTER AVE	5,057	$410,000	2	8.10	0.62	0.94	1.56
147		CENTER AVE	5,083	$464,000	2	8.10	0.62	0.94	1.56
173		CENTER AVE	5,083	$530,000	4	16.20	1.25	1.87	3.12
205		CENTER AVE	5,058	$449,000	3	12.15	0.94	1.40	2.34
221		CENTER AVE	10,301	$408,000	3	12.15	0.94	1.40	2.34
253		CENTER AVE	5,050	$440,000	2	8.10	0.62	0.94	1.56
254		CENTER AVE	18,394	$464,000	3	10.68	1.00	1.07	2.07
176-214		CENTER AVE	14,903	$1,037,000	6	21.36	2.00	2.14	4.14
116		ELLIOT AVE	5,493	$470,000	2	4.63	0.25	0.46	0.71
64		GRAND ST	7,906	$435,000	3	8.21	0.70	0.88	1.58
190		GRAND ST	6,927	$350,000	1	3.05	0.24	0.32	0.55
201		GRAND ST	10,527	$310,000	2	5.52	0.38	0.42	0.80
209		GRAND ST	9,633	$371,000	2	5.52	0.38	0.42	0.80
211		GRAND ST	15,228	$338,000	2	5.52	0.38	0.42	0.80
147		MADISON ST	5,106	$415,000	2	6.48	0.77	0.80	1.57
201		MADISON ST	5,158	$467,000	2	6.48	0.77	0.80	1.57
215		MADISON ST	5,174	$297,000	1	3.24	0.38	0.40	0.78
818		MAMARONECK AVE	16,955	$1,606,000	3	6.94	0.38	0.69	1.06
324		MT PLEASANT AVE	5,642	$940,000	2	9.26	1.22	0.78	2.00
339		MT PLEASANT AVE	8,348	$1,250,000	4	9.51	1.14	1.22	2.36
1035		OLD BOSTON POST RD	17,288	$1,030,000	1	2.18	0.12	0.23	0.35
665		OLD WHITE PLAINS RD	11,554	$630,000	2	6.83	0.90	0.43	1.33
741-751		OLD WHITE PLAINS RD	15,319	$1,353,000	11	30.09	2.57	3.24	5.81
143		PROSPECT AVE	10,379	$1,400,000	6	17.06	1.24	1.79	3.03
223		VALLEY PL	5,082	$395,000	2	5.22	0.31	0.58	0.89
233		VALLEY PL	11,970	$385,000	2	5.22	0.31	0.58	0.89
407		WARD AVE	12,073	$455,000	1	2.61	0.16	0.29	0.45
401-403		WARD AVE	16,957	$1,350,000	3	7.83	0.48	0.87	1.35
4		STAUB CT	12,256	$690,000	7	14.30	1.16	1.28	2.43
243		WASHINGTON ST	9,362	$470,000	3	9.15	0.71	0.95	1.65
265		WASHINGTON ST	5,043	$340,000	2	6.10	0.47	0.63	1.10
177-197		WASHINGTON ST	24,903	$750,000	2	6.10	0.47	0.63	1.10
133		WAVERLY AVE	6,271	$499,000	3	10.68	1.00	1.07	2.07
244		WAVERLY AVE	5,486	$400,000	2	6.45	0.80	0.70	1.50
250		WAVERLY AVE	5,292	$335,000	2	6.45	0.80	0.70	1.50
Rye Neck SD (16)									
629	N	BARRY AVE	9,222	$683,600	4	11.17	1.16	0.22	1.38
637	N	BARRY AVE	9,665	$453,400	2	5.59	0.58	0.11	0.69
709	N	BARRY AVE	8,249	$547,100	2	6.48	0.29	0.67	0.96
408	E	BOSTON POST RD	11,323	$500,000	1	1.38	0.03	0.05	0.08
1131	E	BOSTON POST RD	6,288	$441,300	2	5.02	0.50	0.42	0.92
703		GROVE ST	5,750	$327,300	1	2.79	0.29	0.06	0.34
429		HALSTEAD AVE	11,216	$497,400	1	2.77	0.19	0.18	0.36
441		HALSTEAD AVE	11,839	$596,300	3	8.32	0.56	0.53	1.09
458		HALSTEAD AVE	8,047	$638,700	2	5.46	0.22	0.48	0.69
466		HALSTEAD AVE	7,969	$416,700	1	2.73	0.11	0.24	0.35
474		HALSTEAD AVE	6,561	$343,400	2	5.46	0.22	0.48	0.69
507		HALSTEAD AVE	5,758	$445,500	2	5.06	0.34	0.49	0.83
515		HALSTEAD AVE	5,233	$417,300	1	2.53	0.17	0.25	0.42
614		HALSTEAD AVE	6,677	$417,200	1	2.05	0.14	0.12	0.25
621		HALSTEAD AVE	8,390	$447,900	4	12.00	1.45	1.09	2.54
624		HALSTEAD AVE	10,404	$506,400	2	4.10	0.27	0.24	0.51

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Table 10. Fiscal Impact of Existing Use: Category 4--Existing Rental Residential Redeveloping As Townhomes For-Sale

					Current Use Village Revenue									Current Use Village Expense						Current Use Mamaroneck SD		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Residential Rental Properties Redeveloped As Townhomes for Sale (59)																						
Mamaroneck SD (43)																						
406-418	W	BOSTON POST RD	26,811	$1,360,000	$ 8,216	$1,359	$ 167	$ 234	$ 938	$178	$ 100	$ 1,064	$ 12,257	$ 3,990	$ 2,517	$250	$ 7,477	$ 14,233	$ (1,976)	$ 18,197	$ 45,758	$ (27,561)
829-841	W	BOSTON POST RD	20,656	$960,000	$ 5,800	$ 933	$ 118	$ 165	$ 662	$ 83	$ 71	$ 731	$ 8,564	$ 2,741	$ 1,939	$117	$ 5,137	$ 9,934	$ (1,370)	$ 12,845	$ 21,428	$ (8,583)
921-929	W	BOSTON POST RD	9,904	$1,345,000	$ 8,126	$1,867	$ 165	$ 232	$ 928	$166	$ 99	$ 1,462	$ 13,045	$ 5,483	$ 930	$234	$ 10,273	$ 16,919	$ (3,874)	$ 17,996	$ 42,856	$ (24,860)
731	W	BOSTON POST RD	6,201	$650,000	$ 3,927	$ 622	$ 80	$ 112	$ 449	$ 55	$ 48	$ 487	$ 5,780	$ 1,828	$ 582	$ 78	$ 3,424	$ 5,912	$ (132)	$ 8,697	$ 14,285	$ (5,588)
737	W	BOSTON POST RD	5,941	$369,000	$ 2,229	$ 933	$ 45	$ 64	$ 255	$ 83	$ 27	$ 731	$ 4,368	$ 2,741	$ 558	$117	$ 5,137	$ 8,553	$ (4,185)	$ 4,937	$ 21,428	$ (16,491)
903	W	BOSTON POST RD	9,573	$710,000	$ 4,289	$ 622	$ 87	$ 122	$ 490	$ 55	$ 52	$ 487	$ 6,206	$ 1,828	$ 899	$ 78	$ 3,424	$ 6,229	$ (22)	$ 9,500	$ 14,285	$ (4,786)
200-212	W	BOSTON POST RD	10,438	$1,355,000	$ 8,186	$1,616	$ 167	$ 233	$ 935	$ 98	$ 100	$ 1,265	$ 12,601	$ 4,745	$ 980	$138	$ 8,892	$ 14,756	$ (2,155)	$ 18,130	$ 25,355	$ (7,225)
124		CENTER AVE	5,007	$653,000	$ 3,945	$2,036	$ 80	$ 112	$ 451	$218	$ 48	$ 1,595	$ 8,485	$ 5,980	$ 470	$307	$ 11,205	$ 17,962	$ (9,477)	$ 8,737	$ 56,169	$ (47,431)
141		CENTER AVE	5,057	$410,000	$ 2,477	$1,159	$ 50	$ 71	$ 283	$123	$ 30	$ 907	$ 5,100	$ 3,403	$ 475	$173	$ 6,376	$ 10,427	$ (5,326)	$ 5,486	$ 31,712	$ (26,226)
147		CENTER AVE	5,083	$464,000	$ 2,803	$1,159	$ 57	$ 80	$ 320	$123	$ 34	$ 907	$ 5,484	$ 3,403	$ 477	$173	$ 6,376	$ 10,429	$ (4,945)	$ 6,208	$ 31,712	$ (25,503)
173		CENTER AVE	5,083	$530,000	$ 3,202	$2,317	$ 65	$ 91	$ 366	$246	$ 39	$ 1,815	$ 8,141	$ 6,805	$ 477	$346	$ 12,752	$ 20,381	$(12,239)	$ 7,091	$ 63,424	$ (56,332)
205		CENTER AVE	5,058	$449,000	$ 2,713	$1,738	$ 55	$ 77	$ 310	$185	$ 33	$ 1,361	$ 6,472	$ 5,104	$ 475	$260	$ 9,564	$ 15,403	$ (8,931)	$ 6,008	$ 47,568	$ (41,560)
221		CENTER AVE	10,301	$408,000	$ 2,465	$1,738	$ 50	$ 70	$ 282	$185	$ 30	$ 1,361	$ 6,181	$ 5,104	$ 967	$260	$ 9,564	$ 15,895	$ (9,714)	$ 5,459	$ 47,568	$ (42,109)
253		CENTER AVE	5,050	$440,000	$ 2,658	$1,159	$ 54	$ 76	$ 304	$123	$ 32	$ 907	$ 5,313	$ 3,403	$ 474	$173	$ 6,376	$ 10,426	$ (5,113)	$ 5,887	$ 31,712	$ (25,825)
254		CENTER AVE	18,394	$464,000	$ 2,803	$1,527	$ 57	$ 80	$ 320	$164	$ 34	$ 1,196	$ 6,181	$ 4,485	$ 1,727	$230	$ 8,404	$ 14,846	$ (8,664)	$ 6,208	$ 42,126	$ (35,918)
176-214		CENTER AVE	14,903	$1,037,000	$ 6,265	$3,054	$ 128	$ 179	$ 716	$327	$ 76	$ 2,392	$ 13,136	$ 8,970	$ 1,399	$460	$ 16,808	$ 27,637	$(14,501)	$ 13,875	$ 84,253	$ (70,378)
116		ELLIOT AVE	5,493	$470,000	$ 2,839	$ 661	$ 58	$ 81	$ 324	$ 56	$ 35	$ 518	$ 4,572	$ 1,943	$ 516	$ 79	$ 3,640	$ 6,177	$ (1,604)	$ 6,289	$ 14,405	$ (8,117)
64		GRAND ST	7,906	$435,000	$ 2,628	$1,174	$ 54	$ 75	$ 300	$125	$ 32	$ 919	$ 5,307	$ 3,447	$ 742	$176	$ 6,459	$ 10,825	$ (5,518)	$ 5,820	$ 32,232	$ (26,412)
190		GRAND ST	6,927	$350,000	$ 2,114	$ 436	$ 43	$ 60	$ 242	$ 44	$ 26	$ 342	$ 3,307	$ 1,282	$ 650	$ 61	$ 2,401	$ 4,394	$ (1,088)	$ 4,683	$ 11,211	$ (6,528)
201		GRAND ST	10,527	$310,000	$ 1,873	$ 789	$ 38	$ 53	$ 214	$ 63	$ 23	$ 618	$ 3,672	$ 2,318	$ 988	$ 89	$ 4,344	$ 7,740	$ (4,068)	$ 4,148	$ 16,270	$ (12,122)
209		GRAND ST	9,633	$371,000	$ 2,241	$ 789	$ 46	$ 64	$ 256	$ 63	$ 27	$ 618	$ 4,105	$ 2,318	$ 904	$ 89	$ 4,344	$ 7,656	$ (3,551)	$ 4,964	$ 16,270	$ (11,306)
211		GRAND ST	15,228	$338,000	$ 2,042	$ 789	$ 42	$ 58	$ 233	$ 63	$ 25	$ 618	$ 3,871	$ 2,318	$ 1,429	$ 89	$ 4,344	$ 8,181	$ (4,310)	$ 4,522	$ 16,270	$ (11,747)
147		MADISON ST	5,106	$415,000	$ 2,507	$ 927	$ 51	$ 71	$ 286	$124	$ 31	$ 726	$ 4,723	$ 2,722	$ 479	$174	$ 5,101	$ 8,476	$ (3,753)	$ 5,553	$ 31,921	$ (26,369)
201		MADISON ST	5,158	$467,000	$ 2,821	$ 927	$ 57	$ 80	$ 322	$124	$ 34	$ 726	$ 5,092	$ 2,722	$ 484	$174	$ 5,101	$ 8,481	$ (3,389)	$ 6,248	$ 31,921	$ (25,673)
215		MADISON ST	5,174	$297,000	$ 1,794	$ 463	$ 37	$ 51	$ 205	$ 62	$ 22	$ 363	$ 2,997	$ 1,361	$ 486	$ 87	$ 2,550	$ 4,484	$ (1,487)	$ 3,974	$ 15,961	$ (11,987)
818		MAMARONECK AVE	16,955	$1,606,000	$ 9,702	$ 992	$ 198	$ 277	$ 1,108	$ 84	$ 118	$ 777	$ 13,256	$ 2,914	$ 1,592	$118	$ 5,460	$ 10,083	**$ 3,173**	$ 21,488	$ 21,608	$ (120)
324		MT PLEASANT AVE	5,642	$940,000	$ 5,679	$1,325	$ 116	$ 162	$ 649	$158	$ 69	$ 1,037	$ 9,194	$ 3,891	$ 530	$222	$ 7,290	$ 11,932	$ (2,738)	$ 12,577	$ 40,674	$ (28,097)
339		MT PLEASANT AVE	8,348	$1,250,000	$ 7,552	$1,360	$ 154	$ 215	$ 863	$186	$ 92	$ 1,065	$ 11,486	$ 3,993	$ 784	$262	$ 7,483	$ 12,522	$ (1,036)	$ 16,725	$ 48,008	$ (31,283)
1035		OLD BOSTON POST RD	17,288	$1,030,000	$ 6,223	$ 311	$ 127	$ 177	$ 711	$ 28	$ 76	$ 244	$ 7,896	$ 914	$ 1,623	$ 39	$ 1,712	$ 4,288	**$ 3,608**	$ 13,781	$ 7,143	$ 6,639
665		OLD WHITE PLAINS RD	11,554	$630,000	$ 3,806	$ 977	$ 77	$ 108	$ 435	$105	$ 46	$ 765	$ 6,321	$ 2,870	$ 1,085	$148	$ 5,378	$ 9,480	$ (3,159)	$ 8,429	$ 27,116	$ (18,686)
741-751		OLD WHITE PLAINS RD	15,319	$1,353,000	$ 8,174	$4,303	$ 166	$ 233	$ 934	$459	$ 100	$ 3,371	$ 17,740	$ 12,640	$ 1,438	$645	$ 23,684	$ 38,407	$(20,667)	$ 18,103	$ 118,184	$ (100,081)
143		PROSPECT AVE	10,379	$1,400,000	$ 8,458	$2,439	$ 172	$ 241	$ 966	$240	$ 103	$ 1,910	$ 14,529	$ 7,164	$ 974	$337	$ 13,423	$ 21,898	$ (7,368)	$ 18,732	$ 61,696	$ (42,964)
223		VALLEY PL	5,082	$395,000	$ 2,386	$ 747	$ 49	$ 68	$ 273	$ 70	$ 29	$ 585	$ 4,207	$ 2,193	$ 477	$ 99	$ 4,110	$ 6,879	$ (2,672)	$ 5,285	$ 18,077	$ (12,792)
233		VALLEY PL	11,970	$385,000	$ 2,326	$ 747	$ 47	$ 66	$ 266	$ 70	$ 28	$ 585	$ 4,135	$ 2,193	$ 1,124	$ 99	$ 4,110	$ 7,526	$ (3,390)	$ 5,151	$ 18,077	$ (12,926)
407		WARD AVE	12,073	$455,000	$ 2,749	$ 373	$ 56	$ 78	$ 314	$ 36	$ 34	$ 292	$ 3,932	$ 1,096	$ 1,133	$ 50	$ 2,054	$ 4,334	$ (402)	$ 6,088	$ 9,152	$ (3,064)
401-403		WARD AVE	16,957	$1,350,000	$ 8,156	$1,120	$ 166	$ 232	$ 932	$107	$ 100	$ 877	$ 11,689	$ 3,289	$ 1,592	$150	$ 6,162	$ 11,192	**$ 496**	$ 18,063	$ 27,455	$ (9,392)
4		STAUB CT	12,256	$690,000	$ 4,169	$2,046	$ 85	$ 119	$ 476	$192	$ 51	$ 1,602	$ 8,739	$ 6,008	$ 1,150	$270	$ 11,258	$ 18,686	$ (9,947)	$ 9,232	$ 49,516	$ (40,284)
243		WASHINGTON ST	9,362	$470,000	$ 2,839	$1,309	$ 58	$ 81	$ 324	$131	$ 35	$ 1,025	$ 5,802	$ 3,845	$ 879	$184	$ 7,204	$ 12,111	$ (6,309)	$ 6,289	$ 33,634	$ (27,346)
265		WASHINGTON ST	5,043	$340,000	$ 2,054	$ 873	$ 42	$ 59	$ 235	$ 87	$ 25	$ 683	$ 4,057	$ 2,563	$ 473	$122	$ 4,803	$ 7,962	$ (3,904)	$ 4,549	$ 22,423	$ (17,874)
177-197		WASHINGTON ST	24,903	$750,000	$ 4,531	$ 873	$ 92	$ 129	$ 518	$ 87	$ 55	$ 683	$ 6,968	$ 2,563	$ 2,338	$122	$ 4,803	$ 9,826	$ (2,857)	$ 10,035	$ 22,423	$ (12,388)
133		WAVERLY AVE	6,271	$499,000	$ 3,015	$1,527	$ 61	$ 86	$ 344	$164	$ 37	$ 1,196	$ 6,430	$ 4,485	$ 589	$230	$ 8,404	$ 13,708	$ (7,278)	$ 6,677	$ 42,126	$ (35,450)
244		WAVERLY AVE	5,486	$400,000	$ 2,417	$ 922	$ 49	$ 69	$ 276	$119	$ 29	$ 722	$ 4,603	$ 2,709	$ 515	$167	$ 5,076	$ 8,467	$ (3,863)	$ 5,352	$ 30,505	$ (25,153)
250		WAVERLY AVE	5,292	$335,000	$ 2,024	$ 922	$ 41	$ 58	$ 231	$119	$ 25	$ 722	$ 4,142	$ 2,709	$ 497	$167	$ 5,076	$ 8,448	$ (4,307)	$ 4,482	$ 30,505	$ (26,023)

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					Current Use Village Revenue									Current Use Village Expense						Current Use Rye Neck SD		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Rye Neck SD (16)																						
629	N	BARRY AVE	9,222	$683,600	$ 4,130	$1,598	$ 84	$ 118	$ 472	$109	$ 50	$ 1,251	$ 7,812	$ 4,692	$ 866	$153	$ 8,793	$ 14,504	$ (6,692)	$ 10,336	$ 28,193	$ (17,857)
637	N	BARRY AVE	9,665	$453,400	$ 2,739	$ 799	$ 56	$ 78	$ 313	$ 54	$ 33	$ 626	$ 4,698	$ 2,346	$ 907	$ 77	$ 4,396	$ 7,726	$ (3,028)	$ 6,855	$ 14,096	$ (7,241)
709	N	BARRY AVE	8,249	$547,100	$ 3,305	$ 927	$ 67	$ 94	$ 377	$ 76	$ 40	$ 726	$ 5,613	$ 2,722	$ 774	$107	$ 5,100	$ 8,702	$ (3,089)	$ 8,272	$ 19,622	$ (11,350)
408	E	BOSTON POST RD	11,323	$500,000	$ 3,021	$ 198	$ 62	$ 86	$ 345	$ 6	$ 37	$ 155	$ 3,909	$ 582	$ 1,063	$ 9	$ 1,090	$ 2,743	**$ 1,167**	$ 7,560	$ 1,572	**$ 5,988**
1131	E	BOSTON POST RD	6,288	$441,300	$ 2,666	$ 717	$ 54	$ 76	$ 304	$ 73	$ 33	$ 562	$ 4,485	$ 2,107	$ 590	$102	$ 3,947	$ 6,747	$ (2,261)	$ 6,672	$ 18,818	$ (12,145)
703		GROVE ST	5,750	$327,300	$ 1,977	$ 399	$ 40	$ 56	$ 226	$ 27	$ 24	$ 313	$ 3,063	$ 1,173	$ 540	$ 38	$ 2,198	$ 3,949	$ (886)	$ 4,949	$ 7,048	$ (2,099)
429		HALSTEAD AVE	11,216	$497,400	$ 3,005	$ 397	$ 61	$ 86	$ 343	$ 29	$ 37	$ 311	$ 4,267	$ 1,165	$ 1,053	$ 40	$ 2,182	$ 4,440	$ (172)	$ 7,521	$ 7,433	**$ 88**
441		HALSTEAD AVE	11,839	$596,300	$ 3,602	$1,190	$ 73	$ 103	$ 411	$ 86	$ 44	$ 932	$ 6,441	$ 3,494	$ 1,111	$121	$ 6,546	$ 11,272	$ (4,831)	$ 9,016	$ 22,298	$ (13,282)
458		HALSTEAD AVE	8,047	$638,700	$ 3,859	$ 781	$ 79	$ 110	$ 441	$ 55	$ 47	$ 612	$ 5,982	$ 2,294	$ 755	$ 77	$ 4,298	$ 7,424	$ (1,442)	$ 9,657	$ 14,151	$ (4,493)
466		HALSTEAD AVE	7,969	$416,700	$ 2,517	$ 391	$ 51	$ 72	$ 288	$ 27	$ 31	$ 306	$ 3,682	$ 1,147	$ 748	$ 38	$ 2,149	$ 4,083	$ (400)	$ 6,301	$ 7,075	$ (775)
474		HALSTEAD AVE	6,561	$343,400	$ 2,075	$ 781	$ 42	$ 59	$ 237	$ 55	$ 25	$ 612	$ 3,886	$ 2,294	$ 616	$ 77	$ 4,298	$ 7,285	$ (3,399)	$ 5,192	$ 14,151	$ (8,958)
507		HALSTEAD AVE	5,758	$445,500	$ 2,691	$ 724	$ 55	$ 77	$ 307	$ 66	$ 33	$ 567	$ 4,520	$ 2,127	$ 541	$ 92	$ 3,986	$ 6,746	$ (2,226)	$ 6,736	$ 16,989	$ (10,253)
515		HALSTEAD AVE	5,233	$417,300	$ 2,521	$ 362	$ 51	$ 72	$ 288	$ 33	$ 31	$ 284	$ 3,642	$ 1,064	$ 491	$ 46	$ 1,993	$ 3,594	**$ 48**	$ 6,310	$ 8,494	$ (2,185)
614		HALSTEAD AVE	6,677	$417,200	$ 2,520	$ 293	$ 51	$ 72	$ 288	$ 20	$ 31	$ 229	$ 3,505	$ 861	$ 627	$ 28	$ 1,613	$ 3,128	**$ 377**	$ 6,308	$ 5,210	**$ 1,098**
621		HALSTEAD AVE	8,390	$447,900	$ 2,706	$1,716	$ 55	$ 77	$ 309	$201	$ 33	$ 1,344	$ 6,441	$ 5,040	$ 788	$282	$ 9,444	$ 15,553	$ (9,113)	$ 6,772	$ 51,886	$ (45,113)
624		HALSTEAD AVE	10,404	$506,400	$ 3,059	$ 586	$ 62	$ 87	$ 349	$ 40	$ 37	$ 459	$ 4,681	$ 1,721	$ 977	$ 57	$ 3,225	$ 5,980	$ (1,299)	$ 7,657	$ 10,420	$ (2,764)

Net Fiscal Impact of Redevelopment

On **Table 11**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 10.

Looking altogether at the 43 properties in this category in Mamaroneck SD, we observe that redevelopment of all 43 properties yield average net positive results for both the Village and for Mamaroneck SD. Similarly, for the 16 properties in this category in Rye Neck SD, we observe that all 16 properties yield average net positive results from redevelopment for both the Village and the School District.

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Table 11. Net Fiscal Impact from Change in Use—Category 4: Rental Residential Redeveloping As Townhomes For-Sale

								Adjusted Rutgers Model					Local School Attraction					Non-Householder Population					Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (43)																								
406-418	W	BOSTON POST RD	$1,360,000	8 3-BR Townhomes	$12,000,000	$ (1,976)	$ (27,561)	$ 63,516	**$ 65,492**	$ 88,384	$ 1,598	**$117,543**	$ 60,163	**$ 62,140**	$ 26,416	$ 1,598	**$ 55,575**	$ 64,585	**$ 66,561**	$ 63,736	$ 1,598	**$ 92,895**	**$ 64,731**	**$ 88,671**
829-841	W	BOSTON POST RD	$960,000	8 3-BR Townhomes	$12,000,000	$ (1,370)	$ (8,583)	$ 63,516	**$ 64,886**	$ 88,384	$ 1,299	**$ 98,266**	$ 60,163	**$ 61,533**	$ 26,416	$ 1,299	**$ 36,298**	$ 64,585	**$ 65,955**	$ 63,736	$ 1,299	**$ 73,618**	**$ 64,125**	**$ 69,394**
921-929	W	BOSTON POST RD	$1,345,000	4 3-BR Townhomes	$ 6,000,000	$ (3,874)	$ (24,860)	$ 30,524	**$ 34,398**	$ 44,192	$ 2,598	**$ 71,650**	$ 28,656	**$ 32,530**	$ 13,208	$ 2,598	**$ 40,666**	$ 31,124	**$ 34,998**	$ 31,868	$ 2,598	**$ 59,326**	**$ 33,976**	**$ 57,214**
731	W	BOSTON POST RD	$650,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (132)	$ (5,588)	$ 18,805	**$ 18,937**	$ 34,322	$ 866	**$ 40,776**	$ 18,150	**$ 18,282**	$ 15,970	$ 866	**$ 22,424**	$ 19,671	**$ 19,803**	$ 26,841	$ 866	**$ 33,295**	**$ 19,007**	**$ 32,165**
737	W	BOSTON POST RD	$369,000	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (4,185)	$ (16,491)	$ 18,805	**$ 22,990**	$ 34,322	$ 1,299	**$ 52,112**	$ 18,150	**$ 22,335**	$ 15,970	$ 1,299	**$ 33,760**	$ 19,671	**$ 23,856**	$ 26,841	$ 1,299	**$ 44,631**	**$ 23,060**	**$ 43,501**
903	W	BOSTON POST RD	$710,000	4 3-BR Townhomes	$ 6,000,000	$ (22)	$ (4,786)	$ 30,524	**$ 30,546**	$ 44,192	$ 866	**$ 49,844**	$ 28,656	**$ 28,678**	$ 13,208	$ 866	**$ 18,860**	$ 31,124	**$ 31,146**	$ 31,868	$ 866	**$ 37,520**	**$ 30,124**	**$ 35,408**
200-212	W	BOSTON POST RD	$1,355,000	3 2-BR Townhomes + 1 3-BR Townhome	$ 4,800,000	$ (2,155)	$ (7,225)	$ 24,392	**$ 26,547**	$ 45,959	$ 2,407	**$ 55,591**	$ 23,643	**$ 25,798**	$ 22,304	$ 2,407	**$ 31,936**	$ 25,616	**$ 27,771**	$ 36,278	$ 2,407	**$ 45,910**	**$ 26,706**	**$ 44,479**
124		CENTER AVE	$653,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (9,477)	$ (47,431)	$ 5,479	**$ 14,956**	$ 8,100	$ 4,734	**$ 60,265**	$ 4,918	**$ 14,395**	$ (4,949)	$ 4,734	**$ 47,216**	$ 5,987	**$ 15,464**	$ 2,820	$ 4,734	**$ 54,985**	**$ 14,938**	**$ 54,156**
141		CENTER AVE	$410,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (5,326)	$ (26,226)	$ 5,479	**$ 10,805**	$ 8,100	$ 2,214	**$ 36,540**	$ 4,918	**$ 10,244**	$ (4,949)	$ 2,214	**$ 23,491**	$ 5,987	**$ 11,313**	$ 2,820	$ 2,214	**$ 31,260**	**$ 10,788**	**$ 30,431**
147		CENTER AVE	$464,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (4,945)	$ (25,503)	$ 5,479	**$ 10,424**	$ 8,100	$ 2,214	**$ 35,818**	$ 4,918	**$ 9,863**	$ (4,949)	$ 2,214	**$ 22,769**	$ 5,987	**$ 10,932**	$ 2,820	$ 2,214	**$ 30,538**	**$ 10,407**	**$ 29,708**
173		CENTER AVE	$530,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (12,239)	$ (56,332)	$ 5,479	**$ 17,718**	$ 8,100	$ 4,429	**$ 68,861**	$ 4,918	**$ 17,157**	$ (4,949)	$ 4,429	**$ 55,812**	$ 5,987	**$ 18,226**	$ 2,820	$ 4,429	**$ 63,581**	**$ 17,701**	**$ 62,751**
205		CENTER AVE	$449,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (8,931)	$ (41,560)	$ 5,479	**$ 14,410**	$ 8,100	$ 3,322	**$ 52,982**	$ 4,918	**$ 13,849**	$ (4,949)	$ 3,322	**$ 39,933**	$ 5,987	**$ 14,918**	$ 2,820	$ 3,322	**$ 47,702**	**$ 14,392**	**$ 46,872**
221		CENTER AVE	$408,000	1 Washingtonville 2-BR Townhome + 3 Washingtonville 3-BR Townhomes	$ 3,250,000	$ (9,714)	$ (42,109)	$ 11,795	**$ 21,509**	$ 13,336	$ 3,322	**$ 58,766**	$ 10,300	**$ 20,014**	$(15,205)	$ 3,322	**$ 30,225**	$ 12,603	**$ 22,317**	$ 1,896	$ 3,322	**$ 47,326**	**$ 21,280**	**$ 45,439**
253		CENTER AVE	$440,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (5,113)	$ (25,825)	$ 5,479	**$ 10,592**	$ 8,100	$ 2,214	**$ 36,139**	$ 4,918	**$ 10,031**	$ (4,949)	$ 2,214	**$ 23,090**	$ 5,987	**$ 11,100**	$ 2,820	$ 2,214	**$ 30,859**	**$ 10,574**	**$ 30,029**
254		CENTER AVE	$464,000	2 Washingtonville 2-BR Townhome + 5 Washingtonville 3-BR Townhomes	$ 5,630,000	$ (8,664)	$ (35,918)	$ 22,430	**$ 31,094**	$ 24,054	$ 3,550	**$ 63,522**	$ 20,166	**$ 28,831**	$(25,282)	$ 3,550	**$ 14,186**	$ 23,734	**$ 32,398**	$ 4,254	$ 3,550	**$ 43,722**	**$ 30,774**	**$ 40,477**
176-214		CENTER AVE	$1,037,000	2 Washingtonville 2-BR Townhome + 4 Washingtonville 3-BR Townhomes	$ 4,760,000	$ (14,501)	$ (70,378)	$ 18,964	**$ 33,464**	$ 21,436	$ 7,101	**$ 98,915**	$ 17,119	**$ 31,619**	$(20,154)	$ 7,101	**$ 57,325**	$ 20,133	**$ 34,634**	$ 4,716	$ 7,101	**$ 82,195**	**$ 33,239**	**$ 79,478**
116		ELLIOT AVE	$470,000	1 2-BR Townhome + 1 3-BR Townhome	$ 2,600,000	$ (1,604)	$ (8,117)	$ 13,218	**$ 14,822**	$ 22,685	$ 888	**$ 31,689**	$ 12,657	**$ 14,261**	$ 9,636	$ 888	**$ 18,640**	$ 13,726	**$ 15,330**	$ 17,404	$ 888	**$ 26,408**	**$ 14,804**	**$ 25,579**
64		GRAND ST	$435,000	5 3-BR Townhomes	$ 7,500,000	$ (5,518)	$ (26,412)	$ 39,697	**$ 45,215**	$ 55,240	$ 2,492	**$ 84,144**	$ 37,602	**$ 43,120**	$ 16,510	$ 2,492	**$ 45,414**	$ 40,366	**$ 45,883**	$ 39,835	$ 2,492	**$ 68,739**	**$ 44,740**	**$ 66,099**
190		GRAND ST	$350,000	2 Washingtonville 2-BR Townhomes + 1 Washingtonville 3-BR Townhome	$ 2,150,000	$ (1,088)	$ (6,528)	$ 7,800	**$ 8,888**	$ 13,582	$ 838	**$ 20,948**	$ 7,145	**$ 8,233**	$ (4,770)	$ 838	**$ 2,596**	$ 8,666	**$ 9,754**	$ 6,102	$ 838	**$ 13,468**	**$ 8,958**	**$ 12,337**
201		GRAND ST	$310,000	1 Washingtonville 2-BR Townhome + 3 Washingtonville 3-BR Townhomes	$ 3,250,000	$ (4,068)	$ (12,122)	$ 11,795	**$ 15,863**	$ 13,336	$ 1,363	**$ 26,821**	$ 10,300	**$ 14,368**	$(15,205)	$ 1,363	**$ (1,720)**	$ 12,603	**$ 16,671**	$ 1,896	$ 1,363	**$ 15,381**	**$ 15,634**	**$ 13,494**
209		GRAND ST	$371,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (3,551)	$ (11,306)	$ 9,474	**$ 13,025**	$ 7,854	$ 1,363	**$ 20,523**	$ 8,073	**$ 11,624**	$(15,384)	$ 1,363	**$ (2,715)**	$ 9,924	**$ 13,475**	$ (1,386)	$ 1,363	**$ 11,283**	**$ 12,708**	**$ 9,697**
211		GRAND ST	$338,000	2 Washingtonville 2-BR Townhome + 4 Washingtonville 3-BR Townhomes	$ 4,760,000	$ (4,310)	$ (11,747)	$ 18,964	**$ 23,274**	$ 21,436	$ 1,363	**$ 34,546**	$ 17,119	**$ 21,429**	$(20,154)	$ 1,363	**$ (7,044)**	$ 20,133	**$ 24,444**	$ 4,716	$ 1,363	**$ 17,826**	**$ 23,049**	**$ 15,110**
147		MADISON ST	$415,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (3,753)	$ (26,369)	$ 5,479	**$ 9,232**	$ 8,100	$ 2,732	**$ 37,201**	$ 4,918	**$ 8,671**	$ (4,949)	$ 2,732	**$ 24,152**	$ 5,987	**$ 9,740**	$ 2,820	$ 2,732	**$ 31,921**	**$ 9,214**	**$ 31,091**
201		MADISON ST	$467,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (3,389)	$ (25,673)	$ 5,479	**$ 8,868**	$ 8,100	$ 2,732	**$ 36,505**	$ 4,918	**$ 8,307**	$ (4,949)	$ 2,732	**$ 23,456**	$ 5,987	**$ 9,376**	$ 2,820	$ 2,732	**$ 31,225**	**$ 8,850**	**$ 30,396**
215		MADISON ST	$297,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (1,487)	$ (11,987)	$ 5,479	**$ 6,966**	$ 8,100	$ 1,366	**$ 21,453**	$ 4,918	**$ 6,405**	$ (4,949)	$ 1,366	**$ 8,404**	$ 5,987	**$ 7,474**	$ 2,820	$ 1,366	**$ 16,173**	**$ 6,948**	**$ 15,343**
818		MAMARONECK AVE	$1,606,000	5 3-BR Townhomes	$ 7,500,000	$ 3,173	$ (120)	$ 39,697	**$ 36,524**	$ 55,240	$ 1,331	**$ 56,691**	$ 37,602	**$ 34,429**	$ 16,510	$ 1,331	**$ 17,961**	$ 40,366	**$ 37,193**	$ 39,835	$ 1,331	**$ 41,286**	**$ 36,049**	**$ 38,646**
324		MT PLEASANT AVE	$940,000	3 3-BR Townhomes	$ 4,500,000	$ (2,738)	$ (28,097)	$ 22,893	**$ 25,631**	$ 33,144	$ 4,335	**$ 65,576**	$ 21,492	**$ 24,230**	$ 9,906	$ 4,335	**$ 42,338**	$ 23,343	**$ 26,081**	$ 23,901	$ 4,335	**$ 56,333**	**$ 25,314**	**$ 54,749**
339		MT PLEASANT AVE	$1,250,000	2 2-BR Townhomes + 3 3-BR Townhomes	$ 6,700,000	$ (1,036)	$ (31,283)	$ 35,448	**$ 36,484**	$ 56,418	$ 4,051	**$ 91,752**	$ 34,023	**$ 35,058**	$ 22,574	$ 4,051	**$ 57,908**	$ 36,484	**$ 37,520**	$ 42,775	$ 4,051	**$ 78,109**	**$ 36,354**	**$ 75,923**
1035		OLD BOSTON POST I	$1,030,000	2 2-BR Townhomes + 3 3-BR Townhomes	$ 6,700,000	$ 3,608	$ 6,639	$ 35,448	**$ 31,840**	$ 56,418	$ 433	**$ 50,212**	$ 34,023	**$ 30,414**	$ 22,574	$ 433	**$ 16,368**	$ 36,484	**$ 32,876**	$ 42,775	$ 433	**$ 36,569**	**$ 31,710**	**$ 34,383**

APPENDIX A: PARCEL ANALYSIS, REDEVELOPMENT SCENARIOS & FISCAL IMPACTS - 12/14/2018

665		OLD WHITE PLAINS	$630,000	2 Washingtonville 2-BR Townhomes + 2 Washingtonville 3-BR Townhomes	$ 3,020,000	$ (3,159)	$ (18,686)	$ 10,958	**$ 14,117**	$ 16,200	$ 3,195	**$ 38,082**	$ 9,836	**$ 12,995**	$ (9,898)	$ 3,195	**$ 11,984**	$ 11,974	**$ 15,133**	$ 5,640	$ 3,195	**$ 27,522**	**$ 14,082**	**$ 25,862**
741-751		OLD WHITE PLAINS	$1,353,000	2 Washingtonville 2-BR Townhomes + 8 Washingtonville 3-BR Townhomes	$ 8,240,000	$ (20,667)	$ (100,081)	$ 32,829	**$ 53,496**	$ 31,908	$ 9,137	**$ 141,126**	$ 29,309	**$ 49,976**	$ (40,666)	$ 9,137	**$ 68,552**	$ 34,534	**$ 55,201**	$ 2,868	$ 9,137	**$ 112,086**	**$ 52,891**	**$ 107,255**
143		PROSPECT AVE	$1,400,000	8 3-BR Townhomes	$12,000,000	$ (7,368)	$ (42,964)	$ 63,516	**$ 70,884**	$ 88,384	$ 4,404	**$ 135,752**	$ 60,163	**$ 67,532**	$ 26,416	$ 4,404	**$ 73,784**	$ 64,585	**$ 71,953**	$ 63,736	$ 4,404	**$ 111,104**	**$ 70,123**	**$ 106,880**
223		VALLEY PL	$395,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (2,672)	$ (12,792)	$ 20,849	**$ 23,521**	$ 33,733	$ 1,105	**$ 47,630**	$ 19,821	**$ 22,493**	$ 12,938	$ 1,105	**$ 26,835**	$ 21,507	**$ 24,179**	$ 25,371	$ 1,105	**$ 39,268**	**$ 23,398**	**$ 37,911**
233		VALLEY PL	$385,000	2 2-BR Townhomes + 5 3-BR Townhomes	$ 9,700,000	$ (3,390)	$ (12,926)	$ 51,327	**$ 54,717**	$ 78,514	$ 1,105	**$ 92,545**	$ 49,063	**$ 52,453**	$ 29,178	$ 1,105	**$ 43,209**	$ 52,631	**$ 56,021**	$ 58,709	$ 1,105	**$ 72,740**	**$ 54,397**	**$ 69,498**
407		WARD AVE	$455,000	2 2-BR Townhomes + 5 3-BR Townhomes	$ 9,700,000	$ (402)	$ (3,064)	$ 51,327	**$ 51,729**	$ 78,514	$ 568	**$ 82,146**	$ 49,063	**$ 49,465**	$ 29,178	$ 568	**$ 32,810**	$ 52,631	**$ 53,032**	$ 58,709	$ 568	**$ 62,341**	**$ 51,409**	**$ 59,099**
401-403		WARD AVE	$1,350,000	9 3-BR Townhomes	$13,500,000	$ 496	$ (9,392)	$ 71,455	**$ 70,959**	$ 99,432	$ 1,704	**$ 110,528**	$ 67,684	**$ 67,188**	$ 29,718	$ 1,704	**$ 40,814**	$ 72,658	**$ 72,162**	$ 71,703	$ 1,704	**$ 82,799**	**$ 70,103**	**$ 78,047**
4		STAUB CT	$690,000	3 2-BR Townhomes + 4 3-BR Townhomes	$ 9,300,000	$ (9,947)	$ (40,284)	$ 49,202	**$ 59,149**	$ 79,103	$ 4,106	**$ 123,493**	$ 47,274	**$ 57,221**	$ 32,210	$ 4,106	**$ 76,600**	$ 50,690	**$ 60,637**	$ 60,179	$ 4,106	**$ 104,569**	**$ 59,002**	**$ 101,554**
243		WASHINGTON ST	$470,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (6,309)	$ (27,346)	$ 9,474	**$ 15,783**	$ 7,854	$ 2,513	**$ 37,712**	$ 8,073	**$ 14,382**	$ (15,384)	$ 2,513	**$ 14,474**	$ 9,924	**$ 16,233**	$ (1,386)	$ 2,513	**$ 28,472**	**$ 15,466**	**$ 26,886**
265		WASHINGTON ST	$340,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (3,904)	$ (17,874)	$ 5,479	**$ 9,383**	$ 8,100	$ 1,675	**$ 27,649**	$ 4,918	**$ 8,822**	$ (4,949)	$ 1,675	**$ 14,600**	$ 5,987	**$ 9,891**	$ 2,820	$ 1,675	**$ 22,369**	**$ 9,366**	**$ 21,539**
177-197		WASHINGTON ST	$750,000	9 Washingtonville 3-BR Townhomes	$ 7,830,000	$ (2,857)	$ (12,388)	$ 31,198	**$ 34,056**	$ 23,562	$ 1,675	**$ 37,625**	$ 27,427	**$ 30,284**	$ (46,152)	$ 1,675	**$ (32,089)**	$ 32,401	**$ 35,258**	$ (4,158)	$ 1,675	**$ 9,905**	**$ 33,199**	**$ 5,147**
133		WAVERLY AVE	$499,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (7,278)	$ (35,450)	$ 6,316	**$ 13,594**	$ 5,236	$ 3,550	**$ 44,236**	$ 5,382	**$ 12,660**	$ (10,256)	$ 3,550	**$ 28,744**	$ 6,616	**$ 13,894**	$ (924)	$ 3,550	**$ 38,076**	**$ 13,383**	**$ 37,019**
244		WAVERLY AVE	$400,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (3,863)	$ (25,153)	$ 6,316	**$ 10,179**	$ 5,236	$ 2,840	**$ 33,230**	$ 5,382	**$ 9,245**	$ (10,256)	$ 2,840	**$ 17,738**	$ 6,616	**$ 10,479**	$ (924)	$ 2,840	**$ 27,070**	**$ 9,968**	**$ 26,012**
250		WAVERLY AVE	$335,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-BR Townhome	$ 1,510,000	$ (4,307)	$ (26,023)	$ 5,479	**$ 9,786**	$ 8,100	$ 2,840	**$ 36,963**	$ 4,918	**$ 9,225**	$ (4,949)	$ 2,840	**$ 23,914**	$ 5,987	**$ 10,294**	$ 2,820	$ 2,840	**$ 31,683**	**$ 9,768**	**$ 30,854**
Rye Neck SD (16)																									
629	N	BARRY AVE	$683,600	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (6,692)	$ (17,857)	$ 20,859	**$ 27,551**	$ 40,886	$ 3,807	**$ 62,550**	$ 20,596	**$ 27,288**	$ 27,807	$ 3,807	**$ 49,471**	$ 21,240	**$ 27,932**	$ 32,094	$ 3,807	**$ 53,758**	**$ 27,591**	**$ 55,260**
637	N	BARRY AVE	$453,400	3 3-BR Townhomes	$ 4,500,000	$ (3,028)	$ (7,241)	$ 22,908	**$ 25,936**	$ 40,998	$ 1,904	**$ 50,143**	$ 22,365	**$ 25,393**	$ 27,018	$ 1,904	**$ 36,163**	$ 23,115	**$ 26,143**	$ 31,767	$ 1,904	**$ 40,912**	**$ 25,824**	**$ 42,406**
709	N	BARRY AVE	$547,100	2 2-BR Townhomes + 1 3-BR Townhomes	$ 3,700,000	$ (3,089)	$ (11,350)	$ 18,810	**$ 21,899**	$ 40,774	$ 946	**$ 53,070**	$ 18,827	**$ 21,916**	$ 28,596	$ 946	**$ 40,892**	$ 19,365	**$ 22,454**	$ 32,421	$ 946	**$ 44,717**	**$ 22,090**	**$ 46,227**
408	E	BOSTON POST RD	$500,000	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ 1,167	$ 5,988	$ 26,446	**$ 25,279**	$ 54,440	$ 101	**$ 48,553**	$ 26,282	**$ 25,115**	$ 37,602	$ 101	**$ 31,715**	$ 27,070	**$ 25,903**	$ 43,010	$ 101	**$ 37,123**	**$ 25,433**	**$ 39,131**
1131	E	BOSTON POST RD	$441,300	2 3-BR Townhomes	$ 3,000,000	$ (2,261)	$ (12,145)	$ 15,272	**$ 17,533**	$ 27,332	$ 1,648	**$ 41,125**	$ 14,910	**$ 17,171**	$ 18,012	$ 1,648	**$ 31,805**	$ 15,410	**$ 17,671**	$ 21,178	$ 1,648	**$ 34,971**	**$ 17,459**	**$ 35,967**
703		GROVE ST	$327,300	1 2-BR Townhome + 1 3-BR Townhome	$ 2,600,000	$ (886)	$ (2,099)	$ 13,223	**$ 14,109**	$ 27,220	$ 952	**$ 30,271**	$ 13,141	**$ 14,027**	$ 18,801	$ 952	**$ 21,852**	$ 13,535	**$ 14,421**	$ 21,505	$ 952	**$ 24,556**	**$ 14,186**	**$ 25,560**
429		HALSTEAD AVE	$497,400	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ (172)	$ 88	$ 26,446	**$ 26,618**	$ 54,440	$ 612	**$ 54,964**	$ 26,282	**$ 26,454**	$ 37,602	$ 612	**$ 38,126**	$ 27,070	**$ 27,242**	$ 43,010	$ 612	**$ 43,534**	**$ 26,772**	**$ 45,542**
441		HALSTEAD AVE	$596,300	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ (4,831)	$ (13,282)	$ 26,446	**$ 31,277**	$ 54,440	$ 1,837	**$ 69,559**	$ 26,282	**$ 31,113**	$ 37,602	$ 1,837	**$ 52,721**	$ 27,070	**$ 31,901**	$ 43,010	$ 1,837	**$ 58,129**	**$ 31,431**	**$ 60,136**
458		HALSTEAD AVE	$638,700	2 2-BR Townhomes + 1 3-BR Townhomes	$ 3,700,000	$ (1,442)	$ (4,493)	$ 18,810	**$ 20,252**	$ 40,774	$ 708	**$ 45,975**	$ 18,827	**$ 20,269**	$ 28,596	$ 708	**$ 33,797**	$ 19,365	**$ 20,807**	$ 32,421	$ 708	**$ 37,622**	**$ 20,443**	**$ 39,132**
466		HALSTEAD AVE	$416,700	2 2-BR Townhomes + Existing	$ 2,616,700	$ (400)	$ (775)	$ 10,774	**$ 11,174**	$ 26,708		**$ 27,483**	$ 10,972	**$ 11,372**	$ 19,190		**$ 19,965**	$ 11,260	**$ 11,660**	$ 21,432		**$ 22,207**	**$ 11,402**	**$ 23,218**
474		HALSTEAD AVE	$343,400	2 3-BR Townhomes	$ 3,000,000	$ (3,399)	$ (8,958)	$ 15,272	**$ 18,671**	$ 27,332	$ 708	**$ 36,998**	$ 14,910	**$ 18,309**	$ 18,012	$ 708	**$ 27,678**	$ 15,410	**$ 18,809**	$ 21,178	$ 708	**$ 30,844**	**$ 18,597**	**$ 31,840**
507		HALSTEAD AVE	$445,500	1 2-BR Townhome + 1 3-BR Townhome	$ 2,600,000	$ (2,226)	$ (10,253)	$ 13,223	**$ 15,449**	$ 27,220	$ 1,110	**$ 38,583**	$ 13,141	**$ 15,367**	$ 18,801	$ 1,110	**$ 30,164**	$ 13,535	**$ 15,761**	$ 21,505	$ 1,110	**$ 32,868**	**$ 15,525**	**$ 33,871**
515		HALSTEAD AVE	$417,300	2 2-BR Townhomes	$ 2,200,000	$ 48	$ (2,185)	$ 11,174	**$ 11,126**	$ 27,108	$ 555	**$ 29,848**	$ 11,372	**$ 11,324**	$ 19,590	$ 555	**$ 22,330**	$ 11,660	**$ 11,612**	$ 21,832	$ 555	**$ 24,572**	**$ 11,354**	**$ 25,583**
614		HALSTEAD AVE	$417,200	2 3-BR Townhomes	$ 3,000,000	$ 377	$ 1,098	$ 15,272	**$ 14,895**	$ 27,332	$ 445	**$ 26,679**	$ 14,910	**$ 14,533**	$ 18,012	$ 445	**$ 17,359**	$ 15,410	**$ 15,033**	$ 21,178	$ 445	**$ 20,525**	**$ 14,821**	**$ 21,521**
621		HALSTEAD AVE	$447,900	2 2-BR Townhomes + 1 3-BR Townhome	$ 3,700,000	$ (9,113)	$ (45,113)	$ 18,810	**$ 27,923**	$ 40,774	$ 4,752	**$ 90,639**	$ 18,827	**$ 27,940**	$ 28,596	$ 4,752	**$ 78,461**	$ 19,365	**$ 28,478**	$ 32,421	$ 4,752	**$ 82,286**	**$ 28,113**	**$ 83,796**
624		HALSTEAD AVE	$506,400	3 2-BR Townhomes + 1 3-BR Townhome	$ 4,800,000	$ (1,299)	$ (2,764)	$ 24,397	**$ 25,696**	$ 54,328	$ 889	**$ 57,981**	$ 24,513	**$ 25,812**	$ 38,391	$ 889	**$ 42,044**	$ 25,195	**$ 26,494**	$ 43,337	$ 889	**$ 46,990**	**$ 26,000**	**$ 49,005**

Category 5: Existing Residential Rental Properties Redeveloping As Larger Apartment Complexes

Fiscal Impact of Existing Uses

On **Table 12**, we estimate the demographic characteristics of the existing uses on these three properties. As noted above, these characteristics were developed by examining the block level data on occupied housing units and population provided by the 2010 census and allocating that data to individual housing units on each block.

Table 12. Demographic Characteristics of Category 5--Existing Residential Rental Properties

Address	Dir	Street	Square Feet of Land	Current Assessment	Estimated Current Housing Units	Estimated Current Population	Estimated Current SAC Elementary	Estimated Current SAC Middle/High	Total Estimated Current SAC
Current Residential Rental Properties Redeveloped As Larger Apartment Complexes (3)									
Mamaroneck SD (3)									
253/228-232		HALSTEAD AVE/VALLEY PL	27,428	$912,000	4	5.71	0.20	0.22	0.41
420		MT PLEASANT AVE	15,583	$660,000	4	4.00	0.08	0.06	0.14
338-352		MT PLEASANT AVE	23,632	$996,000	7	32.42	4.27	2.73	7.00

On **Table 13**, we calculate the fiscal impact on the Village and the Mamaroneck School District from the existing development on these three properties. Again, given that these properties are potentially subject to redevelopment, the lower assessed values and current resident population service needs yield negative fiscal impacts for the Village, while the impact on Mamaroneck SD varies by property.

Net Fiscal Impact of Redevelopment

On **Table 14**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 13.

Looking together at the three properties in this category, we observe:

- Redevelopment of all three properties yield generally modest average net fiscal impacts for the Village—modestly negative results for two properties and modestly positive results for one property;

- Similarly for Mamaroneck SD, the average results for one property are positive, while the average results for the two other properties are substantially negative. These more substantial negative impacts are largely due to significant increases in the number of two-bedroom apartments on these properties.

Table 13. Fiscal Impact of Existing Use: Category 5--Existing Rental Residential Redeveloping As Larger Apartment Complexes

					Current Use Village Revenue									Current Use Village Expense						Current Use Mamaroneck SD		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Residential Rental Properties Redeveloped As Larger Apartment Complexes (3)																						
Mamaroneck SD (3)																						
253/228-232		HALSTEAD AVE/VALLEY PL	27,428	$912,000	$ 5,510	$ 817	$ 112	$ 157	$ 629	$ 32	$ 67	$ 640	$ 7,964	$ 2,398	$ 2,575	$ 46	$ 3,871	$ 8,890	$ (926)	$ 12,203	$ 8,338	**$ 3,864**
420		MT PLEASANT AVE	15,583	$660,000	$ 3,987	$ 572	$ 81	$ 114	$ 455	$ 11	$ 49	$ 448	$ 5,717	$ 1,680	$ 1,463	$ 16	$ 2,712	$ 5,870	$ (153)	$ 8,831	$ 2,847	**$ 5,984**
338-352		MT PLEASANT AVE	23,632	$996,000	$ 6,017	$4,636	$ 123	$ 171	$ 687	$553	$ 73	$ 3,631	$ 15,892	$ 13,616	$ 2,218	$777	$ 21,981	$ 38,593	$(22,701)	$ 13,326	$ 142,358	$ (129,032)

Table 14. Net Fiscal Impact from Change in Use—Category 5: Rental Residential Redeveloping As Larger Apartment Complexes

								Adjusted Rutgers Model					Local School Attraction					Non-Householder Population					Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (3)																								
253/228-23		HALSTEAD AVE/VALLEY PL	$912,000	60 Units--1 & 2 BR	$12,000,000	$ (926)	$ 3,864	$ (21,030)	$ (20,104)	$ (70,500)	$ 1,456	$ (72,909)	$ 210	**$ 1,136**	$(90,960)	$ 1,456	$ (93,369)	$ (20,670)	$ (19,744)	$ (275,160)	$ 1,456	$(277,569)	$ (12,904)	$ (147,949)
420		MT PLEASANT AVE	$660,000	34 Units--1 & 2 BR	$ 6,800,000	$ (153)	$ 5,984	$ (11,917)	$ (11,764)	$ (39,950)	$ 497	$ (45,437)	$ 119	**$ 272**	$(51,544)	$ 497	$ (57,031)	$ (11,713)	$ (11,560)	$ (155,924)	$ 497	$(161,411)	$ (7,684)	$ (87,959)
338-352		MT PLEASANT AVE	$996,000	52 Units--1 & 2 BR	$10,400,000	$ (22,701)	$ (129,032)	$ (18,226)	**$ 4,475**	$ (61,100)	$ 24,853	**$ 92,784**	$ 182	**$ 22,883**	$(78,832)	$ 24,853	**$ 75,052**	$ (17,914)	**$ 4,787**	$ (238,472)	$ 24,853	$ (84,588)	**$ 10,715**	**$ 27,750**

Category 6: Existing Owner-Occupied One- to Three-Family Homes Redeveloping As Townhomes For-Sale.

Fiscal Impact of Existing Uses

On **Table 15**, we estimate the demographic characteristics of the existing uses on these 63 properties. As noted above, these characteristics were developed by examining the block level data on occupied housing units and population provided by the 2010 U.S. Census and allocating that data to individual housing units on each block.

On **Table 16**, we calculate the fiscal impact on the Village and the school districts from the existing development on these 63 properties. Again, given that these properties are potentially subject to redevelopment, the lower assessed values and current resident population service needs yield mostly negative fiscal impacts for the Village and the school districts.

Table 15. Demographic Characteristics of Category 6--Existing Owner-Occupied Homes

Address	Dir	Street	Square Feet of Land	Current Assessment	Estimated Current Housing Units	Estimated Current Population	Estimated Current SAC Elementary	Estimated Current SAC Middle/High	Total Estimated Current SAC
Current Owner-Occupied One to Three Unit Homes Redeveloped As Townhomes for Sale (63)									
Mamaroneck SD (54)									
787		ALLING ST	5,550	$343,000	2	5.52	0.38	0.42	0.80
135		CENTER AVE	5,035	$432,000	3	12.15	0.94	1.40	2.34
148		CENTER AVE	7,304	$533,000	1	3.56	0.33	0.36	0.69
156		CENTER AVE	7,362	$432,000	3	10.68	1.00	1.07	2.07
165		CENTER AVE	5,142	$431,000	3	12.15	0.94	1.40	2.34
213		CENTER AVE	5,200	$440,000	2	8.10	0.62	0.94	1.56
235		CENTER AVE	5,227	$474,000	2	8.10	0.62	0.94	1.56
243		CENTER AVE	5,299	$551,000	3	12.15	0.94	1.40	2.34
125		GRAND ST	7,845	$418,000	1	2.58	0.20	0.18	0.38
165		GRAND ST	5,779	$342,000	1	2.76	0.19	0.21	0.40
179		GRAND ST	12,160	$687,000	2	5.52	0.38	0.42	0.80
196		GRAND ST	7,053	$400,000	2	6.10	0.47	0.63	1.10
222		GRAND ST	9,403	$521,000	3	9.15	0.71	0.95	1.65
234		GRAND ST	9,363	$405,000	2	6.10	0.47	0.63	1.10
250		GRAND ST	5,073	$376,000	2	6.10	0.47	0.63	1.10
260		GRAND ST	5,708	$370,000	2	6.10	0.47	0.63	1.10
270		GRAND ST	5,801	$377,000	1	3.05	0.24	0.32	0.55
271		GRAND ST	7,152	$493,000	2	5.52	0.38	0.42	0.80
975		LOUISE AVE	8,262	$399,000	1	2.54	0.17	0.20	0.37
1025		LOUISE AVE	7,089	$439,000	3	8.12	0.53	1.24	1.76
119		MADISON ST	5,056	$320,000	1	3.24	0.38	0.40	0.78
139		MADISON ST	5,123	$498,000	2	6.48	0.77	0.80	1.57
150		MADISON ST	9,900	$352,000	1	4.05	0.31	0.47	0.78
155		MADISON ST	5,081	$390,000	1	3.24	0.38	0.40	0.78
156		MADISON ST	5,030	$419,000	1	4.05	0.31	0.47	0.78
163		MADISON ST	5,276	$382,000	1	3.24	0.38	0.40	0.78
166		MADISON ST	5,039	$365,000	3	12.15	0.94	1.40	2.34
173		MADISON ST	5,033	$405,000	2	6.48	0.77	0.80	1.57
176		MADISON ST	5,012	$490,000	2	8.10	0.62	0.94	1.56
214		MADISON ST	5,837	$335,000	1	4.05	0.31	0.47	0.78
227		MADISON ST	5,197	$355,000	1	3.24	0.38	0.40	0.78
243		MADISON ST	5,216	$591,000	1	3.24	0.38	0.40	0.78
257		MADISON ST	5,073	$345,000	2	6.48	0.77	0.80	1.57
261		MADISON ST	5,239	$535,000	2	6.48	0.77	0.80	1.57
335		MT PLEASANT AVE	5,444	$460,000	2	4.75	0.57	0.61	1.18
136		PELHAM ST	7,791	$346,000	1	2.61	0.16	0.29	0.44
729		PLAZA AVE	6,566	$530,000	2	6.10	0.47	0.63	1.10
755		PLAZA AVE	6,218	$340,000	1	3.05	0.24	0.32	0.55
133		PROSPECT AVE	5,406	$545,000	2	5.69	0.41	0.60	1.01
1		STAUB CT	5,424	$510,000	3	6.13	0.50	0.55	1.04
6		STAUB CT	8,478	$430,000	2	4.09	0.33	0.37	0.70
7		STAUB CT	7,857	$469,000	1	2.04	0.17	0.18	0.35
411		WARD AVE	5,155	$420,000	2	5.22	0.32	0.58	0.90
415		WARD AVE	5,195	$570,000	3	7.83	0.48	0.87	1.35
420		WARD AVE	5,068	$406,000	2	4.09	0.33	0.37	0.70
138		WASHINGTON ST	5,196	$477,000	3	9.72	1.15	1.20	2.35
155		WASHINGTON ST	5,012	$520,000	2	6.10	0.47	0.63	1.10
170		WASHINGTON ST	9,992	$419,000	2	6.48	0.77	0.80	1.57
235		WASHINGTON ST	5,720	$250,000	1	3.05	0.24	0.32	0.55
118		WAVERLY AVE	13,417	$402,000	2	6.45	0.80	0.70	1.50
139		WAVERLY AVE	5,853	$459,000	2	7.12	0.67	0.71	1.38
163		WAVERLY AVE	7,243	$400,000	2	7.12	0.67	0.71	1.38
222		WAVERLY AVE	9,966	$430,000	2	6.45	0.80	0.70	1.50
238		WAVERLY AVE	5,489	$404,000	3	9.68	1.20	1.05	2.25
Rye Neck SD (9)									
621	N	BARRY AVE	9,042	$505,200	2	5.59	0.58	0.11	0.69
1115	E	BOSTON POST RD	7,664	$541,500	1	2.51	0.25	0.21	0.46
423		HALSTEAD AVE	6,475	$466,100	2	5.55	0.37	0.35	0.73
544		HALSTEAD AVE	7,938	$651,500	2	4.10	0.27	0.24	0.51
554		HALSTEAD AVE	6,467	$534,500	1	2.05	0.14	0.12	0.25
629		HALSTEAD AVE	9,626	$452,400	2	6.00	0.72	0.55	1.27
635		HALSTEAD AVE	6,430	$424,400	1	3.00	0.36	0.27	0.63
427		UNION AVE	5,097	$508,600	1	2.77	0.19	0.18	0.36
429		UNION AVE	5,209	$502,100	1	2.77	0.19	0.18	0.36

Table 16. Fiscal Impact of Existing Use: Category 6--Existing Owner-Occupied Homes Redeveloping As Townhomes For-Sale

					Current Use Village Revenue									Current Use Village Expense						Current Use Mamaroneck SD	
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Current Owner-Occupied One to Three Unit Residential Properties Redeveloped As Townhomes for Sale (63)																						
Mamaroneck SD (54)																						
787		ALLING ST	5,550	$343,000	$ 2,072	$ 789	$ 42	$ 59	$ 237	$ 63	$ 25	$ 618	$ 3,906	$ 2,318	$ 521	$ 89	$ 4,344	$ 7,272	$ (3,366)	$ 4,589	$ 16,270	$ (11,680)
135		CENTER AVE	5,035	$432,000	$ 2,610	$1,738	$ 53	$ 74	$ 298	$185	$ 32	$ 1,361	$ 6,351	$ 5,104	$ 473	$260	$ 9,564	$ 15,400	$ (9,049)	$ 5,780	$ 47,568	$ (41,788)
148		CENTER AVE	7,304	$533,000	$ 3,220	$ 509	$ 66	$ 92	$ 368	$ 55	$ 39	$ 399	$ 4,747	$ 1,495	$ 686	$ 77	$ 2,801	$ 5,059	$ (312)	$ 7,132	$ 14,042	$ (6,911)
156		CENTER AVE	7,362	$432,000	$ 2,610	$1,527	$ 53	$ 74	$ 298	$164	$ 32	$ 1,196	$ 5,954	$ 4,485	$ 691	$230	$ 8,404	$ 13,810	$ (7,856)	$ 5,780	$ 42,126	$ (36,346)
165		CENTER AVE	5,142	$431,000	$ 2,604	$1,738	$ 53	$ 74	$ 297	$185	$ 32	$ 1,361	$ 6,344	$ 5,104	$ 483	$260	$ 9,564	$ 15,410	$ (9,067)	$ 5,767	$ 47,568	$ (41,801)
213		CENTER AVE	5,200	$440,000	$ 2,658	$1,159	$ 54	$ 76	$ 304	$123	$ 32	$ 907	$ 5,313	$ 3,403	$ 488	$173	$ 6,376	$ 10,440	$ (5,127)	$ 5,887	$ 31,712	$ (25,825)
235		CENTER AVE	5,227	$474,000	$ 2,864	$1,159	$ 58	$ 82	$ 327	$123	$ 35	$ 907	$ 5,555	$ 3,403	$ 491	$173	$ 6,376	$ 10,442	$ (4,888)	$ 6,342	$ 31,712	$ (25,370)
243		CENTER AVE	5,299	$551,000	$ 3,329	$1,738	$ 68	$ 95	$ 380	$185	$ 41	$ 1,361	$ 7,196	$ 5,104	$ 497	$260	$ 9,564	$ 15,425	$ (8,229)	$ 7,372	$ 47,568	$ (40,195)
125		GRAND ST	7,845	$418,000	$ 2,525	$ 369	$ 51	$ 72	$ 288	$ 30	$ 31	$ 289	$ 3,656	$ 1,085	$ 736	$ 42	$ 2,033	$ 3,896	$ (240)	$ 5,593	$ 7,626	$ (2,033)
165		GRAND ST	5,779	$342,000	$ 2,066	$ 395	$ 42	$ 59	$ 236	$ 32	$ 25	$ 309	$ 3,164	$ 1,159	$ 542	$ 44	$ 2,172	$ 3,918	$ (755)	$ 4,576	$ 8,135	$ (3,559)
179		GRAND ST	12,160	$687,000	$ 4,150	$ 789	$ 85	$ 118	$ 474	$ 63	$ 51	$ 618	$ 6,349	$ 2,318	$ 1,141	$ 89	$ 4,344	$ 7,893	$ (1,544)	$ 9,192	$ 16,270	$ (7,077)
196		GRAND ST	7,053	$400,000	$ 2,417	$ 873	$ 49	$ 69	$ 276	$ 87	$ 29	$ 683	$ 4,483	$ 2,563	$ 662	$122	$ 4,803	$ 8,150	$ (3,667)	$ 5,352	$ 22,423	$ (17,071)
222		GRAND ST	9,403	$521,000	$ 3,148	$1,309	$ 64	$ 90	$ 359	$131	$ 38	$ 1,025	$ 6,164	$ 3,845	$ 883	$184	$ 7,204	$ 12,115	$ (5,951)	$ 6,971	$ 33,634	$ (26,663)
234		GRAND ST	9,363	$405,000	$ 2,447	$ 873	$ 50	$ 70	$ 279	$ 87	$ 30	$ 683	$ 4,519	$ 2,563	$ 879	$122	$ 4,803	$ 8,367	$ (3,848)	$ 5,419	$ 22,423	$ (17,004)
250		GRAND ST	5,073	$376,000	$ 2,272	$ 873	$ 46	$ 65	$ 259	$ 87	$ 28	$ 683	$ 4,313	$ 2,563	$ 476	$122	$ 4,803	$ 7,964	$ (3,651)	$ 5,031	$ 22,423	$ (17,392)
260		GRAND ST	5,708	$370,000	$ 2,235	$ 873	$ 46	$ 64	$ 255	$ 87	$ 27	$ 683	$ 4,270	$ 2,563	$ 536	$122	$ 4,803	$ 8,024	$ (3,754)	$ 4,951	$ 22,423	$ (17,472)
270		GRAND ST	5,801	$377,000	$ 2,278	$ 436	$ 46	$ 65	$ 260	$ 44	$ 28	$ 342	$ 3,498	$ 1,282	$ 545	$ 61	$ 2,401	$ 4,289	$ (790)	$ 5,044	$ 11,211	$ (6,167)
271		GRAND ST	7,152	$493,000	$ 2,978	$ 789	$ 61	$ 85	$ 340	$ 63	$ 36	$ 618	$ 4,971	$ 2,318	$ 671	$ 89	$ 4,344	$ 7,423	$ (2,452)	$ 6,596	$ 16,270	$ (9,673)
975		LOUISE AVE	8,262	$399,000	$ 2,411	$ 363	$ 49	$ 69	$ 275	$ 29	$ 29	$ 284	$ 3,509	$ 1,065	$ 776	$ 41	$ 1,996	$ 3,877	$ (368)	$ 5,339	$ 7,505	$ (2,167)
1025		LOUISE AVE	7,089	$439,000	$ 2,652	$1,161	$ 54	$ 76	$ 303	$139	$ 32	$ 909	$ 5,326	$ 3,409	$ 665	$196	$ 6,389	$ 10,659	$ (5,333)	$ 5,874	$ 35,889	$ (30,015)
119		MADISON ST	5,056	$320,000	$ 1,933	$ 463	$ 39	$ 55	$ 221	$ 62	$ 24	$ 363	$ 3,160	$ 1,361	$ 475	$ 87	$ 2,550	$ 4,473	$ (1,313)	$ 4,282	$ 15,961	$ (11,679)
139		MADISON ST	5,123	$498,000	$ 3,009	$ 927	$ 61	$ 86	$ 344	$124	$ 37	$ 726	$ 5,313	$ 2,722	$ 481	$174	$ 5,101	$ 8,478	$ (3,165)	$ 6,663	$ 31,921	$ (25,258)
150		MADISON ST	9,900	$352,000	$ 2,127	$ 579	$ 43	$ 61	$ 243	$ 62	$ 26	$ 454	$ 3,594	$ 1,701	$ 929	$ 87	$ 3,188	$ 5,905	$ (2,311)	$ 4,710	$ 15,856	$ (11,146)
155		MADISON ST	5,081	$390,000	$ 2,356	$ 463	$ 48	$ 67	$ 269	$ 62	$ 29	$ 363	$ 3,657	$ 1,361	$ 477	$ 87	$ 2,550	$ 4,475	$ (818)	$ 5,218	$ 15,961	$ (10,742)
156		MADISON ST	5,030	$419,000	$ 2,531	$ 579	$ 52	$ 72	$ 289	$ 62	$ 31	$ 454	$ 4,070	$ 1,701	$ 472	$ 87	$ 3,188	$ 5,448	$ (1,379)	$ 5,606	$ 15,856	$ (10,250)
163		MADISON ST	5,276	$382,000	$ 2,308	$ 463	$ 47	$ 66	$ 264	$ 62	$ 28	$ 363	$ 3,601	$ 1,361	$ 495	$ 87	$ 2,550	$ 4,494	$ (893)	$ 5,111	$ 15,961	$ (10,849)
166		MADISON ST	5,039	$365,000	$ 2,205	$1,738	$ 45	$ 63	$ 252	$185	$ 27	$ 1,361	$ 5,875	$ 5,104	$ 473	$260	$ 9,564	$ 15,401	$ (9,525)	$ 4,884	$ 47,568	$ (42,684)
173		MADISON ST	5,033	$405,000	$ 2,447	$ 927	$ 50	$ 70	$ 279	$124	$ 30	$ 726	$ 4,652	$ 2,722	$ 472	$174	$ 5,101	$ 8,469	$ (3,817)	$ 5,419	$ 31,921	$ (26,502)
176		MADISON ST	5,012	$490,000	$ 2,960	$1,159	$ 60	$ 84	$ 338	$123	$ 36	$ 907	$ 5,668	$ 3,403	$ 470	$173	$ 6,376	$ 10,422	$ (4,754)	$ 6,556	$ 31,712	$ (25,156)
214		MADISON ST	5,837	$335,000	$ 2,024	$ 579	$ 41	$ 58	$ 231	$ 62	$ 25	$ 454	$ 3,473	$ 1,701	$ 548	$ 87	$ 3,188	$ 5,524	$ (2,051)	$ 4,482	$ 15,856	$ (11,374)
227		MADISON ST	5,197	$355,000	$ 2,145	$ 463	$ 44	$ 61	$ 245	$ 62	$ 26	$ 363	$ 3,409	$ 1,361	$ 488	$ 87	$ 2,550	$ 4,486	$ (1,077)	$ 4,750	$ 15,961	$ (11,211)
243		MADISON ST	5,216	$591,000	$ 3,570	$ 463	$ 73	$ 102	$ 408	$ 62	$ 44	$ 363	$ 5,085	$ 1,361	$ 490	$ 87	$ 2,550	$ 4,488	**$ 597**	$ 7,908	$ 15,961	$ (8,053)

APPENDIX A: PARCEL ANALYSIS, REDEVELOPMENT SCENARIOS & FISCAL IMPACTS - 12/14/2018

257		MADISON ST	5,073	$345,000	$ 2,084	$ 927	$ 42	$ 59	$ 238	$124	$ 25	$ 726	$ 4,226	$ 2,722	$ 476	$174	$ 5,101	$ 8,473	$ (4,247)	$ 4,616	$ 31,921	$ (27,305)
261		MADISON ST	5,239	$535,000	$ 3,232	$ 927	$ 66	$ 92	$ 369	$124	$ 39	$ 726	$ 5,575	$ 2,722	$ 492	$174	$ 5,101	$ 8,489	$ (2,913)	$ 7,158	$ 31,921	$ (24,763)
335		MT PLEASANT AVE	5,444	$460,000	$ 2,779	$ 680	$ 57	$ 79	$ 317	$ 93	$ 34	$ 532	$ 4,572	$ 1,997	$ 511	$131	$ 3,741	$ 6,380	$ (1,809)	$ 6,155	$ 24,004	$ (17,849)
136		PELHAM ST	7,791	$346,000	$ 2,090	$ 373	$ 43	$ 60	$ 239	$ 35	$ 26	$ 292	$ 3,158	$ 1,097	$ 731	$ 49	$ 2,055	$ 3,932	$ (775)	$ 4,629	$ 9,039	$ (4,409)
729		PLAZA AVE	6,566	$530,000	$ 3,202	$ 873	$ 65	$ 91	$ 366	$ 87	$ 39	$ 683	$ 5,406	$ 2,563	$ 616	$122	$ 4,803	$ 8,105	$ (2,698)	$ 7,091	$ 22,423	$ (15,331)
755		PLAZA AVE	6,218	$340,000	$ 2,054	$ 436	$ 42	$ 59	$ 235	$ 44	$ 25	$ 342	$ 3,236	$ 1,282	$ 584	$ 61	$ 2,401	$ 4,328	$ (1,092)	$ 4,549	$ 11,211	$ (6,662)
133		PROSPECT AVE	5,406	$545,000	$ 3,293	$ 813	$ 67	$ 94	$ 376	$ 80	$ 40	$ 637	$ 5,399	$ 2,388	$ 507	$112	$ 4,474	$ 7,482	$ (2,083)	$ 7,292	$ 20,565	$ (13,273)
1		STAUB CT	5,424	$510,000	$ 3,081	$ 877	$ 63	$ 88	$ 352	$ 82	$ 38	$ 687	$ 5,267	$ 2,575	$ 509	$116	$ 4,825	$ 8,024	$ (2,758)	$ 6,824	$ 21,221	$ (14,397)
6		STAUB CT	8,478	$430,000	$ 2,598	$ 584	$ 53	$ 74	$ 297	$ 55	$ 32	$ 458	$ 4,150	$ 1,717	$ 796	$ 77	$ 3,216	$ 5,806	$ (1,656)	$ 5,753	$ 14,147	$ (8,394)
7		STAUB CT	7,857	$469,000	$ 2,833	$ 292	$ 58	$ 81	$ 324	$ 27	$ 35	$ 229	$ 3,879	$ 858	$ 738	$ 39	$ 1,608	$ 3,243	$ 636	$ 6,275	$ 7,074	$ (798)
411		WARD AVE	5,155	$420,000	$ 2,537	$ 746	$ 52	$ 72	$ 290	$ 71	$ 31	$ 585	$ 4,384	$ 2,192	$ 484	$100	$ 4,108	$ 6,884	$ (2,500)	$ 5,620	$ 18,303	$ (12,684)
415		WARD AVE	5,195	$570,000	$ 3,444	$1,120	$ 70	$ 98	$ 393	$107	$ 42	$ 877	$ 6,150	$ 3,289	$ 488	$150	$ 6,162	$ 10,088	$ (3,938)	$ 7,627	$ 27,455	$ (19,828)
420		WARD AVE	5,068	$406,000	$ 2,453	$ 584	$ 50	$ 70	$ 280	$ 55	$ 30	$ 458	$ 3,980	$ 1,717	$ 476	$ 77	$ 3,216	$ 5,486	$ (1,506)	$ 5,432	$ 14,147	$ (8,715)
138		WASHINGTON ST	5,196	$477,000	$ 2,882	$1,390	$ 59	$ 82	$ 329	$186	$ 35	$ 1,089	$ 6,052	$ 4,083	$ 488	$261	$ 7,651	$ 12,483	$ (6,431)	$ 6,382	$ 47,882	$ (41,500)
155		WASHINGTON ST	5,012	$520,000	$ 3,142	$ 873	$ 64	$ 90	$ 359	$ 87	$ 38	$ 683	$ 5,335	$ 2,563	$ 470	$122	$ 4,803	$ 7,959	$ (2,623)	$ 6,958	$ 22,423	$ (15,465)
170		WASHINGTON ST	9,992	$419,000	$ 2,531	$ 927	$ 52	$ 72	$ 289	$124	$ 31	$ 726	$ 4,752	$ 2,722	$ 938	$174	$ 5,101	$ 8,935	$ (4,183)	$ 5,606	$ 31,921	$ (26,315)
235		WASHINGTON ST	5,720	$250,000	$ 1,510	$ 436	$ 31	$ 43	$ 173	$ 44	$ 18	$ 342	$ 2,597	$ 1,282	$ 537	$ 61	$ 2,401	$ 4,281	$ (1,684)	$ 3,345	$ 11,211	$ (7,866)
118		WAVERLY AVE	13,417	$402,000	$ 2,429	$ 922	$ 49	$ 69	$ 277	$119	$ 30	$ 722	$ 4,618	$ 2,709	$ 1,259	$167	$ 5,076	$ 9,211	$ (4,594)	$ 5,379	$ 30,505	$ (25,127)
139		WAVERLY AVE	5,853	$459,000	$ 2,773	$1,018	$ 56	$ 79	$ 317	$109	$ 34	$ 797	$ 5,183	$ 2,990	$ 549	$153	$ 5,603	$ 9,295	$ (4,112)	$ 6,141	$ 28,084	$ (21,943)
163		WAVERLY AVE	7,243	$400,000	$ 2,417	$1,018	$ 49	$ 69	$ 276	$109	$ 29	$ 797	$ 4,765	$ 2,990	$ 680	$153	$ 5,603	$ 9,426	$ (4,661)	$ 5,352	$ 28,084	$ (22,732)
222		WAVERLY AVE	9,966	$430,000	$ 2,598	$ 922	$ 53	$ 74	$ 297	$119	$ 32	$ 722	$ 4,816	$ 2,709	$ 936	$167	$ 5,076	$ 8,887	$ (4,071)	$ 5,753	$ 30,505	$ (24,752)
238		WAVERLY AVE	5,489	$404,000	$ 2,441	$1,384	$ 50	$ 70	$ 279	$178	$ 30	$ 1,084	$ 5,513	$ 4,064	$ 515	$250	$ 7,614	$ 12,443	$ (6,929)	$ 5,406	$ 45,758	$ (40,353)

					Current Use Village Revenue									Current Use Village Expense						Current Use Rye Neck SD		
Address	Dir	Street	Square Feet of Land	Current Assessment	Real Property Tax	Sales Tax	Mortgage Tax (Annualized Value)	Building & Electric Permits	Library District Property Tax	Youth Camp	Utility Gross Receipts Tax	Other	Total	Police/ Fire/Jail	Infra-structure	Youth Camp	General Government /Sanitation/ Recreation/ Library	Total	Net Fiscal Impact of Current Use--Village	Revenue	Operating Expense	Net Fiscal Impact of Current Use--School District
Rye Neck SD (9)																						
621	N	BARRY AVE	9,042	$505,200	$ 3,052	$ 799	$ 62	$ 87	$ 349	$ 54	$ 37	$ 626	$ 5,066	$ 2,346	$ 849	$ 77	$ 4,396	$ 7,668	$ (2,602)	$ 7,639	$ 14,096	$ (6,458)
1115	E	BOSTON POST RD	7,664	$541,500	$ 3,271	$ 359	$ 67	$ 93	$ 374	$ 36	$ 40	$ 281	$ 4,521	$ 1,053	$ 719	$ 51	$ 1,974	$ 3,798	$ 723	$ 8,187	$ 9,409	$ (1,221)
423		HALSTEAD AVE	6,475	$466,100	$ 2,816	$ 793	$ 57	$ 80	$ 322	$ 57	$ 34	$ 621	$ 4,781	$ 2,329	$ 608	$ 81	$ 4,364	$ 7,382	$ (2,601)	$ 7,047	$ 14,865	$ (7,818)
544		HALSTEAD AVE	7,938	$651,500	$ 3,936	$ 586	$ 80	$ 112	$ 450	$ 40	$ 48	$ 459	$ 5,711	$ 1,721	$ 745	$ 57	$ 3,225	$ 5,748	$ (37)	$ 9,851	$ 10,420	$ (570)
554		HALSTEAD AVE	6,467	$534,500	$ 3,229	$ 293	$ 66	$ 92	$ 369	$ 20	$ 39	$ 229	$ 4,338	$ 861	$ 607	$ 28	$ 1,613	$ 3,109	$ 1,229	$ 8,082	$ 5,210	$ 2,872
629		HALSTEAD AVE	9,626	$452,400	$ 2,733	$ 858	$ 56	$ 78	$ 312	$100	$ 33	$ 672	$ 4,842	$ 2,520	$ 904	$141	$ 4,722	$ 8,286	$ (3,444)	$ 6,840	$ 25,943	$ (19,103)
635		HALSTEAD AVE	6,430	$424,400	$ 2,564	$ 429	$ 52	$ 73	$ 293	$ 50	$ 31	$ 336	$ 3,828	$ 1,260	$ 604	$ 70	$ 2,361	$ 4,295	$ (467)	$ 6,417	$ 12,971	$ (6,554)
427		UNION AVE	5,097	$508,600	$ 3,073	$ 397	$ 63	$ 88	$ 351	$ 29	$ 37	$ 311	$ 4,347	$ 1,165	$ 478	$ 40	$ 2,182	$ 3,866	$ 481	$ 7,690	$ 7,433	$ 257
429		UNION AVE	5,209	$502,100	$ 3,033	$ 397	$ 62	$ 86	$ 346	$ 29	$ 37	$ 311	$ 4,301	$ 1,165	$ 489	$ 40	$ 2,182	$ 3,876	$ 425	$ 7,592	$ 7,433	$ 159

Net Fiscal Impact of Redevelopment

On **Table 17**, we use the redevelopment fiscal building blocks from Table 2 to create totals to compare with the current fiscal impacts calculated on Table 16.

Looking altogether at the 54 properties in this category in Mamaroneck SD, we observe that redevelopment of all 54 properties yields average net positive results for both the Village and Mamaroneck SD.

Similarly, for the nine properties in this category in Rye Neck SD, we observe that all nine properties yield average net positive results from redevelopment for both the Village and the School District.

Table 17. Net Fiscal Impact from Change in Use—Category 6: Owner-Occupied Homes Redeveloping As Townhomes

							Adjusted Rutgers Model					Local School Attraction					Non-Householder Population					Average	Average
Address	Dir	Street	Current Assessment	New Use	Estimated Redeveloped Value	Net Fiscal Impact of Current Use--Village	Net Fiscal Impact of Current Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of Change--Village	Net Fiscal Impact of New Use--School District	Debt Service Adjustment for Current Elementary Students	Net Fiscal Impact of Change--School District	Net Fiscal Impact of Change--Village	Net Fiscal Impact of Change--School District
Mamaroneck SD (54)																								
787		ALLING ST	$343,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (3,366)	$ (11,680)	$ 6,316	$ 9,682	$ 5,236	$ 1,363	$ 18,280	$ 5,382	$ 8,748	$(10,256)	$ 1,363	$ 2,788	$ 6,616	$ 9,982	$ (924)	$ 1,363	$ 12,120	$ 9,471	$ 11,062
135		CENTER AVE	$432,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (9,049)	$ (41,788)	$ 5,479	$ 14,528	$ 8,100	$ 3,322	$ 53,209	$ 4,918	$ 13,967	$ (4,949)	$ 3,322	$ 40,160	$ 5,987	$ 15,036	$ 2,820	$ 3,322	$ 47,929	$ 14,511	$ 47,100
148		CENTER AVE	$533,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (312)	$ (6,911)	$ 6,316	$ 6,628	$ 5,236	$ 1,183	$ 13,330	$ 5,382	$ 5,694	$(10,256)	$ 1,183	$ (2,162)	$ 6,616	$ 6,928	$ (924)	$ 1,183	$ 7,170	$ 6,417	$ 6,113
156		CENTER AVE	$432,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (7,856)	$ (36,346)	$ 6,316	$ 14,172	$ 5,236	$ 3,550	$ 45,133	$ 5,382	$ 13,238	$(10,256)	$ 3,550	$ 29,641	$ 6,616	$ 14,472	$ (924)	$ 3,550	$ 38,973	$ 13,961	$ 37,915
165		CENTER AVE	$431,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (9,067)	$ (41,801)	$ 5,479	$ 14,546	$ 8,100	$ 3,322	$ 53,223	$ 4,918	$ 13,985	$ (4,949)	$ 3,322	$ 40,174	$ 5,987	$ 15,054	$ 2,820	$ 3,322	$ 47,943	$ 14,528	$ 47,113
213		CENTER AVE	$440,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (5,127)	$ (25,825)	$ 5,479	$ 10,606	$ 8,100	$ 2,214	$ 36,139	$ 4,918	$ 10,045	$ (4,949)	$ 2,214	$ 23,090	$ 5,987	$ 11,114	$ 2,820	$ 2,214	$ 30,859	$ 10,588	$ 30,029
235		CENTER AVE	$474,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (4,888)	$ (25,370)	$ 5,479	$ 10,367	$ 8,100	$ 2,214	$ 35,684	$ 4,918	$ 9,806	$ (4,949)	$ 2,214	$ 22,635	$ 5,987	$ 10,875	$ 2,820	$ 2,214	$ 30,404	$ 10,349	$ 29,574
243		CENTER AVE	$551,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (8,229)	$ (40,195)	$ 5,479	$ 13,708	$ 8,100	$ 3,322	$ 51,617	$ 4,918	$ 13,147	$ (4,949)	$ 3,322	$ 38,568	$ 5,987	$ 14,216	$ 2,820	$ 3,322	$ 46,337	$ 13,691	$ 45,507
125		GRAND ST	$418,000	1 Washingtonville 2-BR Townhome + 2 Washingtonville 3-	$ 2,380,000	$ (240)	$ (2,033)	$ 8,637	$ 8,877	$ 10,718	$ 710	$ 13,462	$ 7,609	$ 7,849	$(10,077)	$ 710	$ (7,333)	$ 9,295	$ 9,535	$ 2,358	$ 710	$ 5,102	$ 8,753	$ 3,743
165		GRAND ST	$342,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (755)	$ (3,559)	$ 6,316	$ 7,071	$ 5,236	$ 682	$ 9,476	$ 5,382	$ 6,137	$(10,256)	$ 682	$ (6,016)	$ 6,616	$ 7,371	$ (924)	$ 682	$ 3,316	$ 6,859	$ 2,259
179		GRAND ST	$687,000	2 Washingtonville 2-BR Townhomes + 3 Washingtonville 3-BR Townhomes	$ 3,890,000	$ (1,544)	$ (7,077)	$ 15,516	$ 17,060	$ 18,818	$ 1,363	$ 27,259	$ 14,071	$ 15,615	$(15,026)	$ 1,363	$ (6,585)	$ 16,532	$ 18,076	$ 5,178	$ 1,363	$ 13,619	$ 16,917	$ 11,431
196		GRAND ST	$400,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (3,667)	$ (17,071)	$ 6,316	$ 9,983	$ 5,236	$ 1,675	$ 23,982	$ 5,382	$ 9,049	$(10,256)	$ 1,675	$ 8,490	$ 6,616	$ 10,283	$ (924)	$ 1,675	$ 17,822	$ 9,772	$ 16,764
222		GRAND ST	$521,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (5,951)	$ (26,663)	$ 9,474	$ 15,425	$ 7,854	$ 2,513	$ 37,030	$ 8,073	$ 14,024	$(15,384)	$ 2,513	$ 13,792	$ 9,924	$ 15,875	$ (1,386)	$ 2,513	$ 27,790	$ 15,108	$ 26,204
234		GRAND ST	$405,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (3,848)	$ (17,004)	$ 9,474	$ 13,322	$ 7,854	$ 1,675	$ 26,533	$ 8,073	$ 11,921	$(15,384)	$ 1,675	$ 3,295	$ 9,924	$ 13,772	$ (1,386)	$ 1,675	$ 17,293	$ 13,005	$ 15,707
250		GRAND ST	$376,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (3,651)	$ (17,392)	$ 5,479	$ 9,130	$ 8,100	$ 1,675	$ 27,167	$ 4,918	$ 8,569	$ (4,949)	$ 1,675	$ 14,118	$ 5,987	$ 9,638	$ 2,820	$ 1,675	$ 21,887	$ 9,113	$ 21,057
260		GRAND ST	$370,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (3,754)	$ (17,472)	$ 6,316	$ 10,070	$ 5,236	$ 1,675	$ 24,383	$ 5,382	$ 9,136	$(10,256)	$ 1,675	$ 8,891	$ 6,616	$ 10,370	$ (924)	$ 1,675	$ 18,223	$ 9,858	$ 17,166
270		GRAND ST	$377,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (790)	$ (6,167)	$ 6,316	$ 7,106	$ 5,236	$ 838	$ 12,241	$ 5,382	$ 6,172	$(10,256)	$ 838	$ (3,251)	$ 6,616	$ 7,406	$ (924)	$ 838	$ 6,081	$ 6,895	$ 5,023
271		GRAND ST	$493,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (2,452)	$ (9,673)	$ 6,316	$ 8,768	$ 5,236	$ 1,363	$ 16,273	$ 5,382	$ 7,834	$(10,256)	$ 1,363	$ 781	$ 6,616	$ 9,068	$ (924)	$ 1,363	$ 10,113	$ 8,556	$ 9,055

975	LOUISE AVE	$399,000	2 Washingtonville 2-BR Townhomes + 1 Washingtonville 3-BR Townhome	$ 2,150,000	$ (368)	$ (2,167)	$ 7,800	**$ 8,168**	$ 13,582	$ 617	**$ 16,366**	$ 7,145	**$ 7,513**	$ (4,770)	$ 617	**$ (1,986)**	$ 8,666	**$ 9,034**	$ 6,102	$ 617	**$ 8,886**	**$ 8,239**	**$ 7,755**
1025	LOUISE AVE	$439,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (5,333)	$ (30,015)	$ 6,316	**$ 11,649**	$ 5,236	$ 1,880	**$ 37,130**	$ 5,382	**$ 10,715**	$(10,256)	$ 1,880	**$ 21,638**	$ 6,616	**$ 11,949**	$ (924)	$ 1,880	**$ 30,970**	**$ 11,438**	**$ 29,913**
119	MADISON ST	$320,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (1,313)	$ (11,679)	$ 5,479	**$ 6,792**	$ 8,100	$ 1,366	**$ 21,145**	$ 4,918	**$ 6,231**	$ (4,949)	$ 1,366	**$ 8,096**	$ 5,987	**$ 7,300**	$ 2,820	$ 1,366	**$ 15,865**	**$ 6,774**	**$ 15,036**
139	MADISON ST	$498,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (3,165)	$ (25,258)	$ 5,479	**$ 8,644**	$ 8,100	$ 2,732	**$ 36,090**	$ 4,918	**$ 8,083**	$ (4,949)	$ 2,732	**$ 23,041**	$ 5,987	**$ 9,152**	$ 2,820	$ 2,732	**$ 30,810**	**$ 8,626**	**$ 29,981**
150	MADISON ST	$352,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (2,311)	$ (11,146)	$ 9,474	**$ 11,785**	$ 7,854	$ 1,107	**$ 20,107**	$ 8,073	**$ 10,384**	$(15,384)	$ 1,107	**$ (3,131)**	$ 9,924	**$ 12,235**	$ (1,386)	$ 1,107	**$ 10,867**	**$ 11,468**	**$ 9,281**
155	MADISON ST	$390,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (818)	$ (10,742)	$ 5,479	**$ 6,297**	$ 8,100	$ 1,366	**$ 20,209**	$ 4,918	**$ 5,736**	$ (4,949)	$ 1,366	**$ 7,160**	$ 5,987	**$ 6,805**	$ 2,820	$ 1,366	**$ 14,929**	**$ 6,279**	**$ 14,099**
156	MADISON ST	$419,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (1,379)	$ (10,250)	$ 5,479	**$ 6,858**	$ 8,100	$ 1,107	**$ 19,457**	$ 4,918	**$ 6,297**	$ (4,949)	$ 1,107	**$ 6,408**	$ 5,987	**$ 7,366**	$ 2,820	$ 1,107	**$ 14,177**	**$ 6,840**	**$ 13,347**
163	MADISON ST	$382,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (893)	$ (10,849)	$ 5,479	**$ 6,372**	$ 8,100	$ 1,366	**$ 20,316**	$ 4,918	**$ 5,811**	$ (4,949)	$ 1,366	**$ 7,267**	$ 5,987	**$ 6,880**	$ 2,820	$ 1,366	**$ 15,036**	**$ 6,354**	**$ 14,206**
166	MADISON ST	$365,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (9,525)	$ (42,684)	$ 5,479	**$ 15,004**	$ 8,100	$ 3,322	**$ 54,106**	$ 4,918	**$ 14,443**	$ (4,949)	$ 3,322	**$ 41,057**	$ 5,987	**$ 15,512**	$ 2,820	$ 3,322	**$ 48,826**	**$ 14,987**	**$ 47,996**
173	MADISON ST	$405,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (3,817)	$ (26,502)	$ 5,479	**$ 9,296**	$ 8,100	$ 2,732	**$ 37,335**	$ 4,918	**$ 8,735**	$ (4,949)	$ 2,732	**$ 24,286**	$ 5,987	**$ 9,804**	$ 2,820	$ 2,732	**$ 32,055**	**$ 9,278**	**$ 31,225**
176	MADISON ST	$490,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (4,754)	$ (25,156)	$ 5,479	**$ 10,233**	$ 8,100	$ 2,214	**$ 35,470**	$ 4,918	**$ 9,672**	$ (4,949)	$ 2,214	**$ 22,421**	$ 5,987	**$ 10,741**	$ 2,820	$ 2,214	**$ 30,190**	**$ 10,215**	**$ 29,360**
214	MADISON ST	$335,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (2,051)	$ (11,374)	$ 6,316	**$ 8,367**	$ 5,236	$ 1,107	**$ 17,717**	$ 5,382	**$ 7,433**	$(10,256)	$ 1,107	**$ 2,225**	$ 6,616	**$ 8,667**	$ (924)	$ 1,107	**$ 11,557**	**$ 8,155**	**$ 10,499**
227	MADISON ST	$355,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (1,077)	$ (11,211)	$ 5,479	**$ 6,556**	$ 8,100	$ 1,366	**$ 20,677**	$ 4,918	**$ 5,995**	$ (4,949)	$ 1,366	**$ 7,628**	$ 5,987	**$ 7,064**	$ 2,820	$ 1,366	**$ 15,397**	**$ 6,539**	**$ 14,567**
243	MADISON ST	$591,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ 597	$ (8,053)	$ 5,479	**$ 4,882**	$ 8,100	$ 1,366	**$ 17,519**	$ 4,918	**$ 4,321**	$ (4,949)	$ 1,366	**$ 4,470**	$ 5,987	**$ 5,390**	$ 2,820	$ 1,366	**$ 12,239**	**$ 4,865**	**$ 11,410**
257	MADISON ST	$345,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (4,247)	$ (27,305)	$ 5,479	**$ 9,726**	$ 8,100	$ 2,732	**$ 38,138**	$ 4,918	**$ 9,165**	$ (4,949)	$ 2,732	**$ 25,089**	$ 5,987	**$ 10,234**	$ 2,820	$ 2,732	**$ 32,858**	**$ 9,708**	**$ 32,028**
261	MADISON ST	$535,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (2,913)	$ (24,763)	$ 5,479	**$ 8,392**	$ 8,100	$ 2,732	**$ 35,595**	$ 4,918	**$ 7,831**	$ (4,949)	$ 2,732	**$ 22,546**	$ 5,987	**$ 8,900**	$ 2,820	$ 2,732	**$ 30,315**	**$ 8,375**	**$ 29,486**
335	MT PLEASANT AVE	$460,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (1,809)	$ (17,849)	$ 20,849	**$ 22,658**	$ 33,733	$ 2,025	**$ 53,608**	$ 19,821	**$ 21,630**	$ 12,938	$ 2,025	**$ 32,813**	$ 21,507	**$ 23,316**	$ 25,371	$ 2,025	**$ 45,246**	**$ 22,534**	**$ 43,889**
136	PELHAM ST	$346,000	1 Washingtonville 2-BR Townhome + 2 Washingtonville 3-	$ 2,380,000	$ (775)	$ (4,409)	$ 8,637	**$ 9,412**	$ 10,718	$ 552	**$ 15,679**	$ 7,609	**$ 8,384**	$(10,077)	$ 552	**$ (5,116)**	$ 9,295	**$ 10,070**	$ 2,358	$ 552	**$ 7,319**	**$ 9,288**	**$ 5,961**
729	PLAZA AVE	$530,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (2,698)	$ (15,331)	$ 6,316	**$ 9,014**	$ 5,236	$ 1,675	**$ 22,242**	$ 5,382	**$ 8,080**	$(10,256)	$ 1,675	**$ 6,750**	$ 6,616	**$ 9,314**	$ (924)	$ 1,675	**$ 16,082**	**$ 8,803**	**$ 15,025**
755	PLAZA AVE	$340,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (1,092)	$ (6,662)	$ 6,316	**$ 7,408**	$ 5,236	$ 838	**$ 12,736**	$ 5,382	**$ 6,474**	$(10,256)	$ 838	**$ (2,756)**	$ 6,616	**$ 7,708**	$ (924)	$ 838	**$ 6,576**	**$ 7,197**	**$ 5,518**
133	PROSPECT AVE	$545,000	3 3-BR Townhomes	$ 4,500,000	$ (2,083)	$ (13,273)	$ 22,893	**$ 24,976**	$ 33,144	$ 1,468	**$ 47,885**	$ 21,492	**$ 23,575**	$ 9,906	$ 1,468	**$ 24,647**	$ 23,343	**$ 25,426**	$ 23,901	$ 1,468	**$ 38,642**	**$ 24,659**	**$ 37,058**
1	STAUB CT	$510,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (2,758)	$ (14,397)	$ 20,849	**$ 23,607**	$ 33,733	$ 1,760	**$ 49,890**	$ 19,821	**$ 22,579**	$ 12,938	$ 1,760	**$ 29,095**	$ 21,507	**$ 24,265**	$ 25,371	$ 1,760	**$ 41,528**	**$ 23,483**	**$ 40,171**
6	STAUB CT	$430,000	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ (1,656)	$ (8,394)	$ 26,436	**$ 28,092**	$ 45,370	$ 1,173	**$ 54,937**	$ 25,314	**$ 26,970**	$ 19,272	$ 1,173	**$ 28,839**	$ 27,452	**$ 29,108**	$ 34,808	$ 1,173	**$ 44,375**	**$ 28,056**	**$ 42,717**
7	STAUB CT	$469,000	2 2-BR Townhomes + 2 3-BR Townhomes	$ 5,200,000	$ 636	$ (798)	$ 26,436	**$ 25,800**	$ 45,370	$ 587	**$ 46,755**	$ 25,314	**$ 24,678**	$ 19,272	$ 587	**$ 20,657**	$ 27,452	**$ 26,816**	$ 34,808	$ 587	**$ 36,193**	**$ 25,765**	**$ 34,535**

411		WARD AVE	$420,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (2,500)	$ (12,684)	$ 20,849	**$ 23,349**	$ 33,733	$ 1,136	**$ 47,553**	$ 19,821	**$ 22,321**	$ 12,938	$ 1,136	**$ 26,758**	$ 21,507	**$ 24,007**	$ 25,371	$ 1,136	**$ 39,191**	**$ 23,226**	**$ 37,834**
415		WARD AVE	$570,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (3,938)	$ (19,828)	$ 20,849	**$ 24,787**	$ 33,733	$ 1,704	**$ 55,265**	$ 19,821	**$ 23,759**	$ 12,938	$ 1,704	**$ 34,470**	$ 21,507	**$ 25,445**	$ 25,371	$ 1,704	**$ 46,903**	**$ 24,664**	**$ 45,546**
420		WARD AVE	$406,000	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (1,506)	$ (8,715)	$ 20,849	**$ 22,355**	$ 33,733	$ 1,173	**$ 43,621**	$ 19,821	**$ 21,327**	$ 12,938	$ 1,173	**$ 22,826**	$ 21,507	**$ 23,013**	$ 25,371	$ 1,173	**$ 35,259**	**$ 22,232**	**$ 33,902**
138		WASHINGTON ST	$477,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (6,431)	$ (41,500)	$ 5,479	**$ 11,910**	$ 8,100	$ 4,099	**$ 53,698**	$ 4,918	**$ 11,349**	$ (4,949)	$ 4,099	**$ 40,649**	$ 5,987	**$ 12,418**	$ 2,820	$ 4,099	**$ 48,418**	**$ 11,892**	**$ 47,589**
155		WASHINGTON ST	$520,000	1 Washingtonville 2-BR Townhome + 1 Washingtonville 3-	$ 1,510,000	$ (2,623)	$ (15,465)	$ 5,479	**$ 8,102**	$ 8,100	$ 1,675	**$ 25,240**	$ 4,918	**$ 7,541**	$ (4,949)	$ 1,675	**$ 12,191**	$ 5,987	**$ 8,610**	$ 2,820	$ 1,675	**$ 19,960**	**$ 8,085**	**$ 19,131**
170		WASHINGTON ST	$419,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (4,183)	$ (26,315)	$ 9,474	**$ 13,657**	$ 7,854	$ 2,732	**$ 36,901**	$ 8,073	**$ 12,256**	$(15,384)	$ 2,732	**$ 13,663**	$ 9,924	**$ 14,107**	$ (1,386)	$ 2,732	**$ 27,661**	**$ 13,340**	**$ 26,075**
235		WASHINGTON ST	$250,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (1,684)	$ (7,866)	$ 6,316	**$ 8,000**	$ 5,236	$ 838	**$ 13,940**	$ 5,382	**$ 7,066**	$(10,256)	$ 838	**$ (1,552)**	$ 6,616	**$ 8,300**	$ (924)	$ 838	**$ 7,780**	**$ 7,789**	**$ 6,723**
118		WAVERLY AVE	$402,000	1 Washingtonville 2-BR Townhome + 4 Washingtonville 3-	$ 4,120,000	$ (4,594)	$ (25,127)	$ 16,413	**$ 21,007**	$ 15,954	$ 2,840	**$ 43,921**	$ 14,653	**$ 19,247**	$(20,333)	$ 2,840	**$ 7,634**	$ 17,266	**$ 21,860**	$ 1,434	$ 2,840	**$ 29,401**	**$ 20,704**	**$ 26,985**
139		WAVERLY AVE	$459,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (4,112)	$ (21,943)	$ 6,316	**$ 10,428**	$ 5,236	$ 2,367	**$ 29,546**	$ 5,382	**$ 9,494**	$(10,256)	$ 2,367	**$ 14,054**	$ 6,616	**$ 10,728**	$ (924)	$ 2,367	**$ 23,386**	**$ 10,217**	**$ 22,328**
163		WAVERLY AVE	$400,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (4,661)	$ (22,732)	$ 6,316	**$ 10,977**	$ 5,236	$ 2,367	**$ 30,335**	$ 5,382	**$ 10,043**	$(10,256)	$ 2,367	**$ 14,843**	$ 6,616	**$ 11,277**	$ (924)	$ 2,367	**$ 24,175**	**$ 10,766**	**$ 23,118**
222		WAVERLY AVE	$430,000	3 Washingtonville 3-BR Townhomes	$ 2,610,000	$ (4,071)	$ (24,752)	$ 9,474	**$ 13,545**	$ 7,854	$ 2,840	**$ 35,446**	$ 8,073	**$ 12,144**	$(15,384)	$ 2,840	**$ 12,208**	$ 9,924	**$ 13,995**	$ (1,386)	$ 2,840	**$ 26,206**	**$ 13,228**	**$ 24,620**
238		WAVERLY AVE	$404,000	2 Washingtonville 3-BR Townhomes	$ 1,740,000	$ (6,929)	$ (40,353)	$ 6,316	**$ 13,245**	$ 5,236	$ 4,260	**$ 49,849**	$ 5,382	**$ 12,311**	$(10,256)	$ 4,260	**$ 34,357**	$ 6,616	**$ 13,545**	$ (924)	$ 4,260	**$ 43,689**	**$ 13,034**	**$ 42,632**
Rye Neck SD (9)																									
621	N	BARRY AVE	$505,200	1 2-BR Townhome + 2 3-BR Townhomes	$ 4,100,000	$ (2,602)	$ (6,458)	$ 20,859	**$ 23,461**	$ 40,886	$ 1,904	**$ 49,247**	$ 20,596	**$ 23,198**	$ 27,807	$ 1,904	**$ 36,168**	$ 21,240	**$ 23,842**	$ 32,094	$ 1,904	**$ 40,455**	**$ 23,500**	**$ 41,957**
1115	E	BOSTON POST RD	$541,500	2 2-BR Townhomes + 1 3-BR Townhomes	$ 3,700,000	$ 723	$ (1,221)	$ 18,810	**$ 18,087**	$ 40,774	$ 824	**$ 42,819**	$ 18,827	**$ 18,104**	$ 28,596	$ 824	**$ 30,641**	$ 19,365	**$ 18,642**	$ 32,421	$ 824	**$ 34,466**	**$ 18,278**	**$ 35,976**
423		HALSTEAD AVE	$466,100	2 3-BR Townhomes	$ 3,000,000	$ (2,601)	$ (7,818)	$ 15,272	**$ 17,873**	$ 27,332	$ 1,225	**$ 36,375**	$ 14,910	**$ 17,511**	$ 18,012	$ 1,225	**$ 27,055**	$ 15,410	**$ 18,011**	$ 21,178	$ 1,225	**$ 30,221**	**$ 17,798**	**$ 31,217**
544		HALSTEAD AVE	$651,500	2 2-BR Townhomes + 1 3-BR Townhomes	$ 3,700,000	$ (37)	$ (570)	$ 18,810	**$ 18,847**	$ 40,774	$ 889	**$ 42,233**	$ 18,827	**$ 18,864**	$ 28,596	$ 889	**$ 30,055**	$ 19,365	**$ 19,402**	$ 32,421	$ 889	**$ 33,880**	**$ 19,038**	**$ 35,389**
554		HALSTEAD AVE	$534,500	2 3-BR Townhomes	$ 3,000,000	$ 1,229	$ 2,872	$ 15,272	**$ 14,043**	$ 27,332	$ 445	**$ 24,905**	$ 14,910	**$ 13,681**	$ 18,012	$ 445	**$ 15,585**	$ 15,410	**$ 14,181**	$ 21,178	$ 445	**$ 18,751**	**$ 13,968**	**$ 19,747**
629		HALSTEAD AVE	$452,400	3 3-BR Townhomes	$ 4,500,000	$ (3,444)	$ (19,103)	$ 22,908	**$ 26,352**	$ 40,998	$ 2,376	**$ 62,477**	$ 22,365	**$ 25,809**	$ 27,018	$ 2,376	**$ 48,497**	$ 23,115	**$ 26,559**	$ 31,767	$ 2,376	**$ 53,246**	**$ 26,240**	**$ 54,740**
635		HALSTEAD AVE	$424,400	2 3-BR Townhomes	$ 3,000,000	$ (467)	$ (6,554)	$ 15,272	**$ 15,739**	$ 27,332	$ 1,188	**$ 35,074**	$ 14,910	**$ 15,377**	$ 18,012	$ 1,188	**$ 25,754**	$ 15,410	**$ 15,877**	$ 21,178	$ 1,188	**$ 28,920**	**$ 15,664**	**$ 29,916**
427		UNION AVE	$508,600	2 2-BR Townhomes	$ 2,200,000	$ 481	$ 257	$ 11,174	**$ 10,693**	$ 27,108	$ 612	**$ 27,463**	$ 11,372	**$ 10,891**	$ 19,590	$ 612	**$ 19,945**	$ 11,660	**$ 11,179**	$ 21,832	$ 612	**$ 22,187**	**$ 10,921**	**$ 23,198**
429		UNION AVE	$502,100	2 2-BR Townhomes	$ 2,200,000	$ 425	$ 159	$ 11,174	**$ 10,749**	$ 27,108	$ 612	**$ 27,561**	$ 11,372	**$ 10,947**	$ 19,590	$ 612	**$ 20,043**	$ 11,660	**$ 11,235**	$ 21,832	$ 612	**$ 22,285**	**$ 10,977**	**$ 23,297**

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July 5, 2018

To: Greg Cutler, Village of Mamaroneck
From: James E. Hartling, Urban Partners
Subject: Alternative Forecast Models

Consistent with our earlier discussions, we have developed and applied three alternative approaches to estimating population and school-age children impacts.

1. Adjusted Rutgers Model

The Rutgers University Center for Urban Policy calculated residential demographic multipliers for New York in 2006 based on broad demographic impacts for different housing types. Since that time, application of this model has been one standard approach. This model is now 12 years old and, while still respected for its differentiation among housing types, may be vulnerable to overall adjustments in demographic patterns such as changes in child-bearing and household living arrangements. In other words, these models were built largely based on the U.S. Census 2000 data; overall demographic patterns may have changed since then. This model was also developed for New York State as a whole; housing behavior in individual communities might vary significantly from statewide averages.

As this model might affect the analysis of demographic impacts in the Village of Mamaroneck, there are essentially three key questions:

- Has the typical population per household evolved since 2006?
- Has the share of population represented by school age children changed?
- Is the Village of Mamaroneck tracking overall New York patterns?

Typical Household Size

On **Table 1**, we display data from the 2000 and 2010 U. S. Census as well as the most recent data from the American Community Survey concerning average household size. In 2000, typical household sizes in the state, in Westchester County, and in the Village of Mamaroneck were quite similar in the range of 2.60 to 2.67 persons per household. At the point of the development of the Rutgers models for New York, it was reasonable to conclude that the population of housing units constructed in Mamaroneck would closely track New York patterns.

Table 1
Population Per Household 2000 to 2016

	State of New York	Westchester County	Village of Mamaroneck
U.S. Census 2000	2.61	2.67	2.60
U.S. Census 2010	2.57	2.65	2.65
American Community Survey--2016 (5 Yr Average)	2.63	2.76	2.66

Source: American Factfinder; Urban Partners

Since that time, typical household size has stayed constant or grown very modestly for all three jurisdictions. This may reflect slight changes in underlying demographic patterns, but may also be the result of small changes in the mix of the housing stock. At any rate, we believe that the ***Rutgers estimates of overall population change due to new housing can still be generally relied upon in Mamaroneck***—at least in terms of the application of the Rutgers model as one forecasting approach.

School Age Population

On **Table 2**, we display similar data from the 2000 and 2010 U. S. Census and the 2016 ACS concerning the age composition of the population, particularly the share represented by the school age population ages 5 to 17. In 2000, school age population statewide was 18.1% of total population. This ratio underlies the Rutgers model.

In 2000, Westchester County had a similar level of school-age population (18.1%), but the Village of Mamaroneck had only a 16.9% share--about 7% fewer school age children proportionately. Therefore, in 2000, the Rutgers model would have over-stated the number of school-age children. Since that time, following national trends, the share of school age population has declined more than 14% in New York State and 5% in Westchester County. ***Trends in the Village of Mamaroneck, however, have been contrary to these national and state trends***, with the share of school age population growing to nearly 20%--a 17% increase in share since 2000.

Therefore, at this point, the Rutgers model probably significantly overstates the number of school-age children in the typical New York community, but understates that data for Mamaroneck.

Table 2
School Age Population Share 2000 to 2016

	State of New York	Westchester County	Village of Mamaroneck
U.S. Census 2000			
Percent of Population Ages 5 to 14	14.1%	14.3%	13.4%
Percent of Population Ages 15 to 17	4.0%	3.8%	3.5%
Total School Age	**18.1%**	**18.1%**	**16.9%**
U.S. Census 2010			
Percent of Population Ages 5 to 14	12.3%	13.6%	13.6%
Percent of Population Ages 15 to 17	4.1%	4.4%	4.3%
Total School Age	**16.4%**	**18.0%**	**17.9%**
American Community Survey--2016 (5 Yr Average)			
Percent of Population Ages 5 to 14	11.8%	13.0%	15.2%
Percent of Population Ages 15 to 17	3.7%	4.2%	4.5%
Total School Age	**15.5%**	**17.2%**	**19.7%**

Source: American Factfinder; Urban Partners

Since the Rutgers Model for school age population is based on statewide demographic share largely from the 2000 census (18.1% for New York state in 2000), we propose to modify that share upward for application to this current analysis in Mamaroneck to reflect the current 19.7% share reported in the 2016 ACS. This would involve ***adding 9% (19.7% divided by 18.1% yields 109%) to the school age population estimates from the Rutgers model.***

2. Local Community & School Attraction

The Rutgers model provides an analytical approach based on statewide factors. For a community with higher property values, population density per housing unit can be higher. Similarly, for a community with especially attractive schools, the impacts from incremental housing development may vary from these averages.

To assess the impact of local community and school characteristics, we have considered population density and the presence of school-age children (SAC) for the Village of Mamaroneck and also for the two portions of the Village that are served by the Mamaroneck Union and Rye Neck Union School Districts.

To consider this overall population density, we calculate population per occupied bedroom. To consider the density of school children in a community, we observe that almost all children occupy "extra" bedrooms in each housing unit—that is, the likelihood of children in a housing unit relates to the number of bedrooms AFTER the first. Therefore, we calculate the number of school-age children (SAC) per occupied bedroom after the first.

Based on that analysis and utilizing data from the American Community Survey of 2012 to 2016 (ACS 5-Year 2016), we estimate that for Mamaroneck FSD overall population density is 0.99 per occupied bedroom with .317 SAC per occupied bedroom after the first (see **Table 3**). Population density in Rye Neck FSD is less—0.96 persons per occupied bedroom and .304 SAC per occupied bedroom after the first. However, the density of population and of SAC is greater in the portions of these districts located within the Village of Mamaroneck: for Mamaroneck FSD, there are 1.09 persons per occupied bedroom within the Village, as well as .381 SAC per occupied bedroom after the first; for Rye Neck FSD, within the Village, there is 1.00 person per occupied bedroom and .311 SAC per occupied bedroom after the first.

Table 3
Population & School Age Population Per Occupied Bedroom

	Total Population	Population In Group Quarters	Population In Households	School-Age Children (SAC)	Housing Units	Occupied Housing Units	Total Bedrooms	Bedrooms After First	Occupied Bedrooms	Occupied Bedrooms After First	Population Per Occupied Bedroom	SAC Per Occupied Bedroom After First
Mamaroneck Union FSD	29,049	372	28,677	5,839	10,989	10,604	29,851	19,115	29,049	18,445	0.99	0.317
Rye Neck Union FSD	8,834	46	8,788	1,846	3,325	3,078	9,763	6,557	9,147	6,069	0.96	0.304
Village of Mamaroneck	19,263	377	18,886	3,791	7,468	7,110	18,683	11,448	17,965	10,855	1.05	0.349
Mamaroneck SD Portion	11,517	331	11,186	2,249	4,451	4,340	10,388	6,051	10,240	5,900	1.09	0.381
Rye Neck SD Portion	7,746	46	7,700	1,542	3,017	2,770	8,295	5,397	7,725	4,955	1.00	0.311

Source: American Factfinder; Urban Partners

3. Non-Householder Population

A third approach to calculating the impact of housing patterns on population and SAC is to assess the presence and type of non-householder residents in different housing types. In effect, this analysis considers how many persons reside in a particular housing type beyond the first person (the defined householder) and what share of these "extra persons" are school-age children. We have undertaken this analysis for both the Mamaroneck FSD and Rye Neck FSD portions of the Village.

On Table 4, we isolate the non-householder population for the Village as a whole and for the two portions in different school districts. For the Village, there are 1.66 non-householders in the average household, with 32.2% of these non-householders being SAC—an average of 0.53 SAC per unit. The ratio of non-householders is somewhat smaller in the Mamaroneck SD portion of the Village (1.58 per household), but the share that is school-age is somewhat larger (32.9%). Similarly, for the Rye Neck SD portion of the Village, the number of non-householders is larger (1.78 per household), but the SAC share is somewhat smaller (31.3%).

Table 4
Non-Householder Population

	Total Population	Population In Group Quarters	Population In Households	Housing Units	Occupied Housing Units	Non-Householder Population	Non-Householders Per Household	School-Age Children (SAC)	SAC Percent of Non-Household
Village of Mamaroneck	19,263	377	18,886	7,468	7,110	11,776	1.66	3,791	32.2%
Mamaroneck SD Portion	11,517	331	11,186	4,451	4,340	6,846	1.58	2,249	32.9%
Rye Neck SD Portion	7,746	46	7,700	3,017	2,770	4,930	1.78	1,542	31.3%

Source: American Factfinder; Urban Partners

On **Table 5**, we decompose this data by housing type and rental vs. homeownership. Significant observations from this analysis include:

- In the Village as a whole, about 55% of households are owners; 45% renters. However, in the Mamaroneck FSD portion, 50% are renters while the Rye Neck FSD portion is 63% homeowners;
- About half of Mamaroneck SD homeowners live in single-family detached homes, while the other half live in a variety of structures, including nearly 30% in multi-family structures of five or more units;
- Conversely, more than 70% of Rye Neck SD homeowners live in single-family detached homes;
- More than 25% of housing units in both school districts are in buildings of two to four units and the households occupying these units have some of the largest household populations. This is particularly true for renters in two to four unit structures with the largest average household size of 3.10 persons per unit. Field observation suggests that many of these properties are subdivided formerly-single-family homes now being rented.
- Another 29% of housing units are in multi-family structures of more than five units. 80% of these units are located in the Mamaroneck SD portion of the Village. Units in these larger structures have the smallest household populations, with average household size of two persons or less per unit;
- In terms of expected school-age children (SAC), the average owner-occupied housing unit has about 0.55 SAC while the average rental unit has about 0.51 SAC;
- Rental units in two to four unit structures have the largest SAC per unit (0.68), followed by owner-occupied single-family homes (0.65);

- Housing in multi-family structures of five or more units, both owner-occupied and rental, has the smallest at 0.30 SAC per unit.

Table 5
Non-Householder & School Age Population By Housing Type

	Total Owner-Occupied Housing Units	Owner-Occupied Single Family Detached	Owner-Occupied Single Family Attached	Owner-Occupied 2-4 Unit Structure	Owner-Occupied 5+ Unit Structure	Total Renter-Occupied Housing Units	Renter-Occupied Single Family Detached	Renter-Occupied Single Family Attached	Renter-Occupied 2-4 Unit Structure	Renter-Occupied 5+ Unit Structure
Occupied Housing Units (Households)										
Village of Mamaroneck	**3,919**	2,364	186	600	769	**3,191**	522	77	1,321	1,271
Mamaroneck SD Portion	**2,170**	1,120	68	356	626	**2,170**	302	43	815	1,010
Rye Neck SD Portion	**1,749**	1,244	118	244	143	**1,021**	220	34	506	261
Population										
Village of Mamaroneck	**10,654**	7,138	467	1,548	1,491	**8,232**	1,497	175	4,101	2,459
Mamaroneck SD Portion	**5,690**	3,297	167	974	1,252	**5,496**	892	101	2,438	2,065
Rye Neck SD Portion	**4,964**	3,848	303	574	239	**2,736**	605	74	1,663	394
Non-Householder Population										
Village of Mamaroneck	**6,735**	4,774	281	948	722	**5,041**	975	98	2,780	1,188
Mamaroneck SD Portion	**3,520**	2,177	99	618	626	**3,326**	590	58	1,623	1,055
Rye Neck SD Portion	**3,215**	2,604	185	330	96	**1,715**	385	40	1,157	133
Population Per Household										
Village of Mamaroneck	**2.72**	3.02	2.51	2.58	1.94	**2.58**	2.87	2.27	3.10	1.93
Mamaroneck SD Portion	**2.62**	2.94	2.46	2.74	2.00	**2.53**	2.95	2.35	2.99	2.04
Rye Neck SD Portion	**2.84**	3.09	2.57	2.35	1.67	**2.68**	2.75	2.18	3.29	1.51
Non-Householder Population Per Household										
Village of Mamaroneck	**1.72**	2.02	1.51	1.58	0.94	**1.58**	1.87	1.27	2.10	0.93
Mamaroneck SD Portion	**1.62**	1.94	1.46	1.74	1.00	**1.53**	1.95	1.35	1.99	1.04
Rye Neck SD Portion	**1.84**	2.09	1.57	1.35	0.67	**1.68**	1.75	1.18	2.29	0.51
School-Age Children Per Household										
Village of Mamaroneck	**0.55**	0.65	0.49	0.51	0.30	**0.51**	0.60	0.41	0.68	0.30
Mamaroneck SD Portion	**0.53**	0.64	0.48	0.57	0.33	**0.50**	0.64	0.44	0.66	0.34
Rye Neck SD Portion	**0.58**	0.66	0.49	0.42	0.21	**0.53**	0.55	0.37	0.72	0.16

Source: American Factfinder; Urban Partners

On **Table 6**, we have further broken down, within each housing type, the expected population and SAC for Mamaroneck and its two school district portions for each size of unit based on bedrooms. To assess this impact we have relied on the national distribution of bedroom sizes among various housing types. (Note: direct data on this distribution among bedroom sizes by building type is not available for Mamaroneck.)

For instance, nationally, about 17% of owner-occupied single-family detached homes have two bedrooms, 52% have three bedrooms, 29% have four or more bedrooms, and only 2% have one bedroom. Conversely, 46% of rental apartments in multi-family structures of five or more units have one bedroom, 42% have two bedrooms, 8% have three bedrooms, 1% have four or more bedrooms, and 3% are studios. For some

housing/bedroom types, the likely number of units is too small for analysis (likely 12 units or less); these are labeled N/A in Table 6.

Table 6
Population & School Age Population By Housing/Bedroom Type—Non-Householder Model

	Owner-Occupied Single Family Detached	Owner-Occupied Single Family Attached	Owner-Occupied 2-4 Unit Structure	Owner-Occupied 5+ Unit Structure	Renter-Occupied Single Family Detached	Renter-Occupied Single Family Attached	Renter-Occupied 2-4 Unit Structure	Renter-Occupied 5+ Unit Structure
Population Per Household								
Mamaroneck SD Portion								
No Bedroom	N/A	N/A	N/A	1.00	N/A	N/A	N/A	1.00
One Bedroom	1.00	N/A	1.13	1.08	1.00	N/A	1.57	1.33
Two Bedrooms	1.66	1.72	2.26	2.16	1.92	2.00	3.04	2.66
Three Bedrooms	2.49	2.68	3.39	3.24	2.88	3.00	4.61	3.99
Four Or More Bedrooms	3.82	N/A	5.21	N/A	4.42	N/A	7.23	N/A
Rye Neck SD Portion								
No Bedroom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One Bedroom	1.00	N/A	1.00	1.00	N/A	N/A	1.68	1.00
Two Bedrooms	1.82	1.84	1.96	1.70	1.88	1.82	3.36	1.82
Three Bedrooms	2.73	2.76	2.94	2.55	2.82	N/A	5.04	2.73
Four Or More Bedrooms	4.20	4.22	4.49	N/A	4.24	4.21	7.72	4.19
School-Age Children Per Household								
Mamaroneck SD Portion								
No Bedroom	N/A	N/A	N/A	-	N/A	N/A	N/A	-
One Bedroom	-	N/A	0.04	0.03	-	N/A	0.19	0.11
Two Bedrooms	0.22	0.24	0.41	0.38	0.30	0.33	0.67	0.55
Three Bedrooms	0.49	0.55	0.79	0.74	0.62	0.66	1.19	0.98
Four Or More Bedrooms	0.93	N/A	1.39	N/A	1.13	N/A	2.05	N/A
Rye Neck SD Portion								
No Bedroom	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One Bedroom	-	N/A	-	-	N/A	N/A	0.21	-
Two Bedrooms	0.26	0.26	0.30	0.22	0.28	0.26	0.74	0.26
Three Bedrooms	0.54	0.55	0.61	0.49	0.57	N/A	1.26	0.54
Four Or More Bedrooms	1.00	1.01	1.09	N/A	1.01	N/A	2.10	N/A

Source: American Factfinder; Urban Partners

4. Application of Alternative Approaches to Newer Housing Types

On **Table 7**, we apply these three models to the five types of new housing units that appear to be the usual recently constructed housing types in the moratorium study area: 2- and 3-bedroom townhomes for sale; two-bedroom townhomes for rent; and one- and two-bedroom rental apartments in larger multi-family structures.

For each development type, there is some variation among the three models in terms of anticipated population and school-age children. This is most pronounced in two instances: (1) the Rutgers Model anticipates a significantly larger occupancy in one-bedroom apartments (1.67 persons versus 1.00 to 1.09 in the other models); and (2) the share of Non-Householder Population Model predicts a larger number of school age children in two-bedroom apartments of multi-family buildings (0.55 per unit versus 0.262/0.381 in the other models) for the Mamaroneck SD area.

Table 7
Application of Alternative Models

	Adjusted Rutgers Model		Local School Attraction (Bedroom After First)		Non-Householder Population	
	Population	SAC	Population	SAC	Population	SAC
Mamaroneck Union Free School District						
Two-Bedroom Townhome Owner-Occupied	2.090	0.142	2.180	0.381	1.720	0.240
Three-Bedroom Townhome Owner-Occupied	2.830	0.414	3.270	0.762	2.680	0.550
Two-Bedroom Rental Townhome	2.090	0.142	2.180	0.381	2.000	0.330
One-Bedroom Rental Apartment	1.670	0.087	1.090	0.000	1.080	0.110
Two-Bedroom Rental Apartment	2.310	0.262	2.180	0.381	2.160	0.550
Rye Neck Union Free School District						
Two-Bedroom Townhome Owner-Occupied	2.090	0.142	2.000	0.311	1.840	0.260
Three-Bedroom Townhome Owner-Occupied	2.830	0.414	3.000	0.622	2.760	0.550
Two-Bedroom Rental Townhome	2.090	0.142	2.000	0.311	1.820	0.260
One-Bedroom Rental Apartment	1.670	0.087	1.000	0.000	1.000	0.000
Two-Bedroom Rental Apartment	2.310	0.262	2.000	0.311	1.820	0.260

Source: American Factfinder; Urban Partners

To get a better sense of the scale of these variations, on **Table 8**, we apply these factors to three prototype developments—a development for sale of six three-bedroom townhomes; a development of six two-bedroom townhomes for rental; and a 20 unit multi-family rental development of 10 one-bedroom and 10 two-bedroom apartments. These are considered in each of the two school district portions of the Village.

Table 8
Estimated Population & SAC For Prototype Developments

	Adjusted Rutgers Model		Local School Attraction (Bedroom After First)		Non-Householder Population	
	Population	SAC	Population	SAC	Population	SAC
Mamaroneck Union Free School District						
6 Three-Bedroom Townhomes Owner-Occupied	17	2	20	5	16	3
6 Two-Bedroom Rental Townhomes	13	1	13	2	12	2
20-Unit Multi-Family (10 One-BR; 10 Two-BR)	40	3	33	4	32	7
Rye Neck Union Free School District						
6 Three-Bedroom Townhomes Owner-Occupied	17	2	18	4	17	3
6 Two-Bedroom Rental Townhomes	13	1	12	2	11	2
20-Unit Multi-Family (10 One-BR; 10 Two-BR)	40	3	30	3	28	3

Source: American Factfinder; Urban Partners

Within the Mamaroneck SD area, for the development of six sale townhomes, the three models anticipate between 16 and 20 residents, with somewhere between 2 and 5 of them being school age. For the group of six rental two-bedroom townhomes, 12 or 13 residents are anticipated with one or two of them school age. The 20-unit multi-family building yields 32 to 40 residents, with from 3 to 7 being school age.

Within the Rye Neck SD area, the three models generate a tighter range of results. For the development of six sale townhomes, the three models anticipate 17 or 18 residents, with somewhere between 2 and 4 of them being school age. For the group of six rental two-bedroom townhomes, 11 to 13 residents are anticipated with one or two of them school age. The 20-unit multi-family building yields 28 to 40 residents, with 3 being school age.

APPENDIX B: FISCAL IMPACT OF SINGLE-FAMILY HOMES RESULTING FROM SUBDIVISIONS IN RESIDENTIAL NEIGHBORHOODS

Parallel to the fiscal analysis of redevelopment scenarios in the zoning districts impacted by the moratorium, we have also examined the fiscal impact of incremental single family home development on larger currently developed lots throughout the Village.

Individual Lot Development Scenarios

Recent incremental development activity on these currently developed single family lots has generally involved two new home types:

1. a lot is purchased and subdivided into quarter acre lots, either with the existing house being demolished or that house being rehabilitated. The typical new home constructed in this scenario is a four-bedroom, three bath home of about 2,700 SF selling for approximately $1 million;
2. a lot is purchased and subdivided into quarter acre lots; a new duplex is constructed for rent on each parcel; that is, there are two units on each new parcel. Each half of the duplex is a three-bedroom, two bath unit with about 1,800 SF of living space. Typical rent is $4200 per month for each side of the property.

Population & School Enrollment Characteristics of Typical New Homes

To assess the fiscal impact of each of these typical new home developments, we need to establish the population and school age children (SAC) likely to reside within each utilizing the three models described in our more extensive report on Moratorium redevelopment (see **Table 1**):

- Adjusted Rutgers Model
- Local School Attraction Model
- Non-Householder Population Model.

APPENDIX B: FISCAL IMPACT OF SINGLE-FAMILY HOMES RESULTING FROM SUBDIVISIONS IN RESIDENTIAL NEIGHBORHOODS

Table 1: Population & School Age Children Per New Housing Unit

	Adjusted Rutgers		Local School Attr'n		Non-Householder	
Incremental Development	Estimated Population	Total Estimated SAC	Estimated Population	Total Estimated SAC	Estimated Population	Total Estimated SAC
Mamaroneck SD						
Four-Bedroom Single Family Home For Sale	3.67	1.14	4.36	1.14	3.82	0.93
Three-Bedroom Rental Duplex	2.83	0.41	3.27	0.76	3.00	0.66
Rye Neck SD						
Four-Bedroom Single Family Home For Sale	3.67	1.14	4.00	0.93	4.20	1.00
Three-Bedroom Rental Duplex	2.83	0.41	3.00	0.62	2.73	0.54

Depending on the model, anticipated population in a new owner-occupied four-bedroom single family detached home is in the 3.67 to 4.36 range in Mamaroneck School District and in the 3.67 to 4.20 range in the Rye Neck School District. The expected number of School Age Children (SAC) is 0.93 to 1.14 in both school districts. For the three-bedroom rental duplex, expected new population is 2.83 to 3.27 for each side of the duplex in Mamaroneck SD and 2.73 to 3.00 in Rye Neck SD. SAC is 0.41 to 0.76 per unit in Mamaroneck SD and 0.41 to 0.62 in Rye Neck.

Fiscal Impact of New Development

On **Table 2**, we apply the fiscal factors for the Village and the two school districts described in the primary moratorium report to the population and SAC factors for each of the three models from Table 1 to assess the fiscal impact of each of these components under each of the three models.

Table 2: Fiscal Impact Per New Housing Unit

	Adjusted Rutgers Model		Local School Attraction		Non-Householder	
Incremental Development	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of New Use--School District	Net Fiscal Impact of New Use--Village	Net Fiscal Impact of New Use--School District
Mamaroneck SD						
Four-Bedroom Single Family Home For Sale	$ 3,379	$ (11,706)	$ 2,616	$ (11,706)	$ 3,214	$ (7,085)
Three-Bedroom Rental Duplex	$ (262)	$ (3,804)	$ (718)	$ (11,550)	$ (408)	$ (9,305)
Rye Neck SD						
Four-Bedroom Single Family Home For Sale	$ 3,380	$ (9,942)	$ 3,006	$ (5,325)	$ 2,850	$ (6,864)
Three-Bedroom Rental Duplex	$ (245)	$ (3,117)	$ (426)	$ (7,777)	$ (147)	$ (5,975)

APPENDIX B: FISCAL IMPACT OF SINGLE-FAMILY HOMES RESULTING FROM SUBDIVISIONS IN RESIDENTIAL NEIGHBORHOODS

For the Village, the fiscal impact of adding a $1 million four-bedroom house is positive, while the impact of adding a rental three-bedroom duplex is essentially neutral. Note that we value the rental duplex at $390,000 per unit based on the $218.75 per square foot valuation for rental units developed by the Village staff. These conclusions are consistent across all three models.

On the other hand, averaged across the three models, the four-bedroom home generates an increase in enrollment of about 1.01 per home in Mamaroneck SD and 0.89 per home in Rye Neck. The cost of servicing this increased enrollment significantly exceeds the incremental tax revenues for both districts. Similarly, the new three-bedroom duplex generates an increase in enrollment of 0.57 per unit in Mamaroneck SD and 0.46 per unit in Rye Neck, with service cost increases again significantly exceeding incremental revenues.

Village of Mamaroneck Moratorium

TRAFFIC STUDY



I. INTRODUCTION/ EXECUTIVE SUMMARY

This Executive Summary provides a brief overview of the Village of Mamaroneck Moratorium Study related to the traffic analysis. For a detailed analysis of the selection process of redevelopment parcels and analysis of areas outside of transportation and traffic, refer to the Redevelopment Parcel Identification Analysis report.

A. Project Description

The purpose of the Village of Mamaroneck Moratorium study is to evaluate the effects of a Village-wide residential redevelopment scenario (Reasonable Build-Out Scenario) on several environmental aspects of the town including traffic conditions. The purpose of this report is to determine the effects of the Reasonable Build-Out Scenario on the neighborhood traffic network, and identify intersection improvements to mitigate these effects if necessary. The study area and traffic analysis locations are shown in *Figure 1.* As shown, the traffic study area contains intersections along the primary traffic corridors of Boston Post Road (US 1) and Mamaroneck Avenue which traverse through the Village.

Figure 1 – Study Area and Traffic Analysis Locations



B. Summary of Findings

This report provides an evaluation of the traffic operations associated with the anticipated Reasonable Build-Out Scenario identified in the Redevelopment Parcel Identification Analysis (included as a separate report). Although the forecasted traffic volumes in the Reasonable Build-Out Scenario are projected to modestly increase compared to the existing traffic volumes at study area intersections, the Reasonable Build-Out Scenario is expected to increase the intensity and number of congested lane groups (operating at LOS E or F or with a v/c ratio of 0.90 or more) at the six study area intersections compared to the existing traffic conditions. *Table 1* shows the number of congested lane groups at study area intersections in the existing, Reasonable Build-Out, and Reasonable Build-Out with Improvements conditions in the four analyzed peak hours. As shown, the number of congested lane groups would increase between the existing conditions and future Reasonable Build-Out in all analyzed peak hours, and would decrease close to existing condition level after incorporating the recommended intersection improvements.

Table 1 – Congested Lane Groups by Peak Hour and Condition

Condition	Peak Hour			
	AM	**Midday**	**PM**	**Sat Midday**
Existing	4	1	7	5
Reasonable Build-Out	**5**	**3**	**9**	**6**
Reasonable Build-Out w/ Improvements	*4*	*0*	*9*	*2*

Note: A signalized lane grouping operating at LOS E or F or with a v/c ratio of 0.90 or more is considered congested.

II. DATA REVIEW & COLLECTION

As discussed previously, six traffic analysis locations were selected along the main traffic corridors through the Village including Post Road (US 1) and Mamaroneck Avenue, with the selected intersections listed below. New traffic data was collected during mid-June 2018 prior the end of the school year. The data collected included vehicular, pedestrian, and bicycle data. The traffic data collection locations are shown in *Figure 1* and listed below. Previous traffic studies from the past two years in the study area were reviewed to gather a comprehensive data set in order to develop a complete understanding of the study area, and verify existing traffic counts.

A. Traffic Data

The traffic data collected for this project included the following:

Turning Movement Counts (TMCs) with Classification – Traffic TMCs with vehicle classification, as well as pedestrians and bicycles counts, were conducted at six (6) intersections on Thursday, June 14, 2018, and Saturday, June 16th, 2018. Counts were performed at the following locations (see *Figure 1*):

1) Mamaroneck Avenue and Andrew Street/North Barry Avenue Ext
2) Mamaroneck Avenue and Waverly Avenue/Van Ranst Place
3) Mamaroneck Avenue and Mt. Pleasant Avenue/Halstead Avenue
4) Mamaroneck Avenue and E Boston Post Road (US 1)
5) E Boston Post Road (US 1) and North Barry Avenue
6) W Boston Post Road (US 1) and Fenimore Road

The TMCs, including Pedestrian and Bicycle Counts are provided in the *Appendix*.

Intersection Inventory – A detailed roadway inventory was performed for all 6 study intersections. This inventory included all items needed to thoroughly analyze traffic operations at the study intersections, which include the following:

- Street directions;
- Intersection channelization features;
- Lane configurations and lane widths on intersection approaches;
- Sidewalk widths;
- Crosswalk lengths and widths;
- On-street parking regulations;
- Turning prohibitions;
- Location and type of traffic control regulation; and
- Traffic signal timing and phasing characteristics.

The Intersection Inventories are provided in the *Appendix*.

Field Observations – In addition to the detailed roadway inventory, the study team observed field conditions during the peak periods and took note of any conditions affecting traffic operations. The study team also observed the extent and duration of queue lengths at the study intersections.

III. EXISTING CONDITIONS

To assess any potential traffic impacts of the Reasonable Build-Out Scenario on the overall study area, it was first necessary to determine existing transportation conditions throughout the area. The following sections describe the assessment of Existing Conditions.

A. Study Area Street Network

Boston Post Road (US 1)

Boston Post Road (US 1) is a four lane roadway classified as an Urban Principal Arterial that runs northeast-southwest through the Village of Mamaroneck. Boston Post Road is also part of state route US 1, which extends to the north to the coastal towns in Westchester county (Rye, Port Chester) and Connecticut, as well as south to the coastal towns of Westchester county (Larchmont, New Rochelle) and into the Borough of the Bronx of New York City. Within the study area, the roadway is mostly fronted by commercial developments with the exception of the Harbor Island Park along the western portion of roadway. In the downtown area (near the intersection of Mamaroneck Avenue), the density of developments is higher giving the roadway a more urban character. Development density lowers as Boston Post Road extends further away from downtown.

The roadbed generally varies from 55 to 67 feet in width, but for the majority of the corridor it remains close to approximately 55 feet wide in the study area. Pedestrian facilities are present at study area intersections along the Boston Post Road, including sidewalks, crosswalks, pedestrian ramps, and pedestrian crossing signal heads. Concurrent and/or exclusive pedestrian signal timing was present at all three study area intersections along Boston Post Road at the time of this study. The existing posted speed limit within the study area limits is 30 mph.

Two-way peak hour traffic volumes along Boston Post Road (US 1) range from 1,705 vehicles per hour (vph) to 2,306 vph. Peak hour pedestrian volumes generally ranged from 15 to 127 pedestrians per hour per intersection along Boston Post Road. Peak pedestrian demand occurs during the Saturday midday peak hour. Peak hour bicycle volumes generally ranged from 0 to 10 bicycles per hour per intersection along Boston Post Road.

Mamaroneck Avenue

Mamaroneck Avenue is a two to four lane roadway classified as an Urban Principal Arterial that runs north-south through the Village of Mamaroneck. Mamaroneck Avenue serves as the primary connection between Boston Post Road (US 1), Interstate 95, the Hutchinson River Parkway, and the downtown of the Village of Mamaroneck. In the downtown area between Halstead Avenue and Boston Post Road (US 1), the density of developments is higher with mixed use developments (retail on the ground floor and residential apartments above) giving the roadway an urban character. As Mamaroneck Avenue extends north from Halstead Avenue, development density lowers slightly although still containing a significant amount of residential, commercial and institutional development.

The roadbed generally varies from 55 to 75 feet in width, with two lanes in both directions for the majority of the roadway in the study area. While pedestrian facilities are present at the majority of study area intersections along Mamaroneck Avenue including sidewalks, crosswalks, pedestrian ramps, and pedestrian crossing signal heads, the intersection of North Barry Avenue and Mamaroneck Avenue has

minimal pedestrian facilities (one crosswalk on the eastbound approach, pedestrian ramps provided for crossing the minor streets). Pedestrian signal timing is present at Halstead Avenue/Mt Pleasant Avenue and Waverly Avenue along Mamaroneck Avenue at the time of this study. The existing posted speed limit within the study area limits is 30 mph.

Two-way peak hour traffic volumes along Mamaroneck Avenue range from 1,334 vph to 1,804 vph. Peak hour pedestrian volumes generally ranged from 10 to 409 pedestrians per hour per intersection along Mamaroneck Avenue. Peak pedestrian demand occurs during the weekday AM peak hour. Peak hour bicycle volumes generally ranged from 3 to 24 bicycles per hour per intersection along Mamaroneck Avenue.

The Westchester County Bee Line Bus 60 service runs along Mamaroneck Avenue in both directions from north of North Barry Avenue to Palmer Avenue. In addition, the Bee Line Bus 61 runs along Mamaroneck Avenue between Halstead Avenue and Palmer Avenue. Both lines provide local bus service to neighboring towns north and south of the Village of Mamaroneck as well as connect to other existing transit networks including, but not limited to the Metro-North Railroad stations located at Mamaroneck, Larchmont, and Rye.

Halstead Avenue

Halstead Avenue is a two lane roadway classified as a minor arterial that runs east-west beginning at Mamaroneck Avenue and extending to the east into the neighboring town of Rye. In the study area, Halstead Avenue runs parallel to the Mamaroneck Avenue MNR station (just east of Mamaroneck Avenue), which contains a drop-off zone and parking for the station. At the intersection with Mamaroneck Avenue, Halstead Avenue is approximately 70 feet wide with parking along both sides of the street, and a left turn lane extending back to the upstream intersection of Halstead Avenue and Ward Avenue. Pedestrian sidewalks, although narrow at times, are generally present on both sides in the study area with the exception of the north side of the roadway along the Mamaroneck MNR station, where the sidewalk is discontinuous between Mamaroneck Avenue and Ward Avenue.

North Barry Avenue (Ext.)

North Barry Avenue is a two lane roadway classified as a major collector roadway that runs north-south beginning at Boston Post Road (US 1) to the south and extending to the north ending at the intersection with Mamaroneck Avenue. In addition to being a major collector road, N. Barry Avenue provides a secondary connection between Boston Post Road and Interstate 95 and Hutchinson River Parkway via Mamaroneck Avenue. The majority of N. Barry Avenue is fronted by low density residential development. Parking on both sides is generally permitted except in proximity to the study area intersection approaches, where the additional road width is utilized for traffic turning lanes. At the both intersections with Mamaroneck Avenue and Boston Post Road (US 1), N. Barry Avenue is approximately 30 feet wide. Five feet wide sidewalks offset from the curb with a planted buffer on both sides of the street are generally present along the entire length of the roadway.

Fenimore Road

Fenimore Road is a two lane roadway classified as a major collector roadway that runs north-south beginning at Boston Post Road (US 1) to the south and extending to the north into the Town of Mamaroneck to Griffen Avenue/Route 125. The Fenimore Road supports a mix of low density residential

development along some portions of the road, and denser commercial properties in the Village of Mamaroneck. Parking on Fenimore Road is limited, and only permitted along the southern portion south of Hoyt Avenue. At the intersection with and Boston Post Road (US 1), Fenimore Road is approximately 44 feet wide. Sidewalks are present on both sides of the roadway between Boston Post Road (US 1) and Northrup Avenue to the north, while north of Northrup Avenue, no sidewalks are currently present.

D. Traffic Analysis

Level of Service Methodology

The typical measures of effectiveness for signalized intersection analyses include volume-to-capacity ratio (v/c), delay, and level of service (LOS). V/c ratio is an indicator of the degree of saturation that occurs at a particular location. A v/c ratio equal to or greater than 1.0 indicates traffic operations at or above capacity (high levels of congestion); a v/c less than 1.0 indicates traffic operations below capacity (lower levels of congestion). Delay, typically provided as seconds per vehicle (sec/veh), includes what is termed control delay, which generally encompasses delays associated with acceleration, deceleration, and stoppages from downstream traffic control devices. In the *Synchro* traffic analysis software, the delay for signalized intersections also includes queue delay, a measure of queue interaction between closely spaced intersections. The total delay reported is the sum of the control and queue delays.

Level of service (a rating ranging from excellent operating conditions at LOS A to failing operating conditions at LOS F) is a concept developed to quantify the degree of comfort experienced by drivers, and is based on delay. Level of service at signalized intersections is provided for both individual lane groups and the overall intersection. The LOS designations for signalized intersection analyses are based on guidelines set forth in the Highway Capacity Manual (HCM) and are provided in *Table 2*. In this traffic impact analysis, a signalized lane grouping operating at LOS E or F or with a v/c ratio of 0.90 or more is considered congested.

Table 2 – Signalized Intersection LOS Designations

LOS	Delay (sec/veh)
A	≤ 10
B	> 10 to 20
C	> 20 to 35
D	> 35 to 55
E	> 55 to 80
F	> 80

Source: Highway Capacity Manual 2010

Existing Traffic (Level of Service) Analysis

Traffic capacity analysis was performed using *Synchro* software for the six signalized intersections in the study area. *Figure 1* shows the locations of the study area intersections.

Analysis was performed for study area intersections during the weekday AM, Midday, PM and Saturday Midday peak hours. The weekday AM, midday, PM, and Saturday midday peak hours were determined based on the traffic data collection to be 7:45-8:45am, 12:45 - 1:45 pm, 4:30-5:30 pm, and 12:00 – 1:00 pm, respectively.

The turning movement counts were used to create 2018 Existing Conditions volume flow maps. Existing traffic volumes were compared to previous traffic studies completed in the area in the past two years to verify existing traffic patterns from the 2018 data set and make adjustments to volumes as necessary. In addition, traffic conditions were calibrated based on observations made in the field on congestion and vehicular queuing. The 2018 Existing Conditions traffic volume flow maps for the analyzed peak hours are provided in the *Appendix*.

The data input into the *Synchro* software includes intersection geometry and traffic signal timing where applicable. The intersection geometry was obtained from detailed field inventories that were performed at the time of the data collection effort, and captured all relevant roadway features that could affect traffic operations. Official traffic signal timings for each of the peak hours at all of the signalized study intersections were requested from the Village of Mamaroneck and NYS DOT, however, were not received at the time of this study. Therefore, traffic signal timing surveys were conducted to get an approximation of the existing signal timing. It should be noted that copies of traffic signal timings program sheets were obtained on a site visit to the Village-operated traffic signals (intersections not along Boston Post Road), which was utilized for the traffic signal timing in the analysis. The traffic signal timing data collected is provided in the *Appendix*.

The Measures of Effectiveness (MOEs) provided by the *Synchro* analysis include:

- Volume to Capacity (v/c) ratio,
- Total Delay, expressed as seconds per vehicle, and
- Level of Service (LOS), which the HCM 2010 defines based on thresholds of delay.

The results of the Existing Conditions analysis are provided in *Table 3*. As shown in *Table 3,* all the intersections in the study area currently operate with an overall LOS mid-D or better during the peak hours with the exception of: W Boston Post Road (US 1) and Fenimore Road during the Saturday midday peak hour (LOS D), Mamaroneck Avenue and E Boston Post Road (US 1) during the Saturday midday peak hour (LOS D), and E Boston Post Road (US 1) and North Barry Avenue during the weekday PM peak hour (LOS E). For individual lane groups, the majority currently operate at LOS mid-D or better during the analyzed peak hours, with the exception of one or two lane groups at each study area intersection during at least one analyzed peak hour.

The following summarizes the intersections and movements with operations worse than LOS mid-D. Refer to *Table 3* for a summary of the analysis. Detailed 2018 Existing Conditions *Synchro* analysis results are provided in the *Appendix*.

Mamaroneck Avenue and Andrew Street/North Barry Avenue Ext– The westbound through-right lane group operates overcapacity with a v/c ratio of 1.05 and LOS E during the weekday AM peak hour. This is due to a high right turn volume on the minor street approach of the intersection which has only 22 seconds of green time on a 90 second cycle length. In addition, high volumes in the northbound direction and the westbound approach lane configuration allow for a limited number of right turns on red. In addition, the southbound left turn lane in the weekday PM peak hour operates at a LOS E with a v/c ratio of 0.95.

Mamaroneck Avenue and Waverly Avenue/Van Ranst Place

The eastbound left turn lane group operates at LOS F with a v/c ratio of 1.03 during the weekday AM peak hour and at LOS E with a v/c ratio of 0.97 in the weekday PM peak hour. A limited amount of green time for the minor street approach (EB/WB), high minor street traffic demand (causing excessive vehicular queuing), and pedestrian conflicts on the north crosswalk contribute to the poor LOS experienced during the morning and evening peak hours for the eastbound left turn lane group.

Mamaroneck Avenue and Mt. Pleasant Avenue/Halstead Avenue

The northeast bound left turn lane group operates at a LOS E in the weekday AM, midday, and Saturday midday peak hours, and at LOS F in the weekday PM peak hour. This lane group operates near or at capacity with v/c ratios of 0.97 and 1.00 in the weekday AM and PM peak hours, respectively.

W Boston Post Road (US 1) and Fenimore Road

The eastbound approach operates over capacity at LOS E with a v/c ratio of 1.04 during the Saturday midday peak hour. This is could be attributed to a permitted left turn having too few gaps for eastbound left turns against the opposing westbound traffic flow.

Mamaroneck Avenue and E Boston Post Road (US 1)

The northbound left through and southbound left through lane groups both operate at a LOS E during the weekday PM and Saturday midday peak hours.

E Boston Post Road (US 1) and North Barry Avenue

The southbound approach operates at a LOS E in the weekday AM, PM, and Saturday midday peak hours, and at LOS high-D in the weekday midday peak hour. In addition, the eastbound approach operates at LOS E with a v/c ratio of 0.95 in the weekday PM peak hour.

Table 3 – Year 2018 Existing Traffic Conditions

Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)					Weekday MD Peak Hour (12:45 to 1:45 PM)					Weekday PM Peak Hour (4:30 to 5:30 PM)					Saturday MD Peak Hour (12:00 to 1:00 PM)				
			v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)
SIGNALIZED INTERSECTIONS																						
1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.31	29.6	C	24	47	0.14	24.8	C	23	23	0.27	26.0	C	33	56	0.15	24.8	C	21	30
	WB	L	0.20	30.3	C	45	76	0.18	29.8	C	39	75	0.21	30.2	C	48	83	0.17	29.7	C	36	77
		TR	**1.05**	73.1	**E**	~384	#712	0.60	11.7	B	42	0	0.77	23.5	C	145	49	0.66	15.4	B	77	10
	NB	L	0.01	12.5	B	2	6	0.03	12.5	B	4	9	0.04	13.2	B	4	11	0.03	12.8	B	4	11
		TR	0.72	21.8	C	413	538	0.63	19.5	B	344	450	0.70	21.0	C	415	536	0.61	18.9	B	341	443
	SB	L	0.80	31.3	C	93	#224	0.53	11.6	B	62	94	0.95	56.8	**E**	150	#274	0.60	14.1	B	71	102
		TR	0.42	8.4	A	186	245	0.37	7.8	A	156	207	0.57	10.0	A	307	392	0.41	8.2	A	184	237
	Overall		*	**28.7**	**C**	*	*	*	**14.2**	**B**	*	*	*	**20.6**	**C**	*	*	*	**14.5**	**B**	*	*
2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**1.03**	**83.2**	**F**	~402	#685	0.77	39.4	D	248	#427	**0.97**	67.1	**E**	340	#631	0.79	41.4	D	255	#474
		R	0.26	25.9	C	32	69	0.23	24.8	C	29	61	0.29	26.3	C	37	82	0.31	26.9	C	40	74
	WB	L	0.16	22.0	C	45	74	0.16	22.0	C	47	56	0.12	21.4	C	33	57	0.14	21.7	C	38	54
		R	0.30	24.8	C	65	99	0.14	22.1	C	31	64	0.21	23.1	C	46	88	0.14	22.1	C	31	52
	NB	TR	0.52	14.9	B	198	275	0.48	14.1	B	184	255	0.57	18.2	B	244	321	0.43	13.4	B	170	235
	SB	T	0.56	13.7	B	243	329	0.36	11.2	B	140	196	0.47	12.3	B	195	265	0.45	12.1	B	190	254
	Overall		*	**28.0**	**C**	*	*	*	**18.5**	**B**	*	*	*	**25.4**	**C**	*	*	*	**18.5**	**B**	*	*
3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.35	32.5	C	100	183	0.48	35.2	D	145	188	0.61	38.9	D	194	289	0.53	36.4	D	166	268
		TR	0.46	11.9	B	23	0	0.38	10.2	B	9	68	0.51	12.8	B	27	24	0.43	10.5	B	12	0
	NB	LTR	0.33	19.8	B	108	165	0.45	20.9	C	154	222	0.44	21.7	C	160	204	0.43	20.9	C	146	204
	SB	L	0.64	17.3	B	25	34	0.43	15.7	B	23	37	0.72	26.9	C	34	#273	0.59	20.1	C	26	34
		T	0.69	14.4	B	53	70	0.57	13.8	B	77	103	0.59	13.0	B	72	97	0.56	13.5	B	61	82
		R	0.46	5.8	A	45	58	0.31	5.1	A	38	61	0.44	6.3	A	50	70	0.33	4.6	A	31	47
	NEB	L	**0.97**	79.1	**E**	305	#574	0.84	57.3	**E**	255	#447	**1.00**	**87.0**	**F**	~329	#529	0.84	56.6	**E**	262	#427
		R	0.41	18.7	B	53	144	0.53	23.9	C	90	191	0.56	25.5	C	101	218	0.48	21.7	C	77	180
	Overall		*	**25.0**	**C**	*	*	*	**23.6**	**C**	*	*	*	**29.4**	**C**	*	*	*	**23.4**	**C**	*	*
4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.77	22.7	C	237	352	0.74	21.5	C	220	327	0.92	35.6	D	289	#489	**1.04**	62.5	**E**	~373	#532
	WB	TR	0.51	15.2	B	173	174	0.49	14.8	B	162	208	0.69	17.9	B	264	356	0.77	18.1	B	283	390
	SB	L	0.21	14.2	B	63	111	0.23	14.3	B	72	105	0.33	15.5	B	109	190	0.26	14.7	B	82	150
		R	0.43	9.3	A	65	97	0.29	4.9	A	15	75	0.36	10.6	B	68	116	0.44	11.4	B	86	161
	Overall		*	**17.3**	**B**	*	*	*	**16.4**	**B**	*	*	*	**23.5**	**C**	*	*	*	**33.3**	**C**	*	*
5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.42	21.5	C	89	222	0.52	27.5	C	102	211	0.50	33.5	C	132	206	0.42	27.2	C	121	192
		TR	0.45	28.0	C	221	409	0.42	27.2	C	209	394	0.57	32.2	C	424	535	0.72	36.2	D	576	586
	WB	L	0.07	15.4	B	11	14	0.07	15.3	B	12	37	0.13	18.8	B	30	58	0.18	22.3	C	36	35
		TR	0.39	27.3	C	175	320	0.51	29.5	C	240	436	0.66	35.7	D	487	603	0.57	33.4	C	406	500
	NB	LT	0.05	39.5	D	17	50	0.35	43.9	D	97	174	0.74	68.5	**E**	208	#327	0.81	75.0	**E**	242	#384
		R	0.06	39.7	D	17	19	0.16	40.6	D	48	75	0.20	43.6	D	80	133	0.18	43.3	D	71	122
	SB	LT	0.32	43.2	D	93	147	0.58	50.6	D	174	266	0.77	67.6	**E**	267	304	0.71	62.7	**E**	252	279
		R	0.44	31.0	C	158	246	0.29	27.8	C	98	234	0.50	35.2	D	272	305	0.33	31.0	C	164	264
	Overall		*	**28.4**	**C**	*	*	*	**31.4**	**C**	*	*	*	**39.1**	**D**	*	*	*	**39.3**	**D**	*	*
6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.79	38.0	D	337	542	0.74	36.8	D	287	469	0.95	55.3	**E**	391	#845	0.83	41.8	D	318	#560
	WB	LTR	0.71	34.2	C	319	446	0.71	34.0	C	273	456	0.82	38.9	D	420	590	0.74	35.2	D	292	495
	NB	L	0.22	24.7	C	56	120	0.22	23.5	C	48	117	0.35	27.4	C	96	185	0.28	27.7	C	67	155
		TR	0.20	24.3	C	80	160	0.10	22.3	C	34	85	0.26	26.3	C	111	202	0.16	26.4	C	56	97
	SB	LTR	0.86	62.0	**E**	304	#645	0.76	49.8	D	270	#510	0.92	75.7	**E**	326	#489	0.74	55.8	**E**	204	#404
	Overall		*	**38.9**	**D**	*	*	*	**36.9**	**D**	*	*	*	**48.2**	**D**	*	*	*	**39.5**	**D**	*	*

Notes:

* Synchro does not provide overall v/c ratio for signalized intersections.

v/c = volume-to-capacity ratio; LOS = Level-of-Service; NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

L = left-turn, R = right-turn, T = through movement, LTR = left/through/right, TR = through/right-turn, LT = left-turn/through, LR = left-turn/right-turn

Synchro does not provide overall delay or v/c ratios for unsignalized intersections.

Queue Notes: ~ and # symbols indicates queue length exceeds capacity, "m" indicates 95th %ile queue is metered by upstream signal

IV. FUTURE REASONABLE BUILD-OUT CONDITION

To assess potential traffic impacts of the anticipated redevelopment across the study area, it was necessary to determine future conditions including the potential reasonable build-out condition. The future reasonable build-out condition includes general background growth that may occur outside of the moratorium study area, planned developments already under construction, as well as incremental traffic generated by the anticipated residential redevelopment scenario (referred to as Reasonable Build-Out Scenario). It is anticipated that it could take 20 years for the reasonable build-out scenario to become fully realized, therefore, a completion year of 2038 was selected for the future reasonable build-out analysis.

A. Future Traffic Forecasts

Travel Demand Forecast

As described in the Redevelopment Parcel Identification Analysis report, a total of 210 parcels are anticipated to be redeveloped into residential or residential/commercial mixed developments located throughout the Village (the Reasonable Build-Out Scenario). The location of these existing parcels are shown in Figure 2, along with the ten clusters of development forecasted together for traffic assignment purposes. The majority of the anticipated redevelopment would replace existing active residential and/or commercial development utilized by local residents and through traffic, including but not limited to local neighborhood retail (dry cleaners, print shops, etc), grocery stores, gas stations, fast food restaurants, and fitness centers. The amount of existing active developments in the study area that would be subject to potential redevelopment, the amount of potential new residential and commercial development, and the net incremental change broken down by land use are included in *Table 4*. Note that existing development parcels containing vacant commercial space were not included in this total, as unoccupied commercial space was assumed to generate little to no traffic. As shown, a net increase of 1,142 dwelling units and a net decrease of approximately 320,507 sf of commercial space is anticipated in the Reasonable Build-Out Scenario. As a significant amount of existing developments would be eliminated by the Reasonable Build-Out Scenario, the traffic generated by the existing developments was forecasted in addition to the anticipated future developments to account for traffic already present in the traffic network.

Table 4 – Existing and Future Reasonable Build Out Scenario Development by Land Use

Land Use	Existing Condition	Reasonable Build-Out Scenario	Changes in Land Use (Net Increment)
Residential			
Low-Rise Apartment	105 DU	642 DU	537 DU
Mid-Rise Apartment	193 DU	798 DU	605 DU
Total Residential	**298 DU**	**1,440 DU**	**1,142 DU**
Commercial			
Office	86,649 gsf		-86,649 gsf
Local Retail (Shopping Center)	113,306 gsf	50,677 gsf	-62,629 gsf
Gas Station	7,004 gsf		-7,004 gsf
Fast Food Establishment	3,756 gsf		-3,756 gsf
Motel	15,038 gsf		-15,038 gsf
Drive-In Bank	9,275 gsf		-9,275 gsf
Warehouse	43,782 gsf		-43,782 gsf
Car Wash	9,923 gsf		-9,923 gsf
Supermarket	6,850 gsf		-6,850 gsf
Auto Body Shop	21,474 gsf		-21,474 gsf
Fitness Club	54,127 gsf		-54,127 gsf
Total Commercial	**371,184 gsf**	**50,677 gsf**	**-320,507 gsf**

The transportation planning factors used to forecast travel demand for the existing and Reasonable Build-Out condition developments are included in the *Appendix*. The vehicle trip generation rates and/or formulas and temporal distribution factors for each of the land uses shown in *Table 4* were utilized in the travel demand forecast based on those cited in the *ITE Trip Generation Handbook, 10th Edition*. Factors are shown for the weekday AM and PM peak hours (typical peak periods for commuter travel demand) and the weekday midday and Saturday peak hours (typical peak periods for retail demand). It should be noted that a significant portion of traffic generated by commercial developments include traffic with two or more destinations, and would attract traffic that would otherwise pass-by the development or take another route to their ultimate destination. Therefore, percentage credits from the *ITE Trip Generation Handbook* based on land use for pass-by and diverted trips were applied to the existing and proposed commercial retail developments. In addition, an additional 10 percent credit was applied to commercial developments that would generate trips within the immediate area but would not pass through a study area intersection. Additional details on the transportation planning factors used for the travel demand forecast are provided in the *Appendix*.

Due to the location of redevelopment parcels dispersed throughout the study area approximate to different study area intersections, travel demand forecasts for the development parcels anticipated to be redeveloped were grouped by location and forecasted in ten discrete clusters. A map showing the location of each development cluster is included as *Figure 2*. The net incremental vehicle trips (traffic generated by the Reasonable Build-Out condition minus the traffic generated by the existing developments that would be eliminated) is shown in *Table 5*, separated by cluster for each analyzed peak hour.

Figure 2 – Reasonable Build-Out Scenario Development Clusters

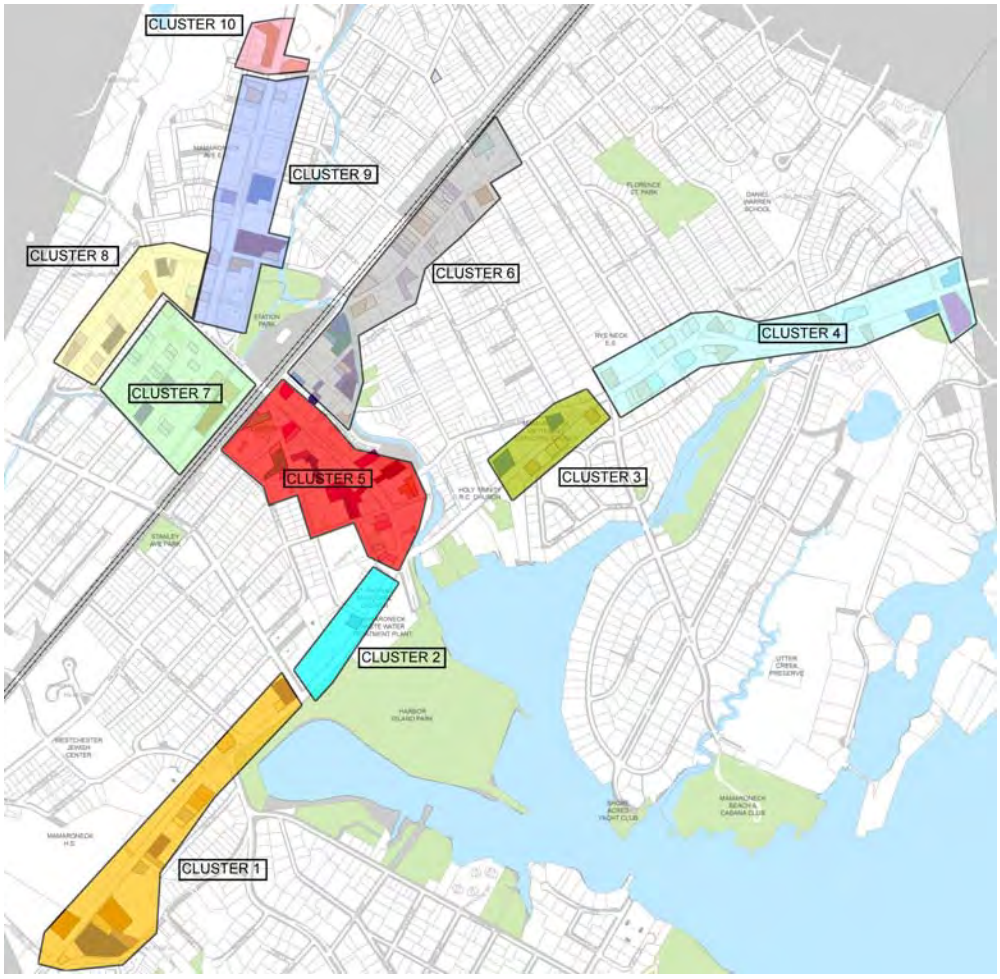


Table 5 – Net Incremental Vehicular Peak Hour Trips by Cluster

	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Cluster 1	-32	0	-32	-55	-61	-116	-50	-65	-115	-75	-81	-156
Cluster 2	-1	-1	-2	0	0	0	-1	0	-1	0	0	0
Cluster 3	-11	13	2	-4	-4	-8	8	-9	-1	3	3	6
Cluster 4	-30	13	-17	-22	-23	-45	-9	-39	-48	-26	-28	-54
Cluster 5	-42	76	34	34	30	64	80	-2	78	61	67	128
Cluster 6	-22	53	31	-17	-17	-34	21	-34	-13	-9	-5	-14
Cluster 7	-19	6	-13	4	4	8	4	-17	-13	13	12	25
Cluster 8	1	20	21	-1	-2	-3	11	-1	10	2	4	6
Cluster 9	-48	-9	-57	-41	-41	-82	-40	-68	-108	-61	-54	-115
Cluster 10	-5	3	-2	-12	-10	-22	-10	-14	-24	-17	-14	-31
Total	-209	174	-35	-114	-124	-238	14	-249	-235	-109	-96	-205

It is important to note that generally commercial developments as included in the *ITE Trip Generation Handbook, 10th Edition* would typically generate more vehicular traffic when compared to a similar size residential development. Therefore, as shown in *Table 5*, clusters with significant amounts of existing commercial, or high traffic-generating commercial land uses would result in a travel demand forecast projecting a reduction of future vehicular peak hour trips generated by the Reasonable Build-Out Scenario. However, clusters 3, 5, 6, 7, and 8 are projected to generate an increase in future vehicular peak hour trips in one or more peak hours in the Reasonable Build-Out Scenario.

Trips generated by the Reasonable Build-Out Scenario were distributed throughout the traffic network based on existing traffic patterns and engineering judgment. The traffic volume flow maps of the net incremental vehicle trips are included in the *Appendix*.

Background Growth & Projected No-Action Development

In addition to the net incremental traffic generated by the Reasonable Build-out Scenario, there is potential for development to occur outside of the moratorium study area in the Village of Mamaroneck, as well as in neighboring towns (Rye, Larchmont, Harrison, etc). As traffic generated by this development could pass through the study area, a compounded growth rate of 0.50% was applied to existing traffic volumes to project background traffic growth generated outside the study area. This compounded background growth rate yields a 10.5 percent increase of the existing traffic volumes as part of the projection of future 2038 traffic volumes. This growth rate was applied to lane groups which supported traffic flow through the Village, and was not applied to low volume local street lane groups.

Prior to the moratorium, a few significant developments were already approved or under construction, and are anticipated to be completed prior to the Reasonable Build-Out Scenario completion year (2038). These projects include the Sheldrake Estates Project (114 dwelling units located at 270 Waverly Avenue) and the 37,560 sf commercial/retail development at 805, 817-819 Mamaroneck Avenue (no-build sites).

Traffic studies from both projects were reviewed, and projected incremental traffic volumes generated by these projects were incorporated into the analysis of the Reasonable Build-Out Scenario condition.

The traffic volumes forecasted from the Reasonable Build-Out Scenario, general background growth and no-build sites described above were added on top of the existing traffic network to obtain future 2038 Reasonable Build-Out condition traffic volumes. Traffic volume flow maps for the 2038 future Reasonable Build-Out conditions are provided in the *Appendix*.

B. Future Reasonable Build-Out Condition Traffic (Level of Service) Analysis

Future 2038 Reasonable Build-Out conditions traffic analyses were performed for the Weekday AM, midday, PM, and Saturday midday peak hours. The capacity analysis results for the study intersections are shown for 2038 Future Reasonable Build-Out Condition in *Table 6*. The locations that currently experience congestion in the existing condition are projected to worsen in the Reasonable Build-Out condition, with a couple lane groups becoming newly congested in one or more peak hours. Overall LOS at the study area intersections is anticipated to operate at LOS mid-D or better except for the intersections of Mamaroneck Avenue and Andrew Street/North Barry Avenue Ext, W Boston Post Road (US 1) and Fenimore Road, Mamaroneck Avenue and E Boston Post Road (US 1), and E Boston Post Road (US 1) and North Barry Avenue in one or more peak hours. Detailed future 2038 Reasonable Build-Out Condition *Synchro* analysis results are provided in the *Appendix*. The following summarizes the intersections and movements with operations worse than LOS mid-D. Refer to *Table 6* for a summary of the analysis.

Mamaroneck Avenue and Andrew Street/North Barry Avenue Ext

The westbound through-right lane group is anticipated to continue operating overcapacity with a v/c ratio of 1.22 and degrade from LOS E to LOS F during the weekday AM peak hour. In addition, the southbound left turn lane is projected to degrade to LOS E and F with v/c ratios of 0.99 and 1.10, respectively, in the weekday AM and PM peak hours, respectively.

Mamaroneck Avenue and Waverly Avenue/Van Ranst Place

The eastbound left turn lane group is projected to operate at LOS F with v/c ratios of 1.22 and 1.09 during the weekday AM and PM peak hours, respectively. In the weekday midday and Saturday midday peak hours, the eastbound left turn lane group is projected to operate at LOS D and E, respectively, with v/c ratios of 0.88 and 0.91, respectively.

Mamaroneck Avenue and Mt. Pleasant Avenue/Halstead Avenue

The northeastbound left turn lane group (on Mt. Pleasant Avenue) is projected to operate at a LOS F in the weekday AM and PM peak hours, and at LOS E in the weekday midday and Saturday midday peak hours. This lane group is projected to operate over capacity with v/c ratios of 1.10 and 1.05 in the weekday AM and PM peak hours, respectively. In addition, the southbound left turn lane group is projected operate at LOS D with a v/c ratio of 0.90 in the weekday PM peak hour.

W Boston Post Road (US 1) and Fenimore Road

The eastbound approach is projected to degrade from LOS D to LOS F with a v/c ratio of 1.09 in the weekday PM peak hour. In the Saturday midday peak hour, the eastbound approach is anticipated to degrade from LOS E to LOS F, with a v/c ratio of 1.20.

Mamaroneck Avenue and E Boston Post Road (US 1)

In the weekday AM and midday peak hours, the southbound left through lane group is anticipated to degrade to a LOS high-D and E, respectively. The northbound left through and southbound left through lane groups are both anticipated to degrade from a LOS E to LOS F during the weekday PM and Saturday midday peak hours. The northbound left through lane group is projected to operate above capacity with a v/c ratio of 1.03 in the Saturday midday peak hour.

E Boston Post Road (US 1) and North Barry Avenue

The southbound approach is projected to continue to operate at a LOS E in the weekday AM and Saturday midday peak hours, and LOS high-D in the weekday midday peak hour, while the approach would degrade from LOS E to LOS F in the weekday PM peak hour. The southbound approach is anticipated to operate near capacity in the weekday PM peak hour with a v/c ratio of 0.97. In addition, the eastbound approach is projected to degrade from LOS E to LOS F with a v/c ratio of 1.08 in the weekday PM peak hour.

Table 5 – Future 2038 Reasonable Build-Out Traffic Conditions without Improvements

Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)					Weekday MD Peak Hour (12:45 to 1:45 PM)					Weekday PM Peak Hour (4:30 to 5:30 PM)					Saturday MD Peak Hour (12:00 to 1:00 PM)				
			v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)
SIGNALIZED INTERSECTIONS																						
1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.33	29.2	C	24	47	0.14	24.8	C	23	23	0.27	25.9	C	31	54	0.14	24.4	C	18	28
	WB	L	0.17	29.7	C	37	66	0.15	29.3	C	32	66	0.19	30.1	C	41	74	0.12	28.9	C	26	62
		TR	**1.22**	**136.8**	**F**	~561	#901	0.66	15.8	B	75	0	0.82	28.7	C	180	67	0.73	20.5	C	120	37
	NB	L	0.01	12.5	B	2	6	0.02	12.7	B	3	8	0.04	13.5	B	3	10	0.02	12.8	B	3	10
		TR	0.86	27.7	C	550	714	0.70	21.0	C	398	518	0.74	22.0	C	450	580	0.68	20.4	C	398	515
	SB	L	**0.99**	78.1	**E**	170	#357	0.60	15.8	B	65	113	1.10	**101.8**	**F**	~239	#365	0.69	21.5	C	75	145
		TR	0.44	8.5	A	195	256	0.41	8.2	A	181	236	0.65	11.3	B	382	488	0.45	8.6	A	215	273
	Overall		*	**47.7**	**D**	*	*	*	**15.8**	**B**	*	*	*	**26.0**	**C**	*	*	*	**16.5**	**B**	*	*
2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**1.22**	**146.5**	**F**	~541	#841	0.88	50.6	D	299	#524	**1.09**	**98.8**	**F**	~444	#731	0.91	55.9	**E**	310	#580
		R	0.42	30.7	C	55	106	0.31	27.0	C	42	80	0.34	27.9	C	46	96	0.42	30.4	C	57	99
	WB	L	0.16	22.0	C	45	74	0.16	22.0	C	47	56	0.12	21.4	C	33	57	0.14	21.7	C	38	54
		R	0.30	24.8	C	65	99	0.14	22.1	C	31	64	0.21	23.1	C	46	88	0.14	22.1	C	31	52
	NB	TR	0.59	18.4	B	242	334	0.53	15.8	B	214	294	0.62	23.4	C	278	363	0.52	15.7	B	216	295
	SB	T	0.60	14.4	B	271	366	0.41	11.7	B	162	223	0.53	13.2	B	232	313	0.51	12.8	B	222	294
	Overall		*	**42.6**	**D**	*	*	*	**21.5**	**C**	*	*	*	**33.6**	**C**	*	*	*	**22.2**	**C**	*	*
3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.43	34.1	C	124	220	0.52	36.1	D	157	201	0.65	40.7	D	211	311	0.59	38.2	D	187	297
		TR	0.49	13.4	B	30	4	0.41	10.3	B	10	73	0.61	21.2	C	70	62	0.49	11.4	B	17	0
	NB	LTR	0.39	20.9	C	136	201	0.52	22.4	C	185	261	0.50	22.9	C	186	233	0.52	22.8	C	183	251
	SB	L	0.80	30.0	C	28	m#43	0.54	22.2	C	32	51	0.90	46.9	D	35	m#313	0.76	32.5	C	36	46
		T	0.76	18.1	B	58	m75	0.67	18.4	B	111	148	0.70	14.5	B	77	102	0.67	14.6	B	64	84
		R	0.52	6.9	A	41	54	0.34	5.9	A	49	75	0.50	7.6	A	51	82	0.37	4.5	A	30	45
	NEB	L	**1.10**	**114.5**	**F**	~398	#676	0.90	66.4	**E**	279	#495	**1.05**	**100.1**	**F**	~378	#564	0.89	64.4	**E**	284	#470
		R	0.44	20.1	C	62	158	0.56	25.6	C	101	206	0.61	28.1	C	118	244	0.51	23.3	C	89	199
	Overall		*	**33.1**	**C**	*	*	*	**26.4**	**C**	*	*	*	**33.8**	**C**	*	*	*	**25.9**	**C**	*	*
4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.85	28.2	C	262	#443	0.83	27.0	C	247	#421	1.09	**80.1**	**F**	~408	#590	**1.20**	122.1	**F**	~443	#602
	WB	TR	0.59	16.6	B	213	208	0.53	15.4	B	181	230	0.74	19.3	B	294	395	0.84	21.5	C	333	455
	SB	L	0.23	14.4	B	70	121	0.25	14.6	B	80	114	0.37	16.0	B	122	211	0.29	15.0	B	92	166
		R	0.51	13.3	B	108	148	0.28	5.6	A	21	81	0.32	10.5	B	61	106	0.44	12.4	B	93	170
	Overall		*	**20.4**	**C**	*	*	*	**19.2**	**B**	*	*	*	**41.6**	**D**	*	*	*	**56.3**	**E**	*	*
5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.47	23.8	C	96	236	0.61	32.4	C	116	234	0.63	42.3	D	159	243	0.51	32.6	C	140	218
		TR	0.48	28.6	C	240	441	0.45	27.7	C	226	423	0.62	33.5	C	475	594	0.77	38.1	D	636	640
	WB	L	0.08	15.6	B	12	16	0.08	15.6	B	14	39	0.15	19.9	B	34	63	0.21	25.2	C	39	37
		TR	0.43	27.9	C	195	351	0.54	30.3	C	263	475	0.71	37.6	D	546	670	0.62	34.7	C	451	552
	NB	LT	0.06	39.6	D	19	55	0.44	46.8	D	112	196	0.88	**87.9**	**F**	241	#401	**1.03**	120.4	**F**	~314	#479
		R	0.07	39.6	D	19	21	0.18	40.7	D	52	81	0.23	43.9	D	88	143	0.20	43.5	D	79	133
	SB	LT	0.42	45.5	D	122	184	0.68	55.8	**E**	203	303	0.88	**83.2**	**F**	301	#360	0.92	88.6	**F**	~317	#358
		R	0.52	33.4	C	198	297	0.33	28.6	C	115	268	0.55	36.8	D	307	339	0.38	32.1	C	197	309
	Overall		*	**29.8**	**C**	*	*	*	**33.2**	**C**	*	*	*	**43.5**	**D**	*	*	*	**46.6**	**D**	*	*
6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.83	40.2	D	382	#708	0.77	37.5	D	308	501	**1.08**	**89.6**	**F**	~468	#956	0.85	43.5	D	347	#686
	WB	LTR	0.77	37.4	D	369	487	0.72	34.1	C	294	487	0.87	41.6	D	465	#693	0.79	37.6	D	324	532
	NB	L	0.22	25.7	C	61	120	0.22	24.4	C	51	117	0.36	27.5	C	96	185	0.30	28.9	C	73	155
		TR	0.21	25.4	C	88	160	0.10	23.2	C	36	85	0.26	26.3	C	111	202	0.16	27.2	C	61	97
	SB	LTR	0.94	77.1	**E**	347	#688	0.80	54.2	D	296	#536	**0.97**	**85.5**	**F**	346	#526	0.76	58.7	**E**	220	#407
	Overall		*	**43.4**	**D**	*	*	*	**38.0**	**D**	*	*	*	**63.2**	**E**	*	*	*	**41.5**	**D**	*	*

Notes:

* Synchro does not provide overall v/c ratio for signalized intersections.

v/c = volume-to-capacity ratio; LOS = Level-of-Service; NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

L = left-turn, R = right-turn, T = through movement, LTR = left/through/right, TR = through/right-turn, LT = left-turn/through, LR = left-turn/right-turn

Synchro does not provide overall delay or v/c ratios for unsignalized intersections.

Queue Notes: ~ and # symbols indicates queue length exceeds capacity, "m" indicates 95th %ile queue is metered by upstream signal

E. Recommended Intersection Improvements

As the Reasonable Build-Out condition is anticipated to cause increased congestion at one or more lane groups at study area intersections, the following section discusses potential improvements that could be implemented to optimize traffic operations and ease congested lane groups. Potential improvements considered included signal timing adjustments and optimization, elimination of on-street parking to add addition travel lanes, as well as roadway restriping and geometric reconfigurations. The improvements listed have the potential to reduce the total number of congested intersection lane groups, as well as reduce the intensity of congestion at lane groups already congested in the existing condition. *Table 7* includes the improvement measures that could implemented at each study area intersection.

Table 7 – Intersection Improvements for the Future 2038 Reasonable Build-Out Condition

		Signal Timings								
		Existing*				Proposed				
Intersections	Phase	AM	MD	PM	Sat	AM	MD	PM	Sat	Recommended Improvements
1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB) / Andrew Street(EB)	SB Lead	15	15	15	15	20	15	20	15	-Shift 5 seconds from the NB/SB phase to the SB exclusive phase in AM and PM.
	NB/SB	50	50	50	50	45	50	45	50	
	EB/WB	27	27	27	27	27	27	27	27	
2. Mamaroneck Avenue (N-S)/ Waverly Avenue (EB) / Van Ranst Place (WB)	NB/SB	51	51	51	51	46	50	49	50	-Move North Crosswalk to South leg of the Intersection.
	EB/WB	31	31	31	31	36	32	33	32	-Shift 5, 1, 2, and 1 seconds from the NB/SB phase to the EB/WB phase in the AM, midday, PM and Saturday midday peak hours, respectively.
3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	NEB/SBR	25	25	25	25	28	27	27	27	-Shift 2 seconds from NB/SB phase and 1 sec from WB phase to NEB phase in AM.
	NB/SB	40	40	40	40	38	38	40	38	-Shift 2 seconds from NB/SB phase to NEB phase in MD and SAT.
	WB	27	27	27	27	26	27	25	27	-Shift 2 seconds from WB phase to NEB phase in PM.
4. Boston Post Road (E-W) / Fenimore Road (SB)	EB/WB	36	36	36	36	45	45	45	45	-Increase cycle length from 70 seconds to 90 seconds.
	SB	34	34	34	34	32	32	32	32	-Add eastbound lag phase and adjust signal timing as shown for all periods.
	EB Lag	-	-	-	-	13	13	13	13	
5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB/WB	55	55	55	55	54	52	54	52	-Shift 1, 3, 1, and 3 seconds from the EB/WB phase to the NB/SB phase in the weekday AM, midday, PM, and Saturday midday peak hours, respecitively.
	EBL/WBL/SBR	20	20	20	20	20	20	20	19	
	NB/SB	35	35	35	35	36	38	36	39	-Shift 1 second from the EBL/WBL/SBR phase to the NB/SB phase in SAT.
	Ped (Actuated)	31	31	31	31	31	31	31	31	
6. Boston Post Road (E-W) / N. Barry Avenue (SB) /S. Barry Avenue (NB) [Actuated Signal]	WB Lead	21	21	21	21	21	21	21	21	-Note: As signal is actuated, only maximum splits are shown.
	EB/WB	25	25	25	25	23	23	23	23	-Reduce maximum green time of NB phase by 5 seconds, increase max green time by 5 seconds to NB/SB in all peak hours.
	EB Lag	21	21	21	21	23	23	23	23	
	NB Lead	16	16	16	16	11	11	11	11	-Reduce maximum green time of EB/WB phase by 2 seconds, increase max green time of EB Lag phase by 2 seconds in all peak hours.
	NB/SB	30	30	30	30	35	35	35	35	
	Ped (Actuated)	20	20	20	20	20	20	20	20	

Notes:

1) Existing Signal Timings for intersections along Boston Post Road were calculated based on field surveys. Traffic signal timing at the remaining intersections on Mamaroneck Avenue were obtained from programming sheets inside traffic control

2) Signal timing shown reflects total phase length including green, yellow, and red clearance time.

Beyond the signal timing adjustments listed above, the improvements recommended at Mamaroneck Avenue and Waverly Avenue/Van Ranst Place include relocating the north crosswalk to the south leg of the intersection. As the eastbound left turn has the heaviest volume of the eastbound approach, relocating the north crosswalk to the south leg would reduce pedestrian conflicts and improve the processing capacity for the eastbound approach, while maintaining a pedestrian crossing across Mamaroneck Avenue. Due to the offset of Waverly Avenue and Van Ranst Place, the new south crosswalk could be installed south of Waverly Avenue and run perpendicular to align with the north sidewalk along Van Ranst Place as well as the south sidewalk along Waverly Avenue.

The capacity analysis results for 2038 Future Reasonable Build-Out with Improvements Condition incorporating the intersection improvements are shown in *Table 8*. Following the implementation of the intersection improvements, the following lane groups are anticipated to be congested in one or more peak hours compared to the Reasonable Build-out condition (without improvements).

Mamaroneck Avenue and Andrew Street/North Barry Avenue Ext– The westbound through-right lane group is anticipated to operate overcapacity at LOS E with a v/c ratio of 1.08 during the weekday AM peak hour. The northbound through right lane group is projected to operate near capacity at LOS D with a v/c ratio of 0.97 (caused by shift in green time away from the northbound approach). In addition, the southbound left turn lane is projected to operate LOS E in the weekday PM peak hour, however, with a lower v/c ratio of 0.92 compared to the existing condition (v/c = 0.95).

Mamaroneck Avenue and Waverly Avenue/Van Ranst Place

The eastbound left turn lane group is projected to operate near capacity at LOS E with v/c ratios of 0.98 and 0.96 during the weekday AM and PM peak hours, respectively.

Mamaroneck Avenue and Mt. Pleasant Avenue/Halstead Avenue

The northeastbound left turn lane group (on Mt. Pleasant Avenue) is projected to operate at a LOS E in the weekday AM and PM peak hours. This lane group is projected to operate near capacity with a v/c ratio of 0.96in the weekday AM and PM peak hours. The southbound left turn lane group is projected to operate at LOS D with a v/c ratio of 0.90.

Mamaroneck Avenue and E Boston Post Road (US 1)

The northbound left through and southbound left through lane groups are both anticipated to operate at LOS E during the weekday PM and Saturday midday peak hours.

E Boston Post Road (US 1) and North Barry Avenue

The southbound approach is projected to continue to operate at a LOS E in the weekday PM peak hour. The eastbound approach is projected to operate at LOS E with a v/c ratio of 1.05 in the weekday PM peak hour.

Table 8 – Future 2038 Reasonable Build-Out with Improvements Traffic Conditions

Intersection	Approach	Lane Group	Weekday AM Peak Hour (7:45 to 8:45 AM)					Weekday MD Peak Hour (12:45 to 1:45 PM)					Weekday PM Peak Hour (4:30 to 5:30 PM)					Saturday MD Peak Hour (12:00 to 1:00 PM)				
			v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)	v/c	Delay (sec/veh)	LOS	Queue (50th Pctl) (ft)	Queue (95th Pctl) (ft)
SIGNALIZED INTERSECTIONS																						
1. Mamaroneck Avenue (N-S)/ N. Barry Avenue (WB)/ Andrew Street(EB)	EB	LTR	0.33	29.2	C	24	47	0.14	24.8	C	23	23	0.27	25.9	C	31	54	0.14	24.4	C	18	28
	WB	L	0.17	29.7	C	37	66	0.15	29.3	C	32	66	0.19	30.1	C	41	74	0.12	28.9	C	26	62
		TR	**1.08**	79.4	**E**	~424	#764	0.66	15.8	B	75	0	0.73	17.1	B	91	4	0.73	20.5	C	120	37
	NB	L	0.02	15.0	B	2	7	0.02	12.7	B	3	8	0.04	16.2	B	3	11	0.02	12.8	B	3	10
		TR	**0.97**	43.6	D	617	#875	0.70	21.0	C	398	518	0.83	28.9	C	505	651	0.68	20.4	C	398	515
	SB	L	0.75	33.9	C	155	255	0.60	15.8	B	65	113	0.92	55.4	**E**	223	#338	0.69	21.5	C	75	145
		TR	0.44	8.5	A	195	256	0.41	8.2	A	181	236	0.65	11.3	B	382	488	0.45	8.6	A	215	273
	Overall		*	**39.4**	**D**	*	*	*	**15.8**	**B**	*	*	*	**22.6**	**C**	*	*	*	**16.5**	**B**	*	*
2. Mamaroneck Avenue (N-S)/Waverly Avenue (EB) /Van Ranst Place (WB)	EB	L	**0.98**	63.1	**E**	422	#751	0.81	41.5	D	288	#493	**0.96**	61.0	**E**	377	#681	0.83	43.3	D	298	#543
		R	0.36	24.7	C	50	96	0.31	26.4	C	41	79	0.33	26.1	C	44	93	0.43	30.1	C	57	98
	WB	L	0.14	18.3	B	41	67	0.16	21.3	C	46	55	0.11	20.0	B	32	55	0.14	21.1	C	37	53
		R	0.24	20.0	B	58	88	0.13	21.1	C	30	62	0.18	21.1	C	44	84	0.13	21.1	C	30	51
	NB	TR	0.66	27.9	C	282	388	0.54	16.8	B	222	304	0.65	29.8	C	296	387	0.53	16.7	B	223	305
	SB	T	0.68	18.9	B	314	424	0.42	12.3	B	167	231	0.55	14.7	B	246	333	0.52	13.5	B	228	304
	Overall		*	**30.8**	**C**	*	*	*	**20.4**	**C**	*	*	*	**29.7**	**C**	*	*	*	**20.7**	**C**	*	*
3. Mamaroneck Avenue (N-S) / Halstead Avenue (WB)/ Mt Pleasant Avenue (NEB)	WB	L	0.45	35.5	D	126	224	0.52	36.1	D	157	201	0.72	46.4	D	217	320	0.59	38.2	D	187	297
		TR	0.50	13.8	B	29	2	0.41	10.3	B	10	73	0.64	21.8	C	65	56	0.49	11.4	B	17	0
	NB	LTR	0.41	22.5	C	142	208	0.56	24.5	C	194	274	0.50	22.9	C	186	233	0.57	25.1	C	192	263
	SB	L	0.86	47.6	D	106	m#302	0.58	27.0	C	33	170	0.90	46.8	D	35	m#313	0.82	43.0	D	56	#87
		T	0.81	29.2	C	154	m#591	0.71	21.5	C	113	487	0.70	14.5	B	77	101	0.71	17.9	B	91	512
		R	0.51	6.6	A	41	54	0.34	6.0	A	49	75	0.48	7.2	A	51	80	0.37	5.7	A	30	45
	NEB	L	**0.96**	71.8	**E**	343	#626	0.82	52.6	D	271	#462	**0.96**	73.1	**E**	339	#530	0.81	51.4	D	275	#436
		R	0.40	17.8	B	60	150	0.52	23.3	C	98	200	0.56	25.4	C	115	237	0.48	21.3	C	86	193
	Overall		*	**30.4**	**C**	*	*	*	**25.7**	**C**	*	*	*	**30.3**	**C**	*	*	*	**26.1**	**C**	*	*
4. Boston Post Road (E-W) / Fenimore Road (SB)	EB	LT	0.60	14.4	B	207	275	0.58	14.2	B	195	260	0.74	18.9	B	252	330	0.88	29.1	C	261	#356
	WB	TR	0.59	20.7	C	286	267	0.53	19.3	B	243	293	0.75	23.9	C	398	506	0.85	26.9	C	466	596
	SB	L	0.32	26.5	C	114	184	0.35	26.9	C	131	175	0.51	30.1	C	200	321	0.40	27.9	C	150	251
		R	0.54	9.6	A	45	75	0.34	5.5	A	0	77	0.36	5.6	A	2	50	0.46	14.9	B	118	196
	Overall		*	**17.0**	**B**	*	*	*	**16.5**	**B**	*	*	*	**21.1**	**C**	*	*	*	**26.5**	**C**	*	*
5. Mamaroneck Avenue (N-S)/Boston Post Road (E-W)	EB	L	0.47	24.7	C	99	240	0.64	36.4	D	127	246	0.64	43.7	D	161	247	0.56	38.2	D	150	232
		TR	0.49	29.4	C	245	446	0.48	30.2	C	238	439	0.63	34.5	C	481	602	0.81	42.3	D	660	665
	WB	L	0.08	16.1	B	12	16	0.09	17.2	B	15	41	0.15	20.6	C	34	64	0.23	30.5	C	42	39
		TR	0.43	28.7	C	199	356	0.58	33.1	C	277	493	0.73	38.8	D	553	678	0.66	37.9	D	468	572
	NB	LT	0.06	38.8	D	19	55	0.37	42.2	D	106	188	0.83	79.6	**E**	237	#388	0.84	75.6	**E**	269	#424
		R	0.06	38.9	D	19	21	0.16	38.1	D	50	78	0.22	43.0	D	87	142	0.18	39.9	D	76	127
	SB	LT	0.41	44.3	D	121	182	0.61	49.5	D	195	293	0.85	76.0	**E**	297	#339	0.77	63.1	**E**	300	319
		R	0.51	32.4	C	195	293	0.31	26.2	C	108	258	0.54	35.7	D	304	335	0.36	29.6	C	189	298
	Overall		*	**30.2**	**C**	*	*	*	**34.1**	**C**	*	*	*	**43.1**	**D**	*	*	*	**43.8**	**D**	*	*
6. Boston Post Road (E-W)/N. Barry Avenue (SB) /S. Barry Avenue (NB)	EB	LTR	0.84	41.4	D	382	#699	0.74	35.7	D	308	501	**1.05**	79.4	**E**	~451	#943	0.83	39.6	D	306	#655
	WB	LTR	0.80	39.9	D	364	500	0.69	32.9	C	294	500	0.93	49.6	D	482	#776	0.75	34.6	C	280	545
	NB	L	0.24	25.9	C	61	120	0.25	25.5	C	53	117	0.37	27.5	C	95	183	0.32	28.6	C	68	152
		TR	0.20	25.2	C	88	160	0.10	23.7	C	37	85	0.26	26.3	C	111	202	0.17	27.7	C	59	97
	SB	LTR	0.79	52.2	D	324	#611	0.74	46.4	D	281	448	0.82	56.2	**E**	323	438	0.71	51.3	D	198	380
	Overall		*	**40.9**	**D**	*	*	*	**35.6**	**D**	*	*	*	**58.8**	**E**	*	*	*	**37.9**	**D**	*	*

Notes:

* Synchro does not provide overall v/c ratio for signalized intersections.

v/c = volume-to-capacity ratio; LOS = Level-of-Service; NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

L = left-turn, R = right-turn, T = through movement, LTR = left/through/right, TR = through/right-turn, LT = left-turn/through, LR = left-turn/right-turn

Synchro does not provide overall delay or v/c ratios for unsignalized intersections.

Queue Notes: ~ and # symbols indicates queue length exceeds capacity, "m" indicates 95th %ile queue is metered by upstream signal

VI. CONCLUSIONS

This report provides an evaluation of the potential traffic impacts at study area intersections based on the redevelopment scenario determined in the Redevelopment Parcel Identification Analysis report. This redevelopment scenario, referred to as the Reasonable Build-Out Scenario in this report, is projected to have a net increase of 1,142 residential dwelling units and a net decrease of 320,507 sf of commercial space. As commercial developments typically generate higher volumes of traffic than residential developments of a comparable size, the majority of travel demand forecasts for each cluster of development result in a reduction in peak hour vehicular trips, with a few clusters anticipated to experience slight increases in peak hour vehicular trips. However, general background growth outside of the study area as well as traffic generated by developments anticipated to open regardless of the moratorium (no-build sites) are projected to increase traffic volumes at the study area intersections in the 2038 Reasonable Build-Out condition.

Overall, the 2038 Reasonable Build-Out condition is projected to increase the number and intensity of congested lane groups at study area intersections (as shown in *Table 1*), with 5, 2, 9, and 6 congested lane groups in the weekday AM, midday, PM, and Saturday midday peak hours, respectively, compared to existing conditions. With the intersection improvements identified in this report, the number of congested lane groups is anticipated to be reduced to or remain at 4, 0, 9, and 2 in the weekday AM, midday, PM and Saturday midday peak hours, respectively, compared to the 2038 Reasonable Build-Out condition. The improvement measures identified in this study consist of primarily signal timing adjustments. These adjustments should be reviewed periodically as redevelopment occurs and refined as necessary as individual projects come online.

APPENDICES

1) Turning Movement Count (TMC) Summaries
2) Physical Inventory/Traffic Signal Timing Survey Summary
3) Existing Traffic Volume Flow Maps
4) Existing Pedestrian and Bicycle Volume Summary
5) Existing Synchro Traffic Analysis Reports
6) Reasonable Build-Out Net Incremental Development Scenarios by Cluster
7) Reasonable Build-Out Trip Generation/Travel Demand Forecasts by Cluster
8) Forecasted Future Incremental Traffic Volume Flow Maps
9) Reasonable Build-Out Condition Volume Flow Maps
10) Future Synchro Traffic Analysis Reports (without Improvements)
11) Future Synchro Traffic Analysis Reports (with Improvements)

Appendix 1

Turning Movement Count (TMC) Summaries

Study Name 1-MAMARONECK AVE AT ANDREW ST/N BARRY EXTENDED
Start Date 06-14-2018
Start Time 7:00 AM
Site Code

	MAMARONECK AVE Southbound				N BARRY EXTENTED Westbound				MAMARONECK AVE Northbound				ANDREW ST Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
7:45 AM	64	211	4	0	12	0	138	0	0	271	9	0	5	1	0	0
8:00 AM	55	213	2	0	6	0	115	0	1	251	4	0	6	2	1	0
8:15 AM	49	219	5	0	9	0	131	0	0	268	6	0	5	0	2	0
8:30 AM	42	186	3	0	15	0	142	0	1	239	6	0	3	2	3	0
12:45 PM	36	174	4	0	13	2	68	0	0	210	11	0	4	0	0	0
1:00 PM	32	181	4	0	7	0	77	0	1	224	15	0	6	2	1	0
1:15 PM	43	192	0	0	9	0	81	0	2	235	11	0	4	1	1	0
1:30 PM	49	172	7	0	11	0	78	0	1	225	7	0	3	0	2	0
4:30 PM	49	300	3	0	10	2	94	0	2	269	15	0	6	1	2	0
4:45 PM	75	264	8	0	16	1	98	0	2	273	10	0	5	4	0	0
5:00 PM	52	309	5	0	10	0	103	0	0	252	12	0	7	3	4	0
5:15 PM	52	295	8	0	11	1	84	0	1	240	8	0	4	2	1	0

Time Ending	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
8:45 AM	0.82	0.95	0.70	#DIV/0!	0.70	#DIV/0!	0.93	#DIV/0!	0.50	0.95	0.69	#DIV/0!	0.79	0.63	0.50	#DIV/0!
1:45 PM	0.82	0.94	0.54	#DIV/0!	0.77	0.25	0.94	#DIV/0!	0.50	0.95	0.73	#DIV/0!	0.71	0.38	0.50	#DIV/0!
5:30 PM	0.76	0.94	0.75	#DIV/0!	0.73	0.50	0.92	#DIV/0!	0.63	0.95	0.75	#DIV/0!	0.79	0.63	0.44	#DIV/0!

Time Ending	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
8:45 AM	0.05	0.07	0.00	#DIV/0!	0.05	#DIV/0!	0.03	#DIV/0!	0.00	0.09	0.08	#DIV/0!	0.05	0.20	0.17	#DIV/0!
1:45 PM	0.02	0.04	0.07	#DIV/0!	0.05	0.00	0.03	#DIV/0!	0.00	0.07	0.05	#DIV/0!	0.12	0.00	0.00	#DIV/0!
5:30 PM	0.04	0.01	0.00	#DIV/0!	0.06	0.00	0.01	#DIV/0!	0.00	0.03	0.02	#DIV/0!	0.00	0.00	0.00	#DIV/0!

Total PK 7:45-8:45	**210**	**829**	**14**	**0**	**42**	**0**	**526**	**0**	**2**	**1029**	**25**	**0**	**19**	**5**	**6**	**0**
Total PK 12:45-1:45	**160**	**719**	**15**	**0**	**40**	**2**	**304**	**0**	**4**	**894**	**44**	**0**	**17**	**3**	**4**	**0**
Total PK 4:30-5:30	**228**	**1168**	**24**	**0**	**47**	**4**	**379**	**0**	**5**	**1034**	**45**	**0**	**22**	**10**	**7**	**0**

Study Name	1-MAMARONECK AVE AT ANDREW ST/N BARRY EXTENDED-SAT
Start Date	06-16-2018
Start Time	12:00 PM
Site Code	

	MAMARONECK AVE Southbound				N BARRY EXTENDED Westbound				MAMARONECK AVE Northbound				ANDREW ST Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
12:00 PM	48	181	6	0	12	0	87	0	2	212	12	0	6	0	0	0
12:15 PM	55	218	4	0	7	1	92	0	0	238	14	0	5	1	2	0
12:30 PM	30	178	4	0	12	0	91	0	2	215	6	0	4	0	0	0
12:45 PM	43	202	0	0	9	1	88	0	1	229	12	0	3	1	2	0
1:00 PM	40	166	0	0	19	2	92	0	0	209	8	0	4	0	0	0
1:15 PM	48	186	2	0	7	0	78	0	1	218	12	0	3	0	0	0
1:30 PM	43	173	7	0	7	2	85	0	0	243	11	0	4	1	0	0
1:45 PM	42	176	3	0	8	0	73	0	1	179	9	0	3	0	1	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	0.80	0.89	0.58	#DIV/0!	0.83	0.50	0.97	#DIV/0!	0.63	0.94	0.79	#DIV/0!	0.75	0.50	0.50	#DIV/0!
1:15 PM	0.76	0.88	0.50	#DIV/0!	0.62	0.50	0.99	#DIV/0!	0.38	0.94	0.71	#DIV/0!	0.80	0.50	0.50	#DIV/0!
1:30 PM	0.84	0.91	0.38	#DIV/0!	0.62	0.38	0.95	#DIV/0!	0.50	0.95	0.79	#DIV/0!	0.88	0.25	0.25	#DIV/0!
1:45 PM	0.91	0.90	0.32	#DIV/0!	0.55	0.63	0.93	#DIV/0!	0.50	0.92	0.90	#DIV/0!	0.88	0.50	0.25	#DIV/0!
2:00 PM	0.90	0.94	0.43	#DIV/0!	0.54	0.50	0.89	#DIV/0!	0.50	0.87	0.83	#DIV/0!	0.88	0.25	0.25	#DIV/0!
2:15 PM	0.69	0.72	0.43	#DIV/0!	0.69	0.25	0.69	#DIV/0!	0.50	0.66	0.67	#DIV/0!	0.63	0.25	0.25	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	1.1%	1.7%	7.1%	#DIV/0!	7.5%	0.0%	1.4%	#DIV/0!	0.0%	2.2%	2.3%	#DIV/0!	5.6%	0.0%	25.0%	#DIV/0!
1:15 PM	1.2%	1.3%	0.0%	#DIV/0!	2.1%	0.0%	1.1%	#DIV/0!	0.0%	2.0%	2.5%	#DIV/0!	6.3%	0.0%	25.0%	#DIV/0!
1:30 PM	0.6%	1.8%	0.0%	#DIV/0!	2.1%	0.0%	1.1%	#DIV/0!	0.0%	2.6%	0.0%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!
1:45 PM	0.0%	2.1%	0.0%	#DIV/0!	0.0%	0.0%	0.6%	#DIV/0!	0.0%	2.0%	0.0%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!
2:00 PM	0.6%	2.0%	0.0%	#DIV/0!	2.4%	0.0%	0.6%	#DIV/0!	0.0%	2.6%	0.0%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!
2:15 PM	0.8%	2.2%	0.0%	#DIV/0!	4.5%	0.0%	0.4%	#DIV/0!	0.0%	2.5%	0.0%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!
Total PK 12 PM	176	779	14	0	40	2	358	0	5	894	44	0	18	2	4	0

Study Name	2-MAMARONECK AVE AT MT PLEASANT AVE/HALSTEAD AVE
Start Date	06-14-2018
Start Time	7:00 AM
Site Code	

	MAMARONECK AVE Southbound					HALSTEAD AVE Westbound					MAMARONECK AVE Northbound					MT PLEASANT AVE Northeastbound					BISHOP AVE Eastbound				
Start Time	Left	Thru	Bear Right	Right	U-Turn	Left	Bear Left	Thru	Right	U-Turn	Hard Left	Left	Thru	Right	U-Turn	Hard Left	Bear Left	Bear Right	Hard Right	U-Turn	Left	Thru	Right	Hard Right	U-Turn
7:45 AM	34	71	64	2	0	9	15	8	34	0	1	0	61	9	0	0	81	26	8	0	0	0	0	0	0
8:00 AM	22	51	49	6	0	13	13	3	31	0	0	1	67	11	0	0	80	25	4	0	0	0	0	0	0
8:15 AM	20	63	70	4	0	17	13	2	36	0	0	0	62	12	0	0	82	27	2	0	0	0	0	0	0
8:30 AM	29	65	58	1	0	15	14	2	38	0	2	1	73	10	0	0	75	30	6	0	0	0	0	0	0
12:45 PM	20	86	43	2	0	21	21	2	31	0	3	1	73	19	0	1	71	27	10	1	0	0	0	0	0
1:00 PM	26	71	57	1	0	15	9	2	23	0	5	2	69	18	0	0	60	22	13	0	0	0	0	0	0
1:15 PM	23	70	50	3	0	19	14	3	28	0	7	1	74	25	0	0	57	30	12	0	0	0	0	0	0
1:30 PM	16	76	52	1	0	19	24	3	28	0	6	0	85	17	0	0	59	25	19	0	0	0	0	0	0
4:30 PM	44	71	74	1	0	17	24	2	35	0	3	0	78	17	0	0	70	31	15	0	0	0	0	0	0
4:45 PM	29	92	54	4	0	13	33	3	43	0	7	1	63	7	0	1	71	31	12	0	0	0	0	0	0
5:00 PM	40	85	73	1	0	18	36	4	41	0	5	0	94	13	0	0	87	37	11	0	0	0	0	0	0
5:15 PM	33	81	82	0	0	19	40	7	43	0	1	0	72	12	0	0	59	37	10	0	0	0	0	0	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF					
8:45 AM	0.77	0.88	0.86	0.54	#DIV/0!	0.79	0.92	0.47	0.91	#DIV/0!	0.38	0.50	0.90	0.88	#DIV/0!	#DIV/0!	0.97	0.90	0.63	#DIV/0!					
1:45 PM	0.82	0.88	0.89	0.58	#DIV/0!	0.88	0.71	0.83	0.89	#DIV/0!	0.75	0.50	0.89	0.79	#DIV/0!	0.25	0.87	0.87	0.71	0.25					
5:30 PM	0.83	0.89	0.86	0.38	#DIV/0!	0.88	0.83	0.57	0.94	#DIV/0!	0.57	0.25	0.82	0.72	#DIV/0!	0.25	0.82	0.92	0.80	#DIV/0!					
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV					
8:45 AM	7%	7%	5%	0%	#DIV/0!	7%	11%	7%	11%	#DIV/0!	33%	0%	8%	5%	#DIV/0!	#DIV/0!	4%	5%	0%	#DIV/0!					
1:45 PM	5%	4%	2%	0%	#DIV/0!	8%	3%	0%	5%	#DIV/0!	10%	25%	1%	3%	#DIV/0!	0%	4%	4%	2%	0%					
5:30 PM	4%	1%	0%	0%	#DIV/0!	4%	3%	0%	4%	#DIV/0!	0%	0%	2%	4%	#DIV/0!	0%	1%	3%	2%	#DIV/0!					
Total PK 7:45-8:45	**105**	**250**	**241**	**13**	**0**	**54**	**55**	**15**	**139**	**0**	**3**	**2**	**263**	**42**	**0**	**0**	**318**	**108**	**20**	**0**					
Total PK 12:45-1:45	**85**	**303**	**202**	**7**	**0**	**74**	**68**	**10**	**110**	**0**	**21**	**4**	**301**	**79**	**0**	**1**	**247**	**104**	**54**	**1**					
Total PK 4:30-5:30	**146**	**329**	**283**	**6**	**0**	**67**	**133**	**16**	**162**	**0**	**16**	**1**	**307**	**49**	**0**	**1**	**287**	**136**	**48**	**0**					

Study Name 2-MAMARONECK AVE AT MT PLEASANT AVE/HALSTEAD AVE
Start Date 06-16-2018
Start Time 12:00 PM
Site Code

	MAMARONECK AVE Southbound					HALSTEAD AVE Westbound					MAMARONECK AVE Northbound					MT PLEASANT AVE Northeastbound					BISHOP AVE Eastbound				
Start Time	Left	Thru	Bear Right	Right	U-Turn	Left	Bear Left	Thru	Right	U-Turn	Hard Left	Left	Thru	Right	U-Turn	Hard Left	Bear Left	Bear Right	Hard Right	U-Turn	Left	Thru	Right	Hard Right	U-Turn
12:00 PM	38	79	52	1	0	19	27	4	27	0	9	0	70	11	0	1	47	31	7	0	0	0	0	1	0
12:15 PM	32	69	54	1	0	20	24	1	24	0	3	1	82	12	0	0	73	34	8	0	0	0	0	0	0
12:30 PM	14	75	56	3	0	9	31	2	37	0	5	0	67	20	0	0	65	26	11	0	0	0	0	0	0
12:45 PM	24	87	61	3	0	20	26	1	28	0	2	0	65	13	0	0	60	32	5	0	0	0	0	0	0
1:00 PM	28	67	53	2	0	10	21	1	24	0	5	1	71	13	0	1	65	32	17	0	0	0	0	0	0
1:15 PM	43	88	52	1	0	20	16	4	24	0	3	0	69	27	0	0	61	32	10	0	0	0	0	0	0
1:30 PM	25	71	46	1	0	13	9	1	32	0	7	0	90	20	0	2	65	31	18	0	0	0	0	0	0
1:45 PM	25	81	39	1	0	16	19	3	29	0	7	0	76	13	0	0	54	41	11	0	0	0	0	0	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	0.71	0.89	0.91	0.67	#DIV/0!	0.85	0.87	0.50	0.78	#DIV/0!	0.53	0.25	0.87	0.70	#DIV/0!	0.25	0.84	0.90	0.70	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.25	#DIV/0!
1:15 PM	0.77	0.86	0.92	0.75	#DIV/0!	0.74	0.82	0.63	0.76	#DIV/0!	0.75	0.50	0.87	0.73	#DIV/0!	0.25	0.90	0.91	0.60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1:30 PM	0.63	0.90	0.91	0.75	#DIV/0!	0.74	0.76	0.50	0.76	#DIV/0!	0.75	0.25	0.96	0.68	#DIV/0!	0.25	0.97	0.95	0.63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1:45 PM	0.70	0.89	0.87	0.58	#DIV/0!	0.79	0.69	0.44	0.84	#DIV/0!	0.61	0.25	0.82	0.68	#DIV/0!	0.38	0.97	0.99	0.69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2:00 PM	0.70	0.87	0.90	0.63	#DIV/0!	0.74	0.77	0.56	0.85	#DIV/0!	0.79	0.25	0.85	0.68	#DIV/0!	0.38	0.94	0.83	0.78	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	1.9%	2.6%	1.8%	0.0%	#DIV/0!	2.9%	0.9%	0.0%	4.3%	#DIV/0!	5.3%	0.0%	2.5%	1.8%	#DIV/0!	0.0%	1.2%	0.8%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.0%	#DIV/0!
1:15 PM	2.0%	1.0%	0.9%	0.0%	#DIV/0!	1.7%	2.9%	0.0%	5.3%	#DIV/0!	0.0%	0.0%	1.8%	0.0%	#DIV/0!	0.0%	0.8%	0.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1:30 PM	1.8%	0.3%	1.4%	0.0%	#DIV/0!	0.0%	4.3%	0.0%	4.4%	#DIV/0!	0.0%	0.0%	2.2%	0.0%	#DIV/0!	0.0%	1.2%	0.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1:45 PM	1.7%	0.6%	0.9%	0.0%	#DIV/0!	0.0%	5.6%	0.0%	1.9%	#DIV/0!	0.0%	0.0%	1.4%	0.0%	#DIV/0!	0.0%	0.8%	0.8%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2:00 PM	0.8%	0.3%	0.5%	0.0%	#DIV/0!	0.0%	6.2%	0.0%	1.8%	#DIV/0!	0.0%	0.0%	1.3%	0.0%	#DIV/0!	0.0%	0.8%	1.5%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total PK 1 PM	108	310	223	8	0	68	108	8	116	0	19	1	284	56	0	1	245	123	31	0	0	0	0	1	0

Study Name	3-MAMARONECK AVE AT POST RD
Start Date	06-14-2018
Start Time	7:00 AM
Site Code	

	MAMARONECK AVE Southbound				E BOSTON POST RD Westbound				MAMARONECK AVE Northbound				W BOSTON POST RD Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
7:45 AM	13	2	54	0	0	103	10	0	1	1	0	0	44	106	3	0
8:00 AM	13	3	31	0	1	76	13	0	3	1	1	0	51	111	4	0
8:15 AM	16	1	30	0	0	72	12	0	1	2	0	0	35	131	4	0
8:30 AM	22	4	27	0	7	101	10	0	1	2	5	0	42	139	5	0
12:45 PM	29	14	28	1	8	112	27	0	14	8	6	0	36	105	13	0
1:00 PM	23	9	31	0	6	123	20	0	4	5	7	0	58	126	12	0
1:15 PM	18	8	32	0	7	98	19	0	3	13	14	0	35	102	5	0
1:30 PM	31	7	36	0	0	94	10	0	6	11	3	0	40	115	8	0
4:30 PM	18	8	30	0	11	141	27	0	10	5	12	0	39	151	29	0
4:45 PM	29	6	38	0	10	137	22	0	42	6	21	0	35	140	24	0
5:00 PM	37	7	44	0	8	162	30	0	27	12	12	0	44	145	17	0
5:15 PM	21	12	61	0	7	137	17	0	13	8	9	0	40	149	12	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
8:45 AM	0.73	0.63	0.66	#DIV/0!	0.29	0.85	0.87	#DIV/0!	0.50	0.75	0.30	#DIV/0!	0.84	0.88	0.80	#DIV/0!
1:45 PM	0.81	0.68	0.88	0.25	0.66	0.87	0.70	#DIV/0!	0.48	0.71	0.54	#DIV/0!	0.73	0.89	0.73	#DIV/0!
5:30 PM	0.71	0.69	0.71	#DIV/0!	0.82	0.89	0.80	#DIV/0!	0.55	0.65	0.64	#DIV/0!	0.90	0.97	0.71	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
8:45 AM	8%	0%	5%	#DIV/0!	0%	5%	2%	#DIV/0!	0%	0%	0%	#DIV/0!	4%	6%	0%	#DIV/0!
1:45 PM	3%	3%	3%	0%	0%	5%	1%	#DIV/0!	0%	0%	3%	#DIV/0!	1%	3%	0%	#DIV/0!
5:30 PM	2%	0%	2%	#DIV/0!	0%	2%	0%	#DIV/0!	1%	0%	2%	#DIV/0!	2%	2%	0%	#DIV/0!
Total PK 7:45-8:45	64	10	142	0	8	352	45	0	6	6	6	0	172	487	16	0
Total PK 12:45-1:45	101	38	127	1	21	427	76	0	27	37	30	0	169	448	38	0
Total PK 4:30-5:30	105	33	173	0	36	577	96	0	92	31	54	0	158	585	82	0

Study Name	3-MAMARONECK AVE AT BOSTON POST RD-SAT
Start Date	06-16-2018
Start Time	12:00 PM
Site Code	

	MAMARONECK AVE Southbound				E BOSTON POST RD Westbound				MAMARONECK AVE Northbound				E BOSTON POST RD Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
12:00 PM	23	8	40	0	0	117	30	0	38	9	16	0	38	131	9	0
12:15 PM	23	14	37	0	7	137	27	0	32	18	16	0	37	176	9	0
12:30 PM	26	13	32	0	3	104	22	0	26	6	4	0	41	125	27	0
12:45 PM	23	21	33	0	13	125	16	0	8	3	13	0	39	126	50	0
1:00 PM	25	9	34	0	9	110	24	0	5	11	8	0	39	144	23	0
1:15 PM	17	19	36	0	18	107	32	0	21	30	18	0	53	103	32	0
1:30 PM	24	14	38	1	16	113	17	1	21	12	13	0	35	157	28	0
1:45 PM	24	12	36	0	11	105	17	0	10	10	8	0	40	119	21	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	0.91	0.67	0.89	#DIV/0!	0.44	0.88	0.79	#DIV/0!	0.68	0.50	0.77	#DIV/0!	0.95	0.79	0.48	#DIV/0!
1:15 PM	0.93	0.68	0.92	#DIV/0!	0.62	0.87	0.82	#DIV/0!	0.55	0.53	0.64	#DIV/0!	0.95	0.81	0.55	#DIV/0!
1:30 PM	0.88	0.74	0.94	#DIV/0!	0.60	0.89	0.73	#DIV/0!	0.58	0.42	0.60	#DIV/0!	0.81	0.86	0.66	#DIV/0!
1:45 PM	0.89	0.75	0.93	0.25	0.78	0.91	0.70	0.25	0.65	0.47	0.72	#DIV/0!	0.78	0.84	0.67	#DIV/0!
2:00 PM	0.90	0.71	0.95	0.25	0.75	0.96	0.70	0.25	0.68	0.53	0.65	#DIV/0!	0.79	0.83	0.81	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	1.1%	0.0%	2.1%	#DIV/0!	0.0%	0.6%	4.2%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!	1.9%	1.8%	0.0%	#DIV/0!
1:15 PM	0.0%	0.0%	2.2%	#DIV/0!	0.0%	1.7%	3.4%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!	1.9%	1.1%	0.0%	#DIV/0!
1:30 PM	0.0%	0.0%	0.7%	#DIV/0!	0.0%	2.7%	4.3%	#DIV/0!	0.0%	0.0%	0.0%	#DIV/0!	1.7%	1.2%	0.0%	#DIV/0!
1:45 PM	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	1.1%	0.0%	0.0%	0.0%	0.0%	#DIV/0!	1.2%	1.1%	0.0%	#DIV/0!
2:00 PM	1.1%	0.0%	0.0%	0.0%	0.0%	2.5%	1.1%	0.0%	0.0%	0.0%	0.0%	#DIV/0!	1.8%	1.3%	0.0%	#DIV/0!
Total PK 1 PM	95	56	142	0	23	483	95	0	104	36	49	0	155	558	95	0

Study Name	4-BOSTON POST RD AT FENIMORE RD
Start Date	06-14-2018
Start Time	7:00 AM
Site Code	

	W BOSTON POST RD Southbound			W BOSTON POST RD Northbound			FENIMORE RD Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
7:45 AM	164	15	0	25	164	0	30	75	0
8:00 AM	93	11	0	20	166	0	31	42	0
8:15 AM	92	14	0	21	177	0	26	47	0
8:30 AM	109	13	0	19	154	0	37	52	0
12:45 PM	153	17	0	27	149	0	42	46	0
1:00 PM	121	16	0	26	164	0	22	46	0
1:15 PM	135	15	0	22	133	0	27	52	0
1:30 PM	97	19	0	14	152	0	31	43	0
4:30 PM	146	28	0	18	199	0	52	38	0
4:45 PM	205	45	0	23	184	0	54	61	0
5:00 PM	182	38	0	19	174	0	51	43	0
5:15 PM	188	29	0	16	175	0	60	48	0

Time Ending	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
8:45 AM	0.70	0.88	#DIV/0!	0.85	0.93	#DIV/0!	0.84	0.72	#DIV/0!
1:45 PM	0.83	0.88	#DIV/0!	0.82	0.91	#DIV/0!	0.73	0.90	#DIV/0!
5:30 PM	0.88	0.78	#DIV/0!	0.83	0.92	#DIV/0!	0.90	0.78	#DIV/0!

Time Ending	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
8:45 AM	5%	8%	#DIV/0!	6%	4%	#DIV/0!	4%	6%	#DIV/0!
1:45 PM	5%	6%	#DIV/0!	6%	3%	#DIV/0!	1%	2%	#DIV/0!
5:30 PM	1%	5%	#DIV/0!	5%	2%	#DIV/0!	0%	1%	#DIV/0!

Total PK 7:45-8:45	458	53	0	85	661	0	124	216	0
Total PK 12:45-1:45	506	67	0	89	598	0	122	187	0
Total PK 4:30-5:30	721	140	0	76	732	0	217	190	0

Study Name	4-W BOSTON POST RD AT FENIMORE RD-SAT
Start Date	06-16-2018
Start Time	12:00 PM
Site Code	

	W BOSTON POST RD Southbound			W BOSTON POST Northbound			FENIMORE RD Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
12:00 PM	167	25	0	27	160	0	43	73	0
12:15 PM	187	26	0	29	204	0	38	60	0
12:30 PM	147	20	0	28	161	0	42	75	0
12:45 PM	157	25	0	28	195	0	47	45	0
1:00 PM	127	17	0	25	178	0	46	79	0
1:15 PM	163	27	0	18	166	0	51	59	0
1:30 PM	134	24	0	21	186	0	43	63	0
1:45 PM	138	24	0	19	170	0	60	56	0

	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	0.88	0.92	#DIV/0!	0.97	0.88	#DIV/0!	0.90	0.84	#DIV/0!
1:15 PM	0.83	0.85	#DIV/0!	0.95	0.90	#DIV/0!	0.92	0.82	#DIV/0!
1:30 PM	0.91	0.82	#DIV/0!	0.88	0.90	#DIV/0!	0.91	0.82	#DIV/0!
1:45 PM	0.89	0.86	#DIV/0!	0.82	0.93	#DIV/0!	0.92	0.78	#DIV/0!
2:00 PM	0.86	0.85	#DIV/0!	0.83	0.94	#DIV/0!	0.83	0.81	#DIV/0!

	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	1.1%	1.0%	#DIV/0!	0.9%	1.5%	#DIV/0!	1.2%	0.8%	#DIV/0!
1:15 PM	1.6%	1.1%	#DIV/0!	0.9%	1.1%	#DIV/0!	1.2%	0.8%	#DIV/0!
1:30 PM	1.7%	2.2%	#DIV/0!	1.0%	1.6%	#DIV/0!	0.5%	1.2%	#DIV/0!
1:45 PM	1.4%	1.1%	#DIV/0!	0.0%	1.7%	#DIV/0!	0.5%	1.2%	#DIV/0!
2:00 PM	1.2%	1.1%	#DIV/0!	0.0%	1.7%	#DIV/0!	2.0%	1.2%	#DIV/0!

Total PHF 1PM	658	96	0	112	720	0	170	253	0

Study Name	5-BOST POST RD AT N BARRY AVE
Start Date	06-14-2018
Start Time	7:00 AM
Site Code	

	N BARRY AVE Southbound				E BOSTON POST RD Westbound				N BARRY AVE Northbound				E BOSTON POST RD Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
7:45 AM	38	15	19	0	3	119	30	0	10	7	2	0	16	102	8	0
8:00 AM	39	9	10	0	1	90	22	0	18	21	0	0	16	118	13	0
8:15 AM	36	14	14	0	1	83	25	0	18	17	10	0	21	128	9	0
8:30 AM	33	16	22	0	4	111	34	0	22	20	5	0	24	119	17	0
12:45 PM	33	9	18	0	6	112	28	0	17	9	2	0	23	125	16	0
1:00 PM	27	7	21	0	5	128	26	0	15	11	4	0	22	111	21	0
1:15 PM	24	8	31	0	3	125	20	0	11	7	3	0	17	101	12	0
1:30 PM	33	12	20	0	1	95	19	0	21	5	2	0	17	106	15	0
4:30 PM	33	15	23	0	2	151	23	0	30	23	15	0	23	157	19	0
4:45 PM	22	4	28	0	3	146	24	0	34	12	8	0	29	137	25	0
5:00 PM	25	10	20	0	4	195	29	0	23	19	2	0	37	147	16	0
5:15 PM	35	14	27	0	3	154	22	0	24	20	5	0	28	122	11	0

Time Ending	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
8:45 AM	0.94	0.84	0.74	#DIV/0!	0.56	0.85	0.82	#DIV/0!	0.77	0.77	0.43	#DIV/0!	0.80	0.91	0.69	#DIV/0!
1:45 PM	0.89	0.75	0.73	#DIV/0!	0.63	0.90	0.83	#DIV/0!	0.76	0.73	0.69	#DIV/0!	0.86	0.89	0.76	#DIV/0!
5:30 PM	0.82	0.72	0.88	#DIV/0!	0.75	0.83	0.84	#DIV/0!	0.82	0.80	0.50	#DIV/0!	0.79	0.90	0.71	#DIV/0!

Time Ending	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
8:45 AM	3%	6%	6%	#DIV/0!	0%	2%	0%	#DIV/0!	3%	0%	0%	#DIV/0!	4%	6%	2%	#DIV/0!
1:45 PM	3%	0%	3%	#DIV/0!	7%	3%	3%	#DIV/0!	6%	0%	18%	#DIV/0!	4%	3%	3%	#DIV/0!
5:30 PM	0%	0%	0%	#DIV/0!	0%	1%	4%	#DIV/0!	1%	4%	3%	#DIV/0!	0%	2%	3%	#DIV/0!

Total PK 7:45-8:45	**146**	**54**	**65**	**0**	**9**	**403**	**111**	**0**	**68**	**65**	**17**	**0**	**77**	**467**	**47**	**0**
Total PK 12:45-1:45	**117**	**36**	**90**	**0**	**15**	**460**	**93**	**0**	**64**	**32**	**11**	**0**	**79**	**443**	**64**	**0**
Total PK 4:30-5:30	**115**	**43**	**98**	**0**	**12**	**646**	**98**	**0**	**111**	**74**	**30**	**0**	**117**	**563**	**71**	**0**

Study Name	5-BOSTON POST RD AT N BARRY AVE-SAT
Start Date	06-16-2018
Start Time	12:00 PM
Site Code	

	N BARRY AVE Southbound				BOSTON POST RD Westbound				N BARRY AVE Northbound				BOSTON POST RD Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
12:00 PM	16	14	20	0	6	125	20	0	19	10	7	0	30	127	26	0
12:15 PM	21	14	21	0	5	148	19	0	25	8	5	0	27	137	26	0
12:30 PM	21	11	18	0	4	127	24	0	18	5	4	0	21	122	16	0
12:45 PM	19	10	17	0	3	126	27	0	26	15	3	0	17	108	15	0
1:00 PM	29	28	17	0	2	129	23	0	13	18	4	0	25	137	18	0
1:15 PM	25	19	25	0	4	151	24	0	20	14	1	0	25	108	15	0
1:30 PM	23	16	24	0	4	116	25	0	13	12	2	0	30	138	16	0
1:45 PM	24	13	20	0	5	116	22	0	14	17	8	0	21	141	12	0
	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	0.92	0.88	0.90	#DIV/0!	0.75	0.89	0.83	#DIV/0!	0.85	0.63	0.68	#DIV/0!	0.79	0.90	0.80	#DIV/0!
1:15 PM	0.78	0.56	0.87	#DIV/0!	0.70	0.90	0.86	#DIV/0!	0.79	0.64	0.80	#DIV/0!	0.83	0.92	0.72	#DIV/0!
1:30 PM	0.81	0.61	0.77	#DIV/0!	0.81	0.88	0.91	#DIV/0!	0.74	0.72	0.75	#DIV/0!	0.88	0.87	0.89	#DIV/0!
1:45 PM	0.83	0.65	0.83	#DIV/0!	0.81	0.86	0.92	#DIV/0!	0.69	0.82	0.63	#DIV/0!	0.81	0.89	0.89	#DIV/0!
2:00 PM	0.87	0.68	0.86	#DIV/0!	0.75	0.85	0.94	#DIV/0!	0.75	0.85	0.47	#DIV/0!	0.84	0.93	0.85	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	2.6%	2.0%	0.0%	#DIV/0!	5.6%	1.0%	5.6%	#DIV/0!	2.3%	5.3%	5.3%	#DIV/0!	1.1%	2.2%	4.8%	#DIV/0!
1:15 PM	2.2%	1.6%	1.4%	#DIV/0!	0.0%	1.5%	4.3%	#DIV/0!	3.7%	4.3%	0.0%	#DIV/0!	0.0%	2.2%	1.3%	#DIV/0!
1:30 PM	2.1%	1.5%	1.3%	#DIV/0!	0.0%	2.1%	5.1%	#DIV/0!	3.9%	0.0%	0.0%	#DIV/0!	0.0%	2.1%	1.6%	#DIV/0!
1:45 PM	1.0%	1.4%	1.2%	#DIV/0!	0.0%	1.7%	5.1%	#DIV/0!	1.4%	1.7%	0.0%	#DIV/0!	0.0%	2.0%	1.6%	#DIV/0!
2:00 PM	1.0%	0.0%	1.2%	#DIV/0!	0.0%	1.8%	5.3%	#DIV/0!	1.7%	1.6%	0.0%	#DIV/0!	0.0%	2.3%	3.3%	#DIV/0!
	77	49	76	0	18	526	90	0	88	38	19	0	95	494	83	0

Study Name	6-MAMARONECK AVE AT WAVERLY AVE
Start Date	06-14-2018
Start Time	7:00 AM
Site Code	

	MAMARONECK AVE Southbound				Westbound Approach Westbound				MAMARONECK AVE Northbound				WAVERLY AVE Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
7:45 AM	0	152	0	0	19	0	26	0	0	182	17	0	84	0	13	0
8:00 AM	0	129	0	0	11	0	18	0	0	177	14	1	102	0	8	0
8:15 AM	0	150	0	0	14	0	17	0	0	182	19	0	97	0	11	0
8:30 AM	0	131	0	0	9	0	12	0	0	174	16	0	92	0	9	0
12:45 PM	0	155	0	0	6	0	4	0	0	179	5	0	64	0	11	0
1:00 PM	0	151	0	0	10	0	12	0	0	147	10	0	62	0	12	0
1:15 PM	0	131	0	0	6	0	12	0	0	161	11	0	82	0	7	0
1:30 PM	0	139	0	0	20	0	13	0	0	175	8	0	84	0	6	0
1:45 PM	0	142	0	0	7	1	13	0	0	166	11	0	59	0	9	0
4:30 PM	0	198	0	0	7	0	14	0	0	205	8	0	78	0	15	0
4:45 PM	0	200	0	0	5	0	18	0	0	165	10	0	86	0	15	0
5:00 PM	0	187	0	0	12	0	19	0	0	218	6	0	90	0	10	0
5:15 PM	0	198	0	0	14	0	10	0	0	180	17	0	92	0	10	0
Time Ending	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
8:45 AM	#DIV/0!	0.92	#DIV/0!	#DIV/0!	0.70	#DIV/0!	0.70	#DIV/0!	#DIV/0!	0.98	0.87	0.25	0.92	#DIV/0!	0.79	#DIV/0!
1:45 PM	#DIV/0!	0.93	#DIV/0!	#DIV/0!	0.53	#DIV/0!	0.79	#DIV/0!	#DIV/0!	0.92	0.77	#DIV/0!	0.87	#DIV/0!	0.75	#DIV/0!
5:30 PM	#DIV/0!	0.98	#DIV/0!	#DIV/0!	0.68	#DIV/0!	0.80	#DIV/0!	#DIV/0!	0.88	0.60	#DIV/0!	0.94	#DIV/0!	0.83	#DIV/0!
	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
8:45 AM	#DIV/0!	7%	#DIV/0!	#DIV/0!	4%	#DIV/0!	7%	#DIV/0!	#DIV/0!	10%	3%	0%	3%	#DIV/0!	7%	#DIV/0!
1:45 PM	#DIV/0!	5%	#DIV/0!	#DIV/0!	0%	#DIV/0!	2%	#DIV/0!	#DIV/0!	7%	0%	#DIV/0!	1%	#DIV/0!	0%	#DIV/0!
5:30 PM	#DIV/0!	4%	#DIV/0!	#DIV/0!	3%	#DIV/0!	0%	#DIV/0!	#DIV/0!	4%	0%	#DIV/0!	1%	#DIV/0!	2%	#DIV/0!
Total PK 7:45-8:45	0	562	0	0	53	0	73	0	0	715	66	1	375	0	41	0
Total PK 12:45-1:45	0	576	0	0	42	0	41	0	0	662	34	0	292	0	36	0
Total PK 4:30-5:30	0	783	0	0	38	0	61	0	0	768	41	0	346	0	50	0

Study Name	6-MAMARONECK AVE AT WAVERLY AVE-SAT
Start Date	06-16-2018
Start Time	12:00 PM
Site Code	

	MAMARONECK AVE Southbound				VAN RANT PL WB Westbound				MAMARONECK AVE Northbound				WAVERLY AVE Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
12:00 PM	0	164	0	0	11	0	13	0	0	147	0	0	78	0	10	0
12:15 PM	0	184	0	1	5	0	8	0	0	180	0	0	78	0	16	0
12:30 PM	0	156	0	1	16	0	7	0	0	163	0	0	69	0	13	0
12:45 PM	0	196	0	0	6	0	6	0	0	163	0	0	77	0	8	0
1:00 PM	0	153	0	0	11	0	7	0	0	169	0	0	69	0	20	0
1:15 PM	0	164	0	0	5	0	5	0	0	152	0	0	60	0	7	0
1:30 PM	0	147	0	0	5	0	7	0	0	189	0	0	71	0	11	0
1:45 PM	0	136	0	0	7	0	7	0	0	145	0	0	59	0	12	0

	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF	PHF
1:00 PM	#DIV/0!	0.89	#DIV/0!	0.50	0.59	#DIV/0!	0.65	#DIV/0!	#DIV/0!	0.91	#DIV/0!	#DIV/0!	0.97	#DIV/0!	0.73	#DIV/0!
1:15 PM	#DIV/0!	0.88	#DIV/0!	0.50	0.59	#DIV/0!	0.88	#DIV/0!	#DIV/0!	0.94	#DIV/0!	#DIV/0!	0.94	#DIV/0!	0.71	#DIV/0!
1:30 PM	#DIV/0!	0.85	#DIV/0!	0.25	0.59	#DIV/0!	0.89	#DIV/0!	#DIV/0!	0.96	#DIV/0!	#DIV/0!	0.89	#DIV/0!	0.60	#DIV/0!
1:45 PM	#DIV/0!	0.84	#DIV/0!	#DIV/0!	0.61	#DIV/0!	0.89	#DIV/0!	#DIV/0!	0.89	#DIV/0!	#DIV/0!	0.90	#DIV/0!	0.58	#DIV/0!
2:00 PM	#DIV/0!	0.91	#DIV/0!	#DIV/0!	0.64	#DIV/0!	0.93	#DIV/0!	#DIV/0!	0.87	#DIV/0!	#DIV/0!	0.91	#DIV/0!	0.63	#DIV/0!

	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV	% HV
1:00 PM	#DIV/0!	2.1%	#DIV/0!	0.0%	5.3%	#DIV/0!	0.0%	#DIV/0!	#DIV/0!	3.4%	#DIV/0!	#DIV/0!	1.0%	#DIV/0!	2.1%	#DIV/0!
1:15 PM	#DIV/0!	1.6%	#DIV/0!	0.0%	5.3%	#DIV/0!	0.0%	#DIV/0!	#DIV/0!	2.7%	#DIV/0!	#DIV/0!	0.7%	#DIV/0!	1.8%	#DIV/0!
1:30 PM	#DIV/0!	1.6%	#DIV/0!	0.0%	7.9%	#DIV/0!	0.0%	#DIV/0!	#DIV/0!	2.5%	#DIV/0!	#DIV/0!	1.1%	#DIV/0!	2.1%	#DIV/0!
1:45 PM	#DIV/0!	2.0%	#DIV/0!	#DIV/0!	3.7%	#DIV/0!	0.0%	#DIV/0!	#DIV/0!	1.8%	#DIV/0!	#DIV/0!	1.1%	#DIV/0!	0.0%	#DIV/0!
2:00 PM	#DIV/0!	1.7%	#DIV/0!	#DIV/0!	3.6%	#DIV/0!	0.0%	#DIV/0!	#DIV/0!	2.0%	#DIV/0!	#DIV/0!	1.9%	#DIV/0!	0.0%	#DIV/0!

Total PHF 1:00 PM	0	700	0	2	38	0	34	0	0	653	0	0	302	0	47	0

Appendix 2

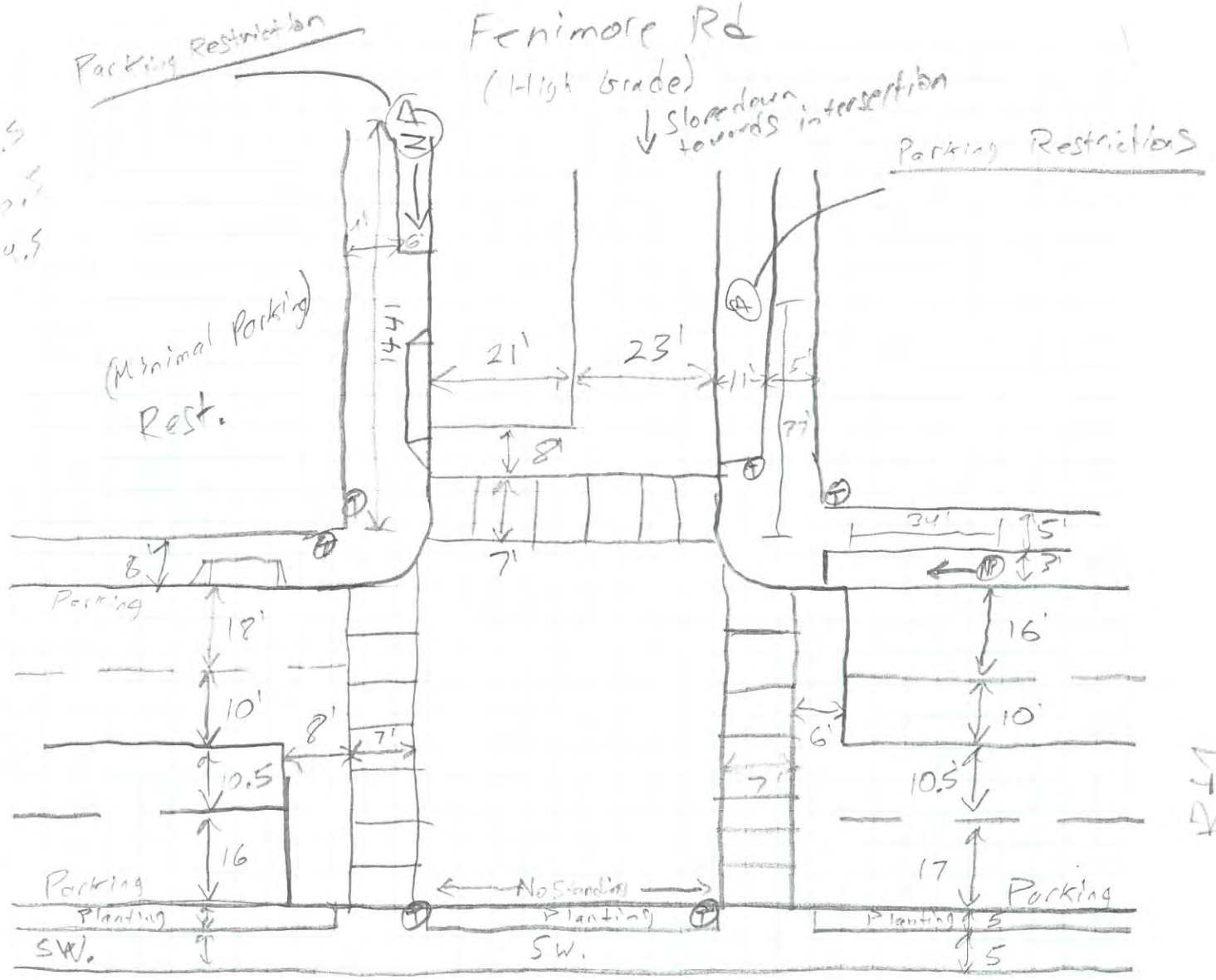
Physical Inventories &
Traffic Signal Timing Survey Summary

Rt. 1 + Fenimore Rd

Mamaroneck Moratorium Study
SUBJECT
Intersection Inventory J.I.
JOB NO. DESIGNED BY

DATE CHECKED BY

NV5
Delivering Solutions
Improving Lives



Rt. 1

Rt. 1

Notes:

Ped signals for all X. walks

	G	Y	R
EB WB	31	4	1
SB	29	4	1

90 sec cycle

Simple 2-phase signal

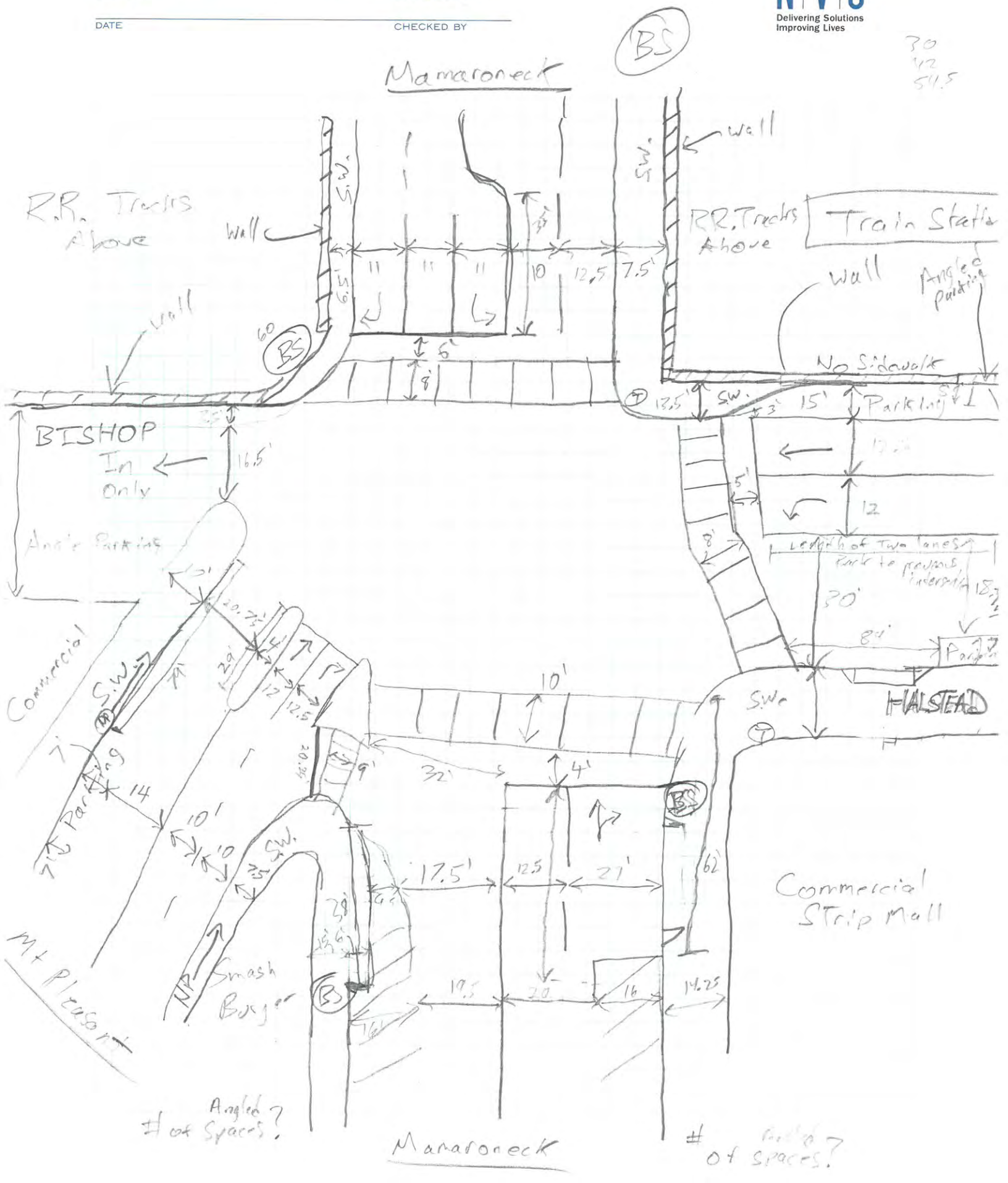
Ped actuated on rest

Southwest Corner

Mamaroneck Moratorium Study
SUBJECT
Intersection Inventory J.I.
JOB NO. DESIGNED BY
DATE CHECKED BY

Mamaroneck + Halstead + Mt. Pleasant

NV5
Delivering Solutions
Improving Lives



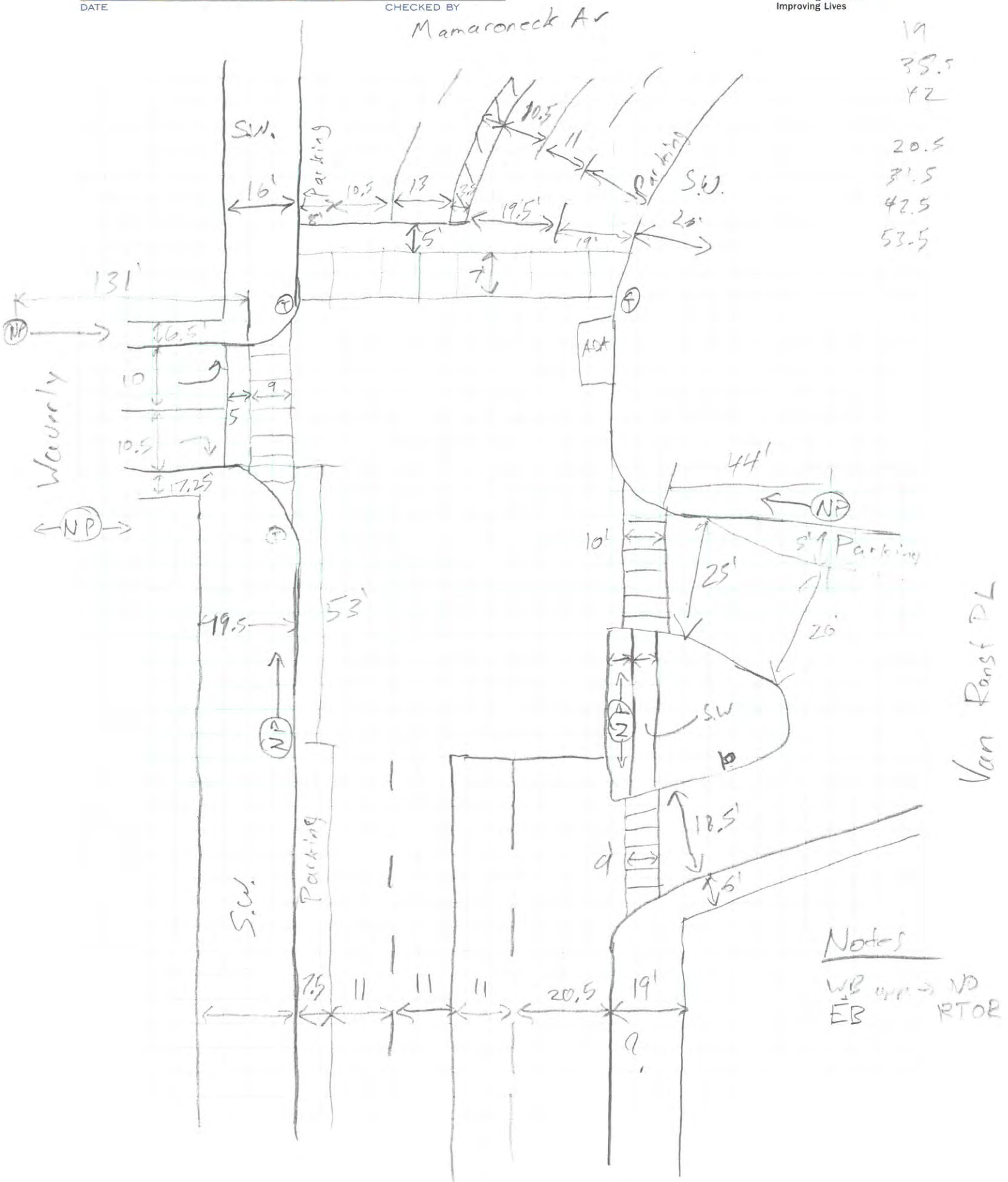
Mamaroneck Motatorium Study

SUBJECT
Intersection Inventory J.I.

JOB NO. DESIGNED BY

DATE CHECKED BY

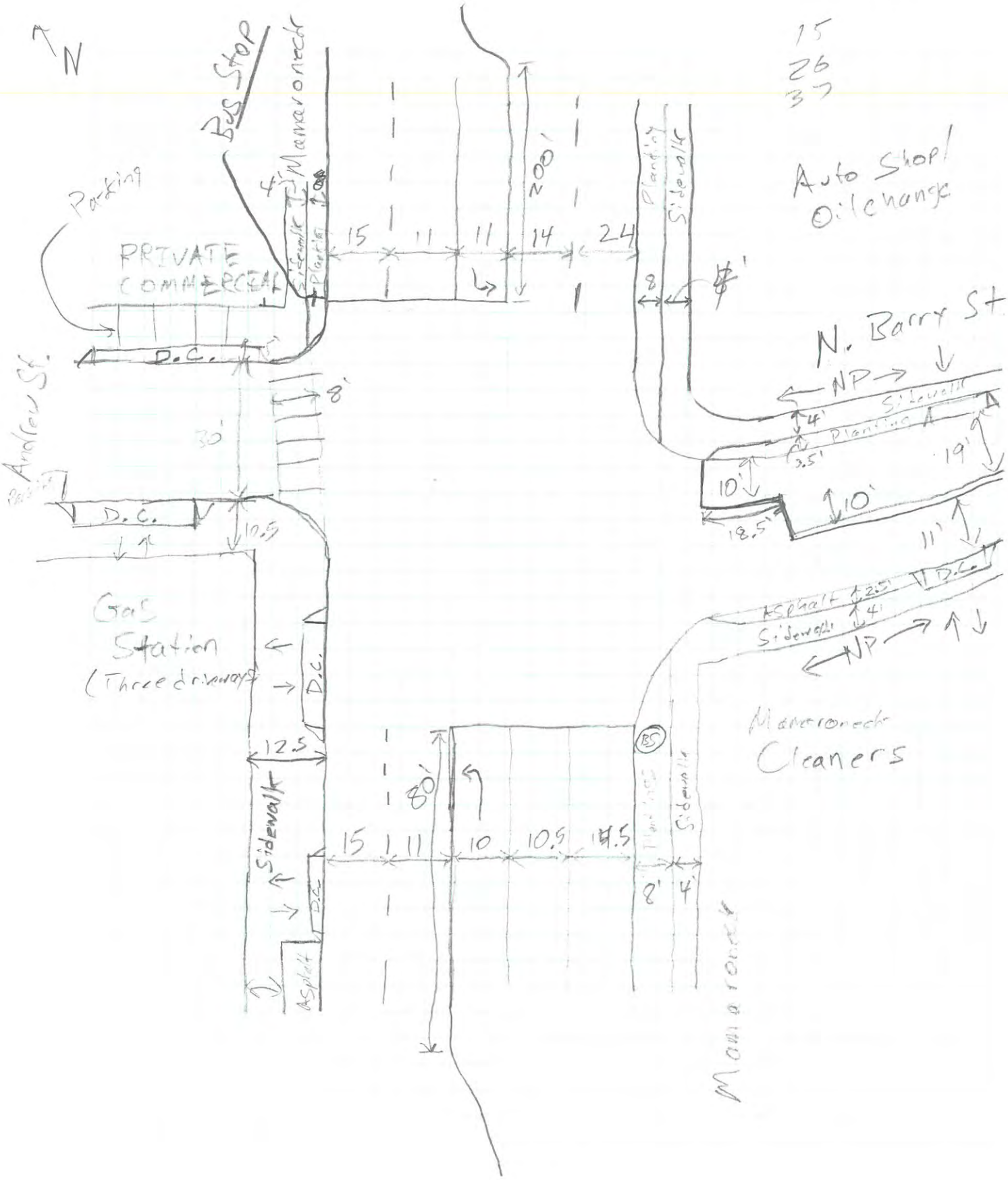
NV5
Delivering Solutions
Improving Lives



Mamaroneck Moratorium Study
SUBJECT
Intersection Inventory J.I.
JOB NO. DESIGNED BY
DATE CHECKED BY

Mamaroneck Ave + N Barry St Andrew St

NV5 Delivering Solutions Improving Lives



Mamaroneck Ave + Rt 1

Mamaroneck Moratorium Study

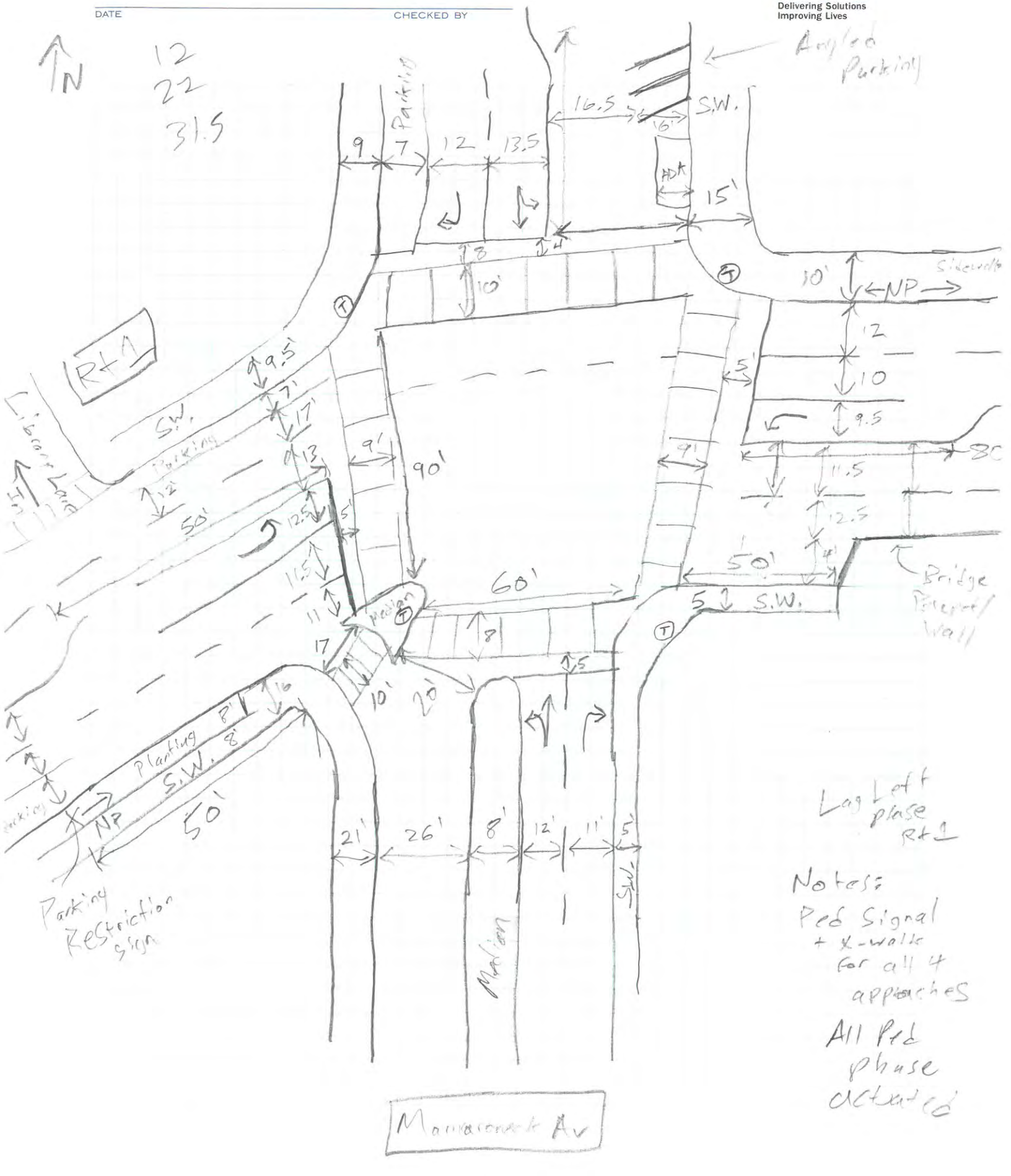
SUBJECT

Intersection Inventory J.I.

JOB NO. DESIGNED BY

DATE CHECKED BY

NV5 Delivering Solutions Improving Lives



Parking Restriction sign

Lag Left phase Rt 1

Notes:

Ped Signal + x-walks for all 4 approaches

All Ped phase actuated

Mamaroneck Moratorium Study

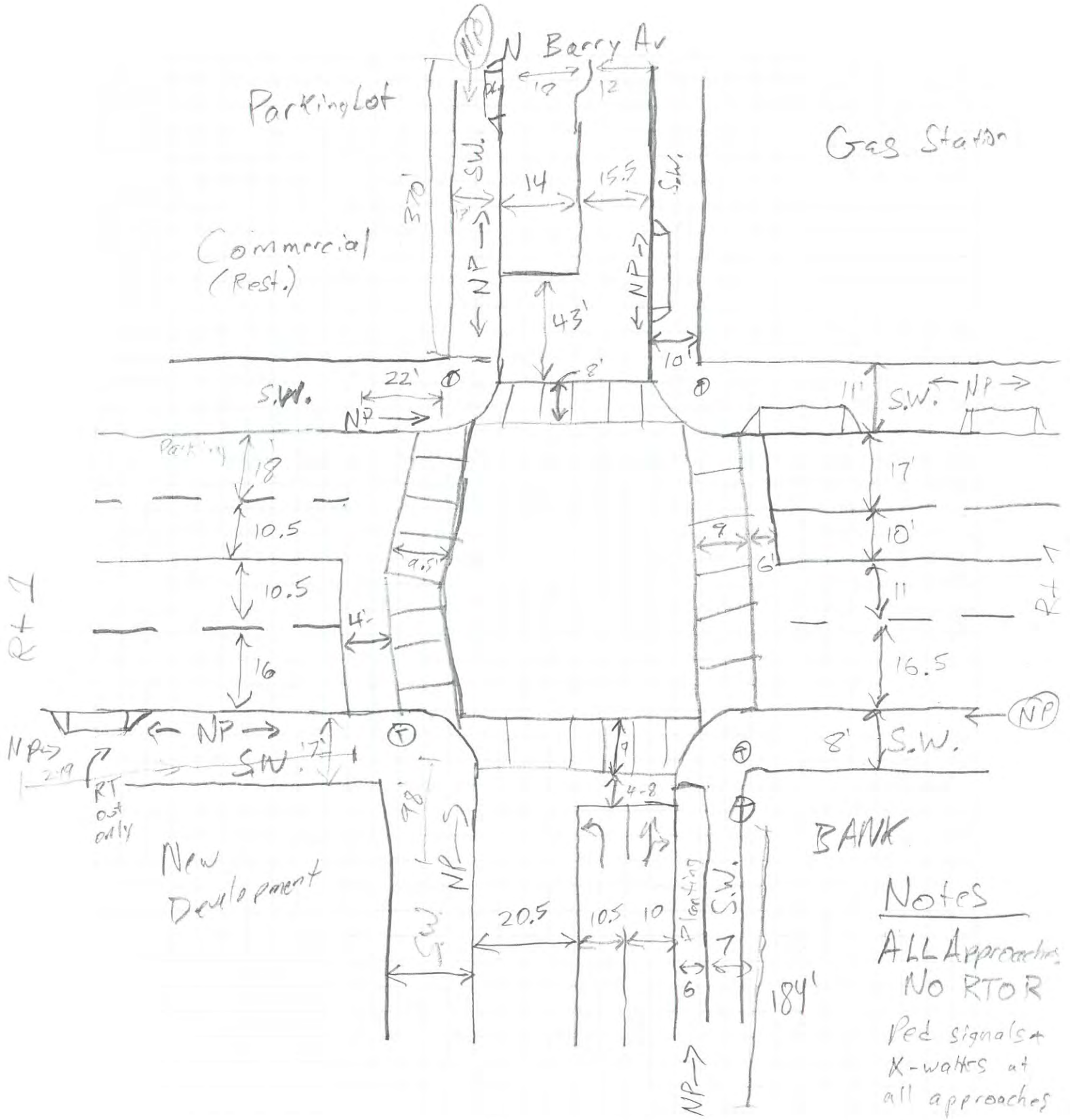
SUBJECT
Intersection Inventory J.I.

JOB NO. DESIGNED BY

DATE CHECKED BY

R+1 + N. Barry Av

NV5
Delivering Solutions
Improving Lives



Notes

ALL Approaches
NO RTOR

Ped signals +
X-walks at
all approaches

double c pic
phase?

Signal Timing Survey Summaries

Intersection		EB/WB				SB Lead				NB/SB					Legend		
		G	Y	R	Tot	G	Y	R	Tot	G	Y	R	Tot	Total Cycle Length	G	=	Green Time
Mamaroneck Ave &	AM -fiel	19	3	2	24	9	3	2	14	47	3	2	52	90	Y	=	Yellow Time
N. Barry Ave / Andrew St															R	=	Red (clearance) Time
	TCC	22	3	2	27	10	3	2	15	45	3	2	50	92	Tot	=	Total Phase Length
	USE:	**22**	**3**	**2**	**27**	**10**	**3**	**2**	**15**	**45**	**3**	**2**	**50**	**92**			

TCC - Represents Timing as shown on programming sheets inside trafffic control cabinet

		EB/WB				NB/SB				
		G	Y	R	Tot	G	Y	R	Tot	Total Cycle Length
Mamaroneck Ave &	AM	45	3	2	50	25	3	2	30	80
Waverly Ave / Van Ranst Pl										
	TCC	45	4	2	51	25	4	2	31	82
	USE	**45**	**4**	**2**	**51**	**25**	**4**	**2**	**31**	**82**

TCC - Represents Timing as shown on programming sheets inside trafffic control cabinet

		NB/SB				NEB				WB				
		G	Y	R	Tot	G	Y	R	Tot	G	Y	R	Tot	Total Cycle Length
Mamaroneck Ave &	AM - fie	38	3	2	43	19	3	2	24	19	3	2	24	91
Halstead Ave / Mt Pleasant														
	TCC	35	4	1	40	20	4	1	25	22	4	1	27	92
	USE	**35**	**4**	**1**	**40**	**20**	**4**	**1**	**25**	**22**	**4**	**1**	**27**	**92**

TCC - Represents Timing as shown on programming sheets inside trafffic control cabinet

		SB				NB				EB				
		G	Y	R	Tot	G	Y	R	Tot	G	Y	R	Tot	Total Cycle Length
Mamaroneck Ave &	AM - fie	35	3	2	40	20	3	2	25	20	3	2	25	90
Hoyt St														
	TCC	35	4	1	40	20	4	1	25	22	4	1	27	92
	USE	**35**	**4**	**1**	**40**	**20**	**4**	**1**	**25**	**22**	**4**	**1**	**27**	**92**

TCC - Represents Timing as shown on programming sheets inside trafffic control cabinet

		EB/WB				EB L/WB L/SB R				NB/SB				PED (actuated)	
		G	Y	R	Tot	G	Y	R	Tot	G	Y	R	Tot	Walk Time	Total Cycle Length
Mamaroneck Ave &	AM	50	4	1	55	15	4	1	20	30	4	1	35	30	110
Post Road (Rt 1)															
	MD	50	4	1	55	15	4	1	20	30	4	1	35		110
	USE	**50**	**4**	**1**	**55**	**15**	**4**	**1**	**20**	**30**	**4**	**1**	**35**	30	110

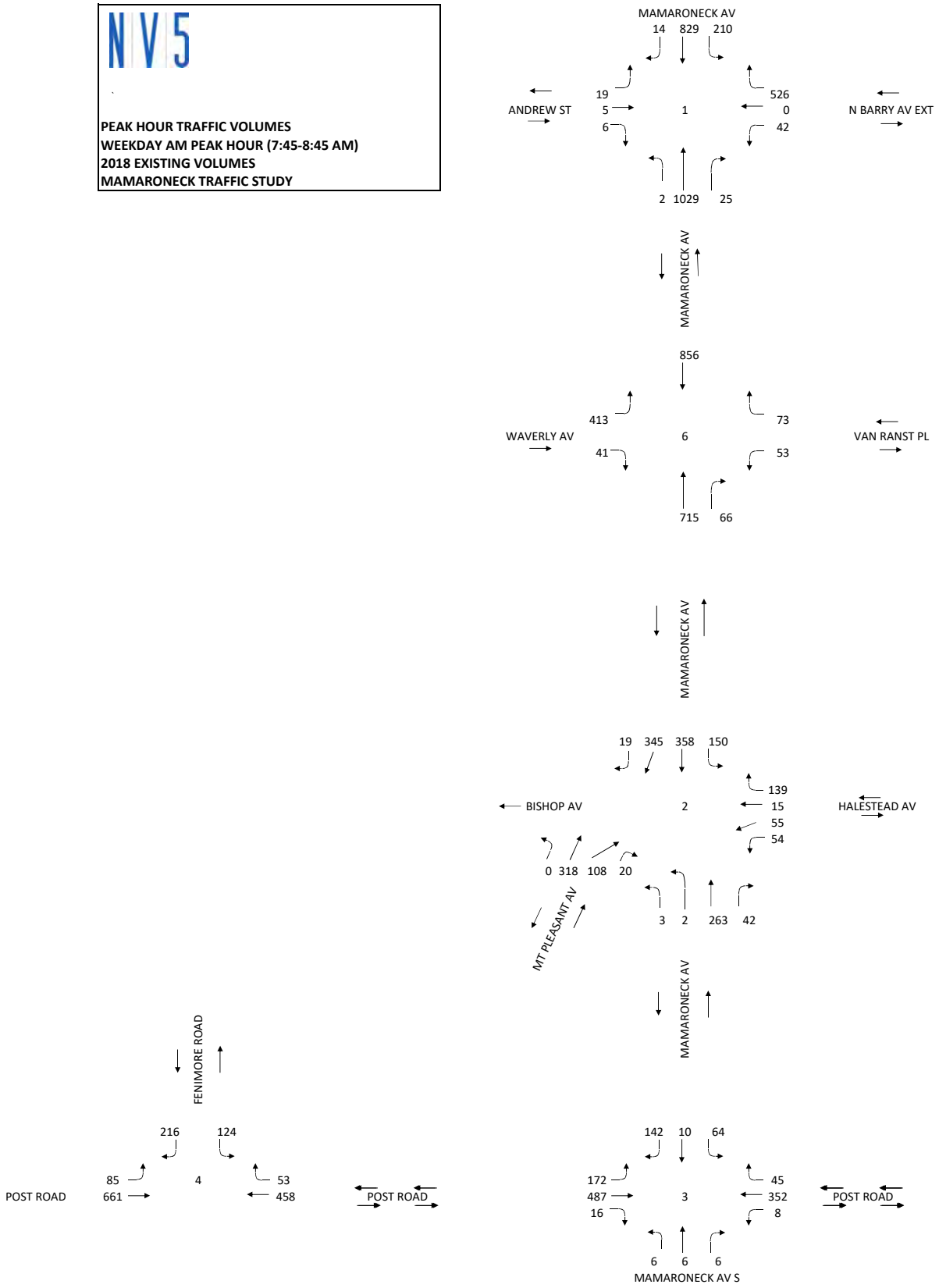
		EB/WB				SB				
		G	Y	R	Tot	G	Y	R	Tot	Total Cycle Length
Fenimore Road &	AM - Fie	30	4		34	29	4		33	67
Post Road (Rt 1)										
	MD - Fie	32	4		36	30	4		34	70
	USE	**31**	**4**	**1**	**36**	**29**	**4**	**1**	**34**	**70**

		WB Lead				EB/WB				EB Lag				NB (actuated)				NB/SB				PED (Actuated)
		Max G	Min G	Y	R	Max G	Min G	Y	R	Max G	Min G	Y	R	Max G	Min G	Y	R	Max G	Min G	Y	R	Walk Time
N. Barry Ave/S. Barry Ave &	**Field**	**15**	**7**	**4**	**2**	**25**	**10**	**4**	**2**	**15**	**10**	**4**	**2**	**10**	**7**	**4**	**2**	**30**	**10**	**4**	**2**	**19**
Post Road (Rt 1)																						

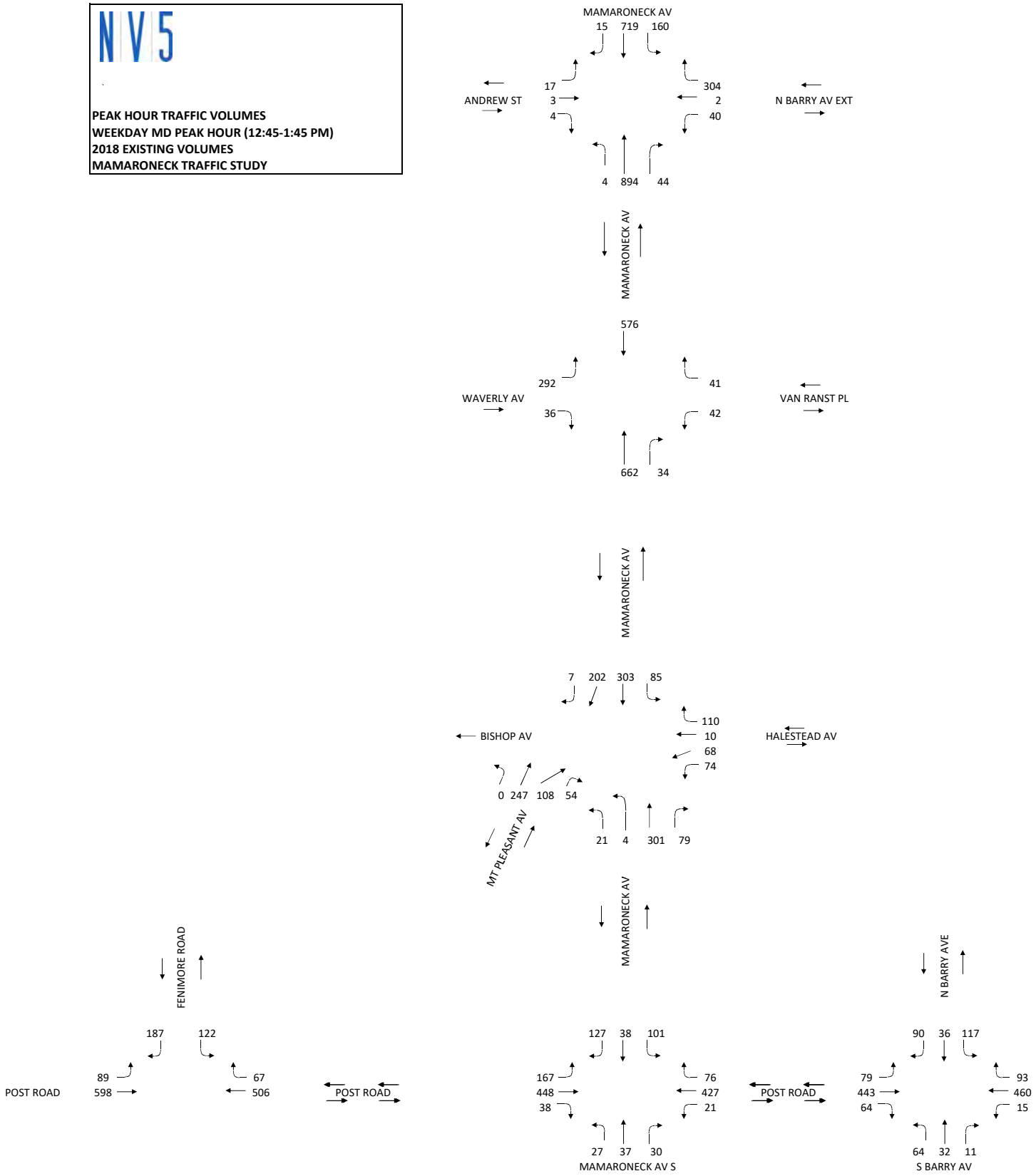
Appendix 3

Existing Traffic Volume Flow Maps

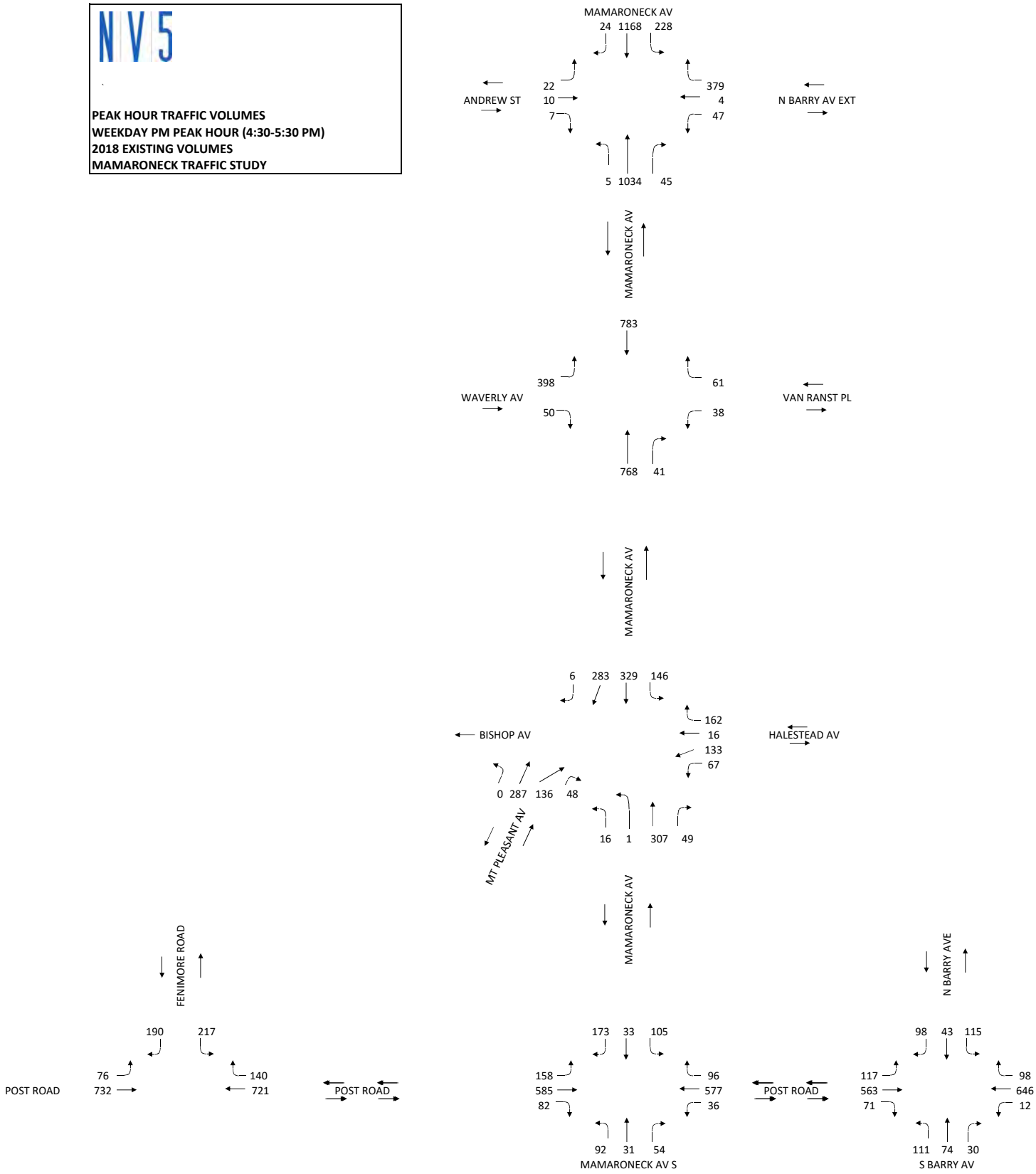
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
2018 EXISTING VOLUMES
MAMARONECK TRAFFIC STUDY



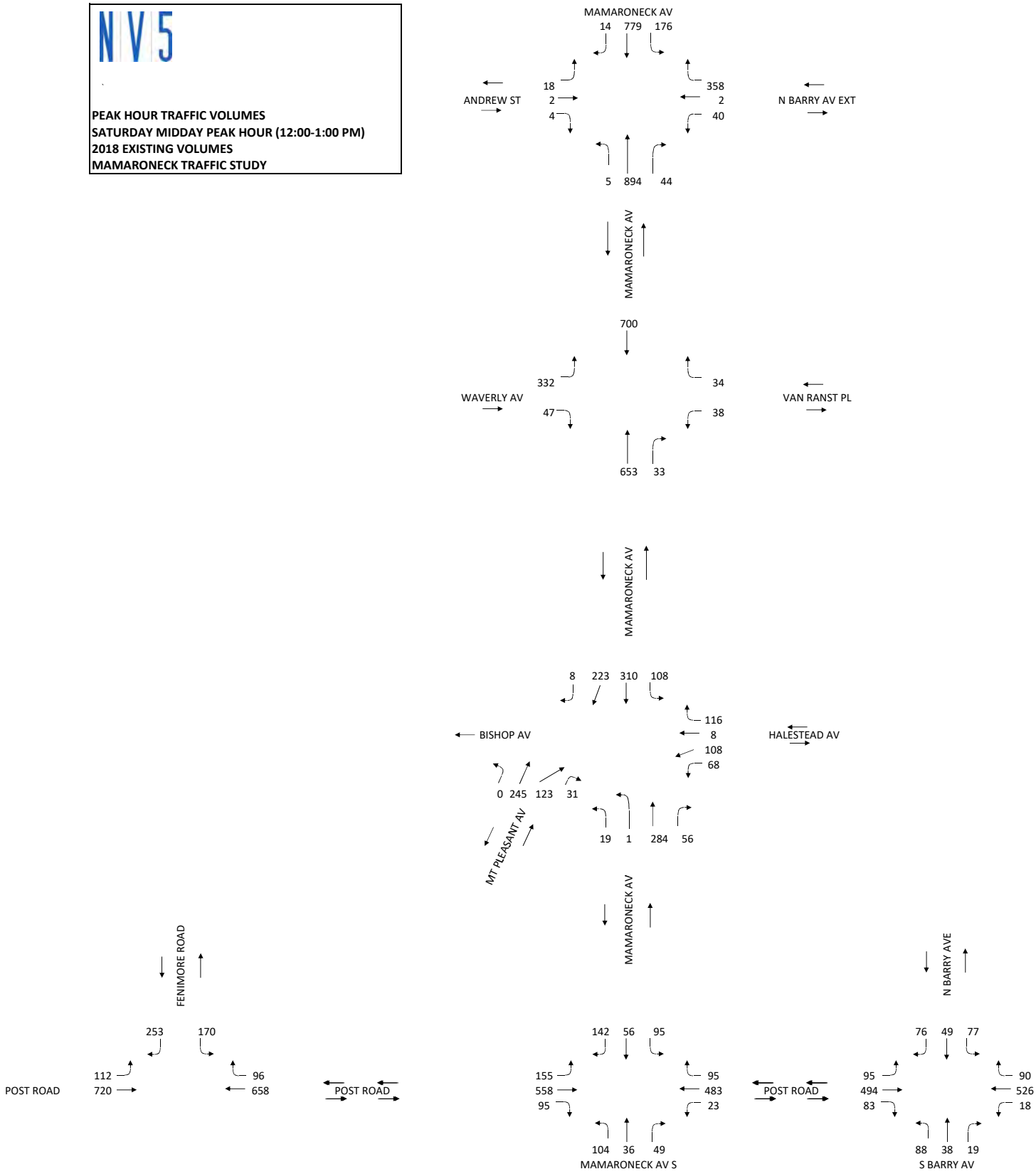
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
2018 EXISTING VOLUMES
MAMARONECK TRAFFIC STUDY



PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
2018 EXISTING VOLUMES
MAMARONECK TRAFFIC STUDY



PEAK HOUR TRAFFIC VOLUMES
SATURDAY MIDDAY PEAK HOUR (12:00-1:00 PM)
2018 EXISTING VOLUMES
MAMARONECK TRAFFIC STUDY



Appendix 4

Existing Pedestrian and Bicycle Volume Summary

Village of Mamaroneck - Moratorium Study
Pedestrian and Bicycle Volumes at Study Area Intersections

Pedestrians

	Total Volumes by Peak Hour			
Intersection	AM	MD	PM	SAT
Mamaroneck Ave & N. Barry Ext/Andrew St	28	17	25	10
Mamaroneck Ave & Waverly Ave	160	100	162	173
Mamaroneck Ave & Halstead Ave/Mt. Pleasant	409	193	258	198
Mamaroneck Ave & Boston Post Rd (Rt 1)	42	44	73	127
Boston Post Rd (Rt 1) & Fenimore Rd	15	24	30	22
Boston Post Rd (Rt 1) & N. Barry Ave	79	39	43	35
Total	733	417	591	565

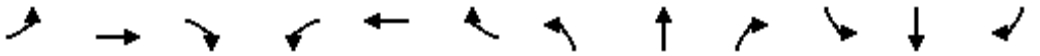
Total Bicycles

	Total Volumes by Peak Hour			
Intersection	AM	MD	PM	SAT
Mamaroneck Ave & N. Barry Ext/Andrew St	8	2	4	8
Mamaroneck Ave & Waverly Ave	5	3	13	8
Mamaroneck Ave & Halstead Ave/Mt. Pleasant	8	9	2	7
Mamroneck Ave & Boston Post Rd (Rt 1)	12	9	24	14
Boston Post Rd (Rt 1) & Fenimore Rd	7	3	8	18
Boston Post Rd (Rt 1) & N. Barry Ave	16	5	8	9
Total	56	31	59	64

Note: Data collected in June 14th and June 16th, 2018.

Appendix 5

Existing Synchro Traffic Analysis Reports

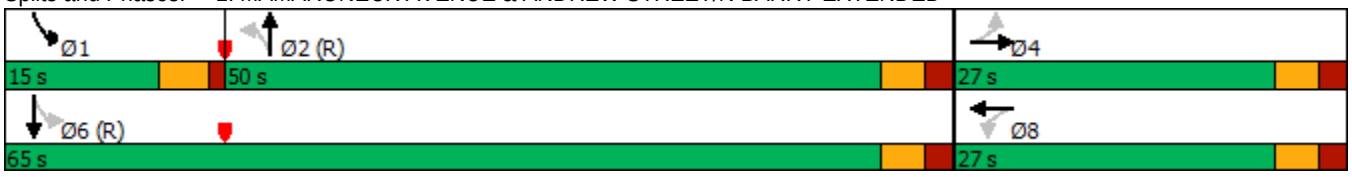


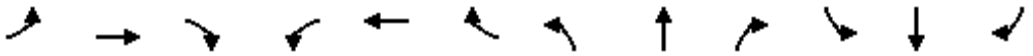
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	5	6	42	0	526	2	1029	25	210	829	14
Future Volume (vph)	19	5	6	42	0	526	2	1029	25	210	829	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00					1.00	1.00		1.00	1.00	
Frt		0.963			0.850			0.995			0.997	
Flt Protected		0.973		0.950			0.950			0.950		
Satd. Flow (prot)	0	1764	0	1604	1463	0	1685	3171	0	1662	3248	0
Flt Permitted		0.304		0.728			0.319			0.140		
Satd. Flow (perm)	0	551	0	1230	1463	0	565	3171	0	245	3248	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			251			5			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	1						7		5	5		7
Peak Hour Factor	0.79	0.63	0.50	0.70	0.90	0.93	0.50	0.95	0.69	0.82	0.95	0.70
Heavy Vehicles (%)	5%	20%	17%	5%	0%	3%	0%	9%	8%	5%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	24	8	12	60	0	566	4	1083	36	256	873	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	60	566	0	4	1119	0	256	893	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.31		0.20	1.05		0.01	0.72		0.80	0.42	
Control Delay		29.6		30.3	73.1		12.5	21.8		31.3	8.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		29.6		30.3	73.1		12.5	21.8		31.3	8.4	
LOS		C		C	E		B	C		C	A	
Approach Delay		29.6			69.0			21.7			13.5	
Approach LOS		C			E			C			B	
Queue Length 50th (ft)		24		45	~384		2	413		93	186	
Queue Length 95th (ft)		47		76	#712		6	538		#224	245	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		140		294	540		276	1553		322	2120	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.31		0.20	1.05		0.01	0.72		0.80	0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 28.7		Intersection LOS: C	
Intersection Capacity Utilization 85.5%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



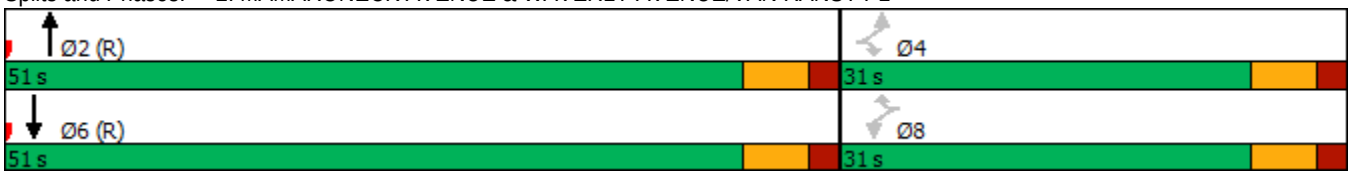


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	0	41	53	0	73	0	715	66	0	856	0
Future Volume (vph)	413	0	41	53	0	73	0	715	66	0	856	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97		0.98	0.99		0.96						
Frt			0.850			0.850		0.986				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1472	0	667	1562	0	1189	0	2832	0	0	3036	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1426	0	655	1553	0	1138	0	2832	0	0	3036	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								21				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	32		6	6		32						
Peak Hour Factor	0.92	0.25	0.79	0.70	0.25	0.70	0.92	0.98	0.87	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	7%	4%	0%	7%	0%	10%	3%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	449	0	52	76	0	104	0	730	76	0	930	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	449	0	52	76	0	104	0	806	0	0	930	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	1.03		0.26	0.16		0.30		0.52			0.56	
Control Delay	83.2		25.9	22.0		24.8		12.8			13.7	
Queue Delay	0.0		0.0	0.0		0.0		2.2			0.0	
Total Delay	83.2		25.9	22.0		24.8		14.9			13.7	
LOS	F		C	C		C		B			B	
Approach Delay		77.3			23.6			14.9			13.7	
Approach LOS		E			C			B			B	
Queue Length 50th (ft)	~402		32	45		65		198			243	
Queue Length 95th (ft)	#685		69	74		99		275			329	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	434		199	473		346		1563			1666	
Starvation Cap Reductn	0		0	0		0		586			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	1.03		0.26	0.16		0.30		0.82			0.56	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 28.0		Intersection LOS: C	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





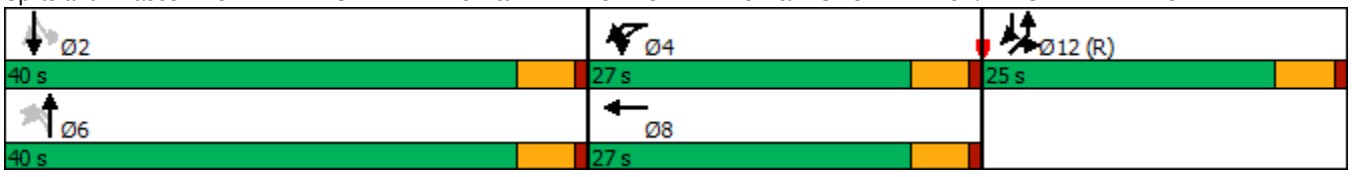
Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	NEL
Lane Configurations												
Traffic Volume (vph)	54	55	15	139	1	2	263	42	150	358	345	318
Future Volume (vph)	54	55	15	139	1	2	263	42	150	358	345	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		0%
Storage Length (ft)		0		0		0		100	40		0	0
Storage Lanes		1		0		0		1	1		1	1
Taper Length (ft)		25				25			25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							0.98					
Frt			0.876				0.979				0.850	
Flt Protected		0.950					0.999		0.950			0.950
Satd. Flow (prot)	0	1514	1182	0	0	0	2895	0	1468	1545	1333	1562
Flt Permitted		0.950					0.950		0.523			0.950
Satd. Flow (perm)	0	1514	1182	0	0	0	2753	0	808	1545	1333	1562
Right Turn on Red				Yes				Yes				
Satd. Flow (RTOR)			151				23					
Link Speed (mph)			30				30			30		30
Link Distance (ft)			890				917			196		603
Travel Time (s)			20.2				20.8			4.5		13.7
Confl. Peds. (#/hr)								87				
Peak Hour Factor	0.79	0.92	0.47	0.92	0.92	0.50	0.90	0.88	0.77	0.88	0.86	0.97
Heavy Vehicles (%)	7%	11%	7%	2%	2%	0%	8%	5%	7%	7%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	0
Parking (#/hr)			20					10				
Adj. Flow (vph)	68	60	32	151	1	4	292	48	195	407	401	328
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	183	0	0	0	345	0	195	407	401	328
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			12				12			12		12
Link Offset(ft)			0				0			0		0
Crosswalk Width(ft)			16				16			16		16
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	15
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	Prot
Protected Phases	4	4	8				6			2	12	12
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	23.0
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	25.0
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	27.2%
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	5.0
Lead/Lag												

Lane Group	NER	NER2
Lane Configurations		
Traffic Volume (vph)	108	20
Future Volume (vph)	108	20
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	12	16
Grade (%)		
Storage Length (ft)	0	
Storage Lanes	1	
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.850	
Flt Protected		
Satd. Flow (prot)	1398	0
Flt Permitted		
Satd. Flow (perm)	1398	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	83	
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		16
Peak Hour Factor	0.90	0.63
Heavy Vehicles (%)	5%	0%
Bus Blockages (#/hr)	0	0
Parking (#/hr)		
Adj. Flow (vph)	120	32
Shared Lane Traffic (%)		
Lane Group Flow (vph)	152	0
Enter Blocked Intersection	No	No
Lane Alignment	Right	Right
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor	1.14	0.97
Turning Speed (mph)	9	9
Turn Type	Prot	
Protected Phases	12	
Permitted Phases		
Minimum Split (s)	23.0	
Total Split (s)	25.0	
Total Split (%)	27.2%	
Maximum Green (s)	20.0	
Yellow Time (s)	4.0	
All-Red Time (s)	1.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.0	
Lead/Lag		

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	NEL
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	60.0	20.0
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.65	0.22
v/c Ratio		0.35	0.46				0.33		0.64	0.69	0.46	0.97
Control Delay		32.5	11.9				19.8		15.1	12.8	4.3	79.1
Queue Delay		0.0	0.0				0.0		2.2	1.6	1.5	0.0
Total Delay		32.5	11.9				19.8		17.3	14.4	5.8	79.1
LOS		C	B				B		B	B	A	E
Approach Delay			20.4				19.8			11.5		60.0
Approach LOS			C				B			B		E
Queue Length 50th (ft)		100	23				108		25	53	45	305
Queue Length 95th (ft)		183	0				165		34	70	58	#574
Internal Link Dist (ft)			810				837			116		523
Turn Bay Length (ft)									40			
Base Capacity (vph)		362	397				1061		307	587	869	339
Starvation Cap Reductn		0	0				0		40	68	289	0
Spillback Cap Reductn		0	5				0		0	0	0	0
Storage Cap Reductn		0	0				0		0	0	0	0
Reduced v/c Ratio		0.35	0.47				0.33		0.73	0.78	0.69	0.97

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 92.6%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

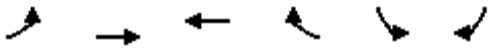
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



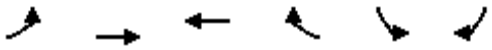


Lane Group	NER	NER2
Lead-Lag Optimize?		
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)	20.0	
Actuated g/C Ratio	0.22	
v/c Ratio	0.41	
Control Delay	18.7	
Queue Delay	0.0	
Total Delay	18.7	
LOS	B	
Approach Delay		
Approach LOS		
Queue Length 50th (ft)	53	
Queue Length 95th (ft)	144	
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)	368	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.41	

Intersection Summary



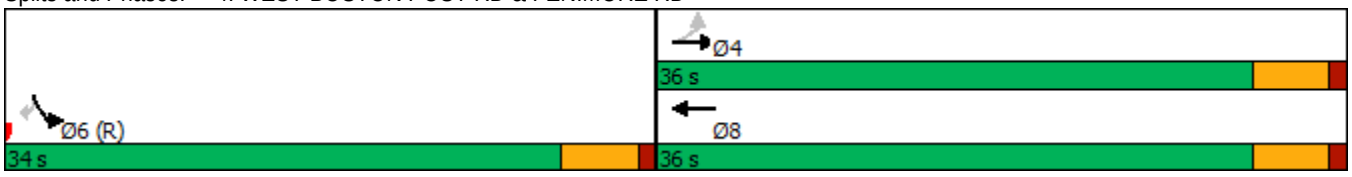
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	661	458	53	124	216
Future Volume (vph)	85	661	458	53	124	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00			
Frt			0.987			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3213	3151	0	1720	1458
Flt Permitted		0.736			0.950	
Satd. Flow (perm)	0	2378	3151	0	1720	1458
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			18			151
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	6			6		
Peak Hour Factor	0.85	0.93	0.70	0.88	0.84	0.72
Heavy Vehicles (%)	6%	4%	5%	8%	4%	6%
Parking (#/hr)				6		
Adj. Flow (vph)	100	711	654	60	148	300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	811	714	0	148	300
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						

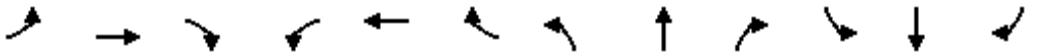


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		0.77	0.51		0.21	0.43
Control Delay		22.7	15.2		14.2	9.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		22.7	15.2		14.2	9.3
LOS		C	B		B	A
Approach Delay		22.7	15.2		10.9	
Approach LOS		C	B		B	
Queue Length 50th (ft)		237	173		63	65
Queue Length 95th (ft)		352	174		111	97
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1053	1405		712	692
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.77	0.51		0.21	0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

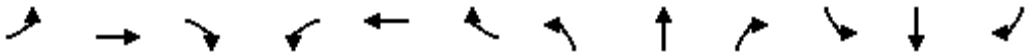
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	487	16	8	352	45	6	6	6	64	10	142
Future Volume (vph)	172	487	16	8	352	45	6	6	6	64	10	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.983				0.850			0.850
Flt Protected	0.950			0.950				0.971			0.959	
Satd. Flow (prot)	1562	3056	0	1516	2848	0	0	1660	1405	0	1638	1177
Flt Permitted	0.422			0.353				0.865			0.748	
Satd. Flow (perm)	694	3056	0	563	2848	0	0	1479	1405	0	1278	1177
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		3										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.84	0.88	0.80	0.29	0.85	0.87	0.50	0.75	0.30	0.73	0.63	0.66
Heavy Vehicles (%)	4%	6%	0%	0%	5%	2%	0%	0%	0%	8%	0%	5%
Parking (#/hr)			10									10
Adj. Flow (vph)	205	553	20	28	414	52	12	8	20	88	16	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	573	0	28	466	0	0	20	20	0	104	215
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.55	0.42		0.55	0.42			0.25	0.25		0.25	0.42
v/c Ratio	0.42	0.45		0.07	0.39			0.05	0.06		0.32	0.44
Control Delay	21.5	28.0		15.4	27.3			39.5	39.7		43.2	31.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	21.5	28.0		15.4	27.3			39.5	39.7		43.2	31.0
LOS	C	C		B	C			D	D		D	C
Approach Delay		26.3			26.7			39.6			35.0	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	89	221		11	175			17	17		93	158
Queue Length 95th (ft)	222	409		14	320			50	19		147	246
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	488	1284		427	1195			372	353		321	494
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.42	0.45		0.07	0.39			0.05	0.06		0.32	0.44

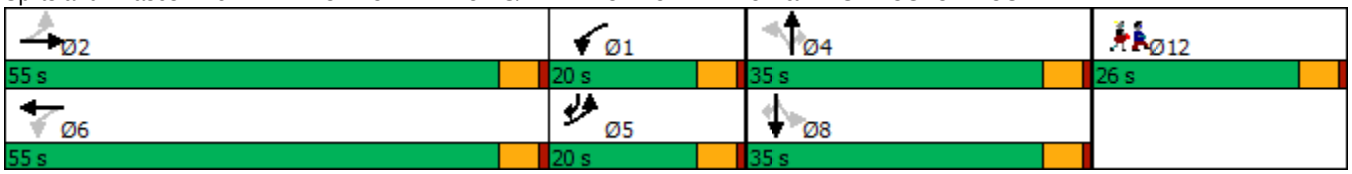
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 28.4		Intersection LOS: C	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	

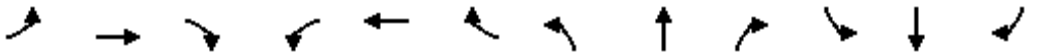
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

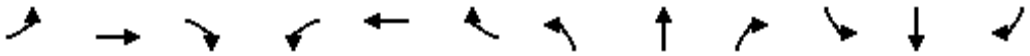
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	546	47	9	462	111	68	65	17	146	54	65
Future Volume (vph)	77	546	47	9	462	111	68	65	17	146	54	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.971			0.952			0.961	
Flt Protected		0.994			0.999		0.950				0.975	
Satd. Flow (prot)	0	3472	0	0	3563	0	1636	1688	0	0	1799	0
Flt Permitted		0.750			0.810		0.531				0.777	
Satd. Flow (perm)	0	2620	0	0	2889	0	914	1688	0	0	1434	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.80	0.91	0.69	0.56	0.85	0.82	0.77	0.77	0.43	0.94	0.84	0.74
Heavy Vehicles (%)	4%	6%	2%	0%	2%	0%	3%	0%	0%	3%	6%	6%
Adj. Flow (vph)	96	600	68	16	544	135	88	84	40	155	64	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	764	0	0	695	0	88	124	0	0	307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.6			31.8		36.6	36.6			24.7	
Actuated g/C Ratio		0.34			0.32		0.37	0.37			0.25	
v/c Ratio		0.79			0.71		0.22	0.20			0.86	
Control Delay		38.0			34.2		24.7	24.3			62.0	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		38.0			34.2		24.7	24.3			62.0	
LOS		D			C		C	C			E	
Approach Delay		38.0			34.2			24.4			62.0	
Approach LOS		D			C			C			E	
Queue Length 50th (ft)		337			319		56	80			304	
Queue Length 95th (ft)		542			446		120	160			#645	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1172			1256		414	705			359	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.65			0.55		0.21	0.18			0.86	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 98.6			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

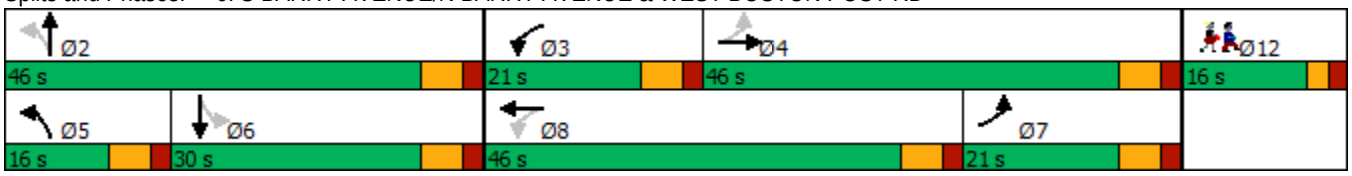
Intersection Summary

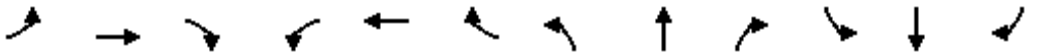
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & WEST BOSTON POST RD



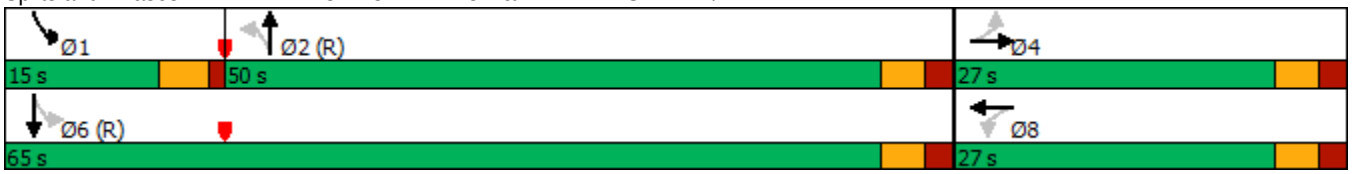


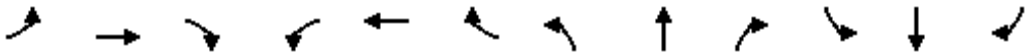
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	3	4	40	2	304	4	894	44	160	719	15
Future Volume (vph)	17	3	4	40	2	304	4	894	44	160	719	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Frt		0.973			0.854			0.991			0.995	
Flt Protected		0.971		0.950			0.950			0.950		
Satd. Flow (prot)	0	1837	0	1604	1447	0	1685	3218	0	1711	3325	0
Flt Permitted		0.630		0.731			0.352			0.177		
Satd. Flow (perm)	0	1190	0	1232	1447	0	622	3218	0	319	3325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			274			10			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	4		2	2		4	9		2	2		9
Peak Hour Factor	0.71	0.38	0.50	0.77	0.25	0.94	0.50	0.95	0.73	0.82	0.94	0.54
Heavy Vehicles (%)	12%	0%	0%	5%	0%	3%	0%	7%	5%	2%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	24	8	8	52	8	323	8	941	60	195	765	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	52	331	0	8	1001	0	195	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.14		0.18	0.60		0.03	0.63		0.53	0.37	
Control Delay		24.8		29.8	11.7		12.5	19.5		11.6	7.8	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8		29.8	11.7		12.5	19.5		11.6	7.8	
LOS		C		C	B		B	B		B	A	
Approach Delay		24.8			14.2			19.4			8.5	
Approach LOS		C			B			B			A	
Queue Length 50th (ft)		23		39	42		4	344		62	156	
Queue Length 95th (ft)		23		75	0		9	450		94	207	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		290		294	554		304	1579		368	2171	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.18	0.60		0.03	0.63		0.53	0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





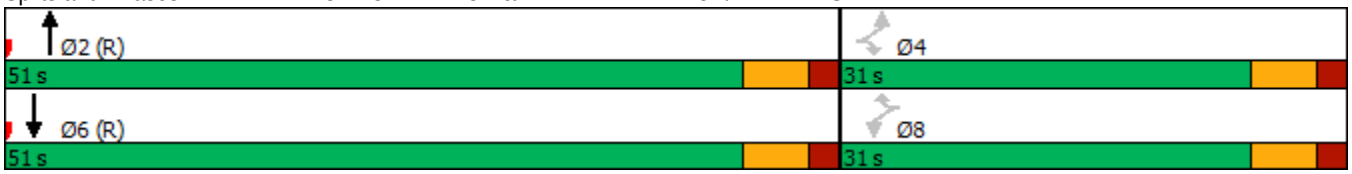
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	292	0	36	42	0	41	0	662	34	0	576	0
Future Volume (vph)	292	0	36	42	0	41	0	662	34	0	576	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.96		0.98	0.99		0.95		1.00				
Frt			0.850			0.850		0.991				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	714	1624	0	1247	0	2911	0	0	3094	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1441	0	701	1613	0	1183	0	2911	0	0	3094	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	41		7	7		41			37			
Peak Hour Factor	0.87	0.25	0.75	0.53	0.25	0.79	0.92	0.92	0.77	0.92	0.93	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	2%	0%	7%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	336	0	48	79	0	52	0	720	44	0	619	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	0	48	79	0	52	0	764	0	0	619	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	0.77		0.23	0.16		0.14		0.48			0.36	
Control Delay	39.4		24.8	22.0		22.1		12.3			11.2	
Queue Delay	0.0		0.0	0.0		0.0		1.8			0.0	
Total Delay	39.4		24.8	22.0		22.1		14.1			11.2	
LOS	D		C	C		C		B			B	
Approach Delay		37.6			22.1			14.1			11.2	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	248		29	47		31		184			140	
Queue Length 95th (ft)	#427		61	56		64		255			196	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	439		213	491		360		1602			1697	
Starvation Cap Reductn	0		0	0		0		636			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.77		0.23	0.16		0.14		0.79			0.36	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





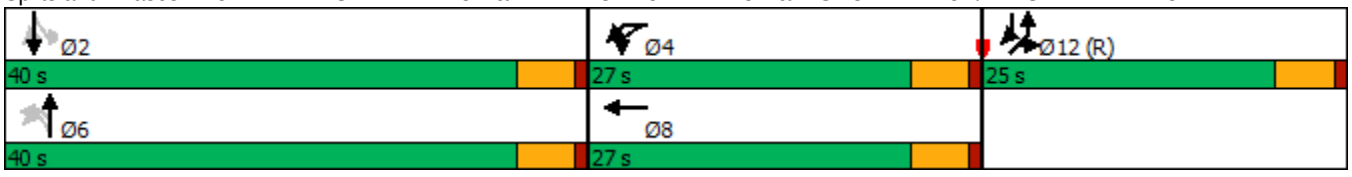
Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	74	68	10	110	21	4	301	79	85	303	202	7
Future Volume (vph)	74	68	10	110	21	4	301	79	85	303	202	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92	0.97				0.97		0.96		0.91	
Frt			0.863				0.968				0.850	
Flt Protected		0.950					0.996		0.950			
Satd. Flow (prot)	0	1565	1109	0	0	0	2999	0	1496	1589	1373	0
Flt Permitted		0.950					0.904		0.423			
Satd. Flow (perm)	0	1445	1109	0	0	0	2707	0	641	1589	1245	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			124				42				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	35			18	39	51		50	50		39	51
Peak Hour Factor	0.88	0.71	0.83	0.89	0.75	0.50	0.89	0.79	0.82	0.88	0.89	0.58
Heavy Vehicles (%)	8%	3%	0%	5%	10%	25%	1%	3%	5%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	84	96	12	124	28	8	338	100	104	344	227	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	136	0	0	0	474	0	104	344	239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	247	104	54
Future Volume (vph)	247	104	54
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1562	1408	0
Flt Permitted	0.950		
Satd. Flow (perm)	1534	1408	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	18		35
Peak Hour Factor	0.87	0.87	0.71
Heavy Vehicles (%)	4%	4%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	284	120	76
Shared Lane Traffic (%)			
Lane Group Flow (vph)	284	196	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.48	0.38				0.45		0.43	0.57	0.31	
Control Delay		35.2	10.2				20.9		14.8	13.7	4.5	
Queue Delay		0.0	0.0				0.0		0.9	0.2	0.6	
Total Delay		35.2	10.2				20.9		15.7	13.8	5.1	
LOS		D	B				C		B	B	A	
Approach Delay			24.4				20.9			11.1		
Approach LOS			C				C			B		
Queue Length 50th (ft)		145	9				154		23	77	38	
Queue Length 95th (ft)		188	68				222		37	103	61	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		374	359				1055		243	604	781	
Starvation Cap Reductn		0	0				0		35	23	268	
Spillback Cap Reductn		0	0				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.48	0.38				0.45		0.50	0.59	0.47	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

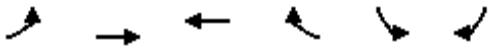
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



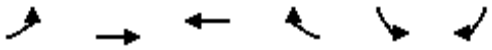


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.84	0.53	
Control Delay	57.3	23.9	
Queue Delay	0.0	0.0	
Total Delay	57.3	23.9	
LOS	E	C	
Approach Delay	43.6		
Approach LOS	D		
Queue Length 50th (ft)	255	90	
Queue Length 95th (ft)	#447	191	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	339	371	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.84	0.53	

Intersection Summary



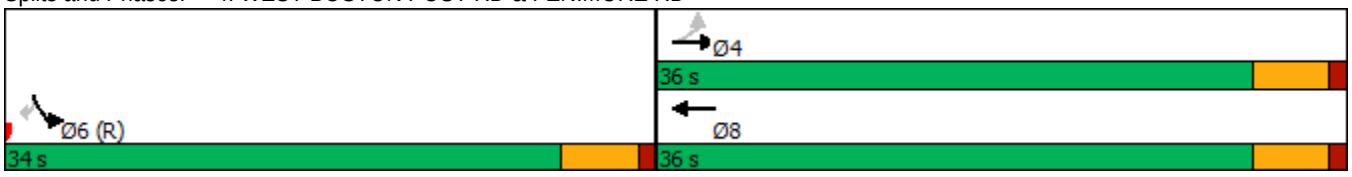
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	89	598	506	67	122	187
Future Volume (vph)	89	598	506	67	122	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00		0.99	0.98
Frt			0.983			0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	3235	3139	0	1771	1515
Flt Permitted		0.719			0.950	
Satd. Flow (perm)	0	2341	3139	0	1756	1484
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			25			170
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	8			8	8	8
Peak Hour Factor	0.82	0.91	0.83	0.88	0.73	0.90
Heavy Vehicles (%)	6%	3%	5%	6%	1%	2%
Parking (#/hr)				6		
Adj. Flow (vph)	109	657	610	76	167	208
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	766	686	0	167	208
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						

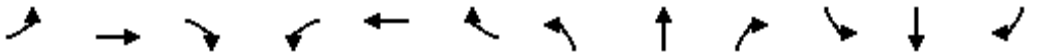


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		0.74	0.49		0.23	0.29
Control Delay		21.5	14.8		14.3	4.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		21.5	14.8		14.3	4.9
LOS		C	B		B	A
Approach Delay		21.5	14.8		9.1	
Approach LOS		C	B		A	
Queue Length 50th (ft)		220	162		72	15
Queue Length 95th (ft)		327	208		105	75
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1036	1404		733	714
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.74	0.49		0.23	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 50			
Control Type: Pretimed			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

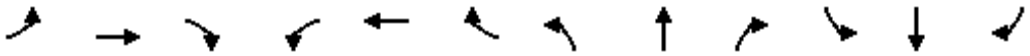
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	448	38	21	427	76	27	37	30	101	38	127
Future Volume (vph)	169	448	38	21	427	76	27	37	30	101	38	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.973				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.967	
Satd. Flow (prot)	1608	3119	0	1516	2830	0	0	1667	1364	0	1712	1199
Flt Permitted	0.337			0.364				0.719			0.705	
Satd. Flow (perm)	571	3119	0	581	2830	0	0	1229	1364	0	1248	1199
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.73	0.89	0.73	0.66	0.87	0.70	0.48	0.71	0.54	0.81	0.68	0.88
Heavy Vehicles (%)	1%	3%	0%	0%	5%	1%	0%	0%	3%	3%	3%	3%
Parking (#/hr)			10									10
Adj. Flow (vph)	232	503	52	32	491	109	56	52	56	125	56	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	232	555	0	32	600	0	0	108	56	0	181	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.55	0.42		0.55	0.42			0.25	0.25		0.25	0.42
v/c Ratio	0.52	0.42		0.07	0.51			0.35	0.16		0.58	0.29
Control Delay	27.5	27.2		15.3	29.5			43.9	40.6		50.6	27.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	27.5	27.2		15.3	29.5			43.9	40.6		50.6	27.8
LOS	C	C		B	C			D	D		D	C
Approach Delay		27.3			28.8			42.8			40.5	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	102	209		12	240			97	48		174	98
Queue Length 95th (ft)	211	394		37	436			174	75		266	234
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	442	1314		434	1188			309	343		314	503
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.52	0.42		0.07	0.51			0.35	0.16		0.58	0.29

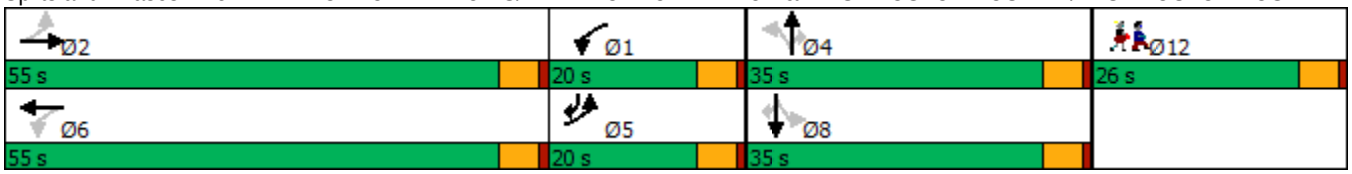
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 31.4		Intersection LOS: C	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	

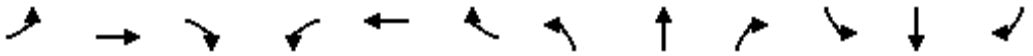
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	16
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

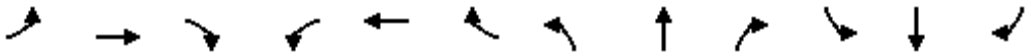
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	443	64	15	460	93	64	32	11	117	36	90
Future Volume (vph)	79	443	64	15	460	93	64	32	11	117	36	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.974			0.960			0.945	
Flt Protected		0.993			0.998		0.950				0.979	
Satd. Flow (prot)	0	3523	0	0	3515	0	1589	1624	0	0	1811	0
Flt Permitted		0.754			0.765		0.490				0.832	
Satd. Flow (perm)	0	2675	0	0	2695	0	820	1624	0	0	1539	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.86	0.89	0.76	0.63	0.90	0.83	0.76	0.73	0.69	0.89	0.75	0.73
Heavy Vehicles (%)	4%	3%	3%	7%	3%	3%	6%	0%	18%	3%	0%	3%
Adj. Flow (vph)	92	498	84	24	511	112	84	44	16	131	48	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	674	0	0	647	0	84	60	0	0	302	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.0%	35.1%		16.0%	35.1%		12.2%	35.1%		22.9%	22.9%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		30.2			30.2		36.7	36.7			24.7	
Actuated g/C Ratio		0.32			0.32		0.38	0.38			0.26	
v/c Ratio		0.74			0.71		0.22	0.10			0.76	
Control Delay		36.8			34.0		23.5	22.3			49.8	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		36.8			34.0		23.5	22.3			49.8	
LOS		D			C		C	C			D	
Approach Delay		36.8			34.0			23.0			49.8	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		287			273		48	34			270	
Queue Length 95th (ft)		469			456		117	85			#510	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1219			1225		398	701			399	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.55			0.53		0.21	0.09			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 131			
Actuated Cycle Length: 95.4			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 36.9		Intersection LOS: D	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	14%
Maximum Green (s)	12.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

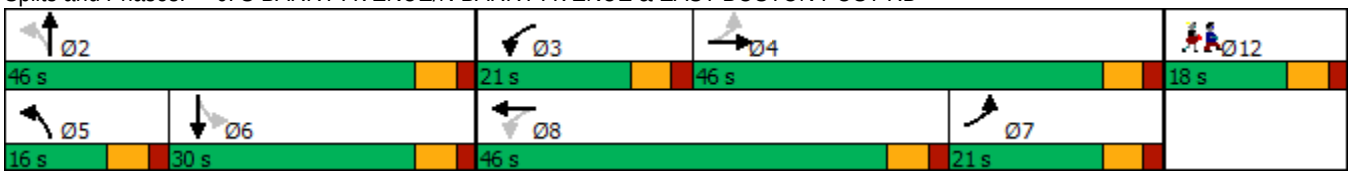
Intersection Summary

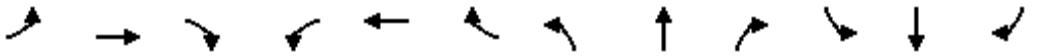
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD





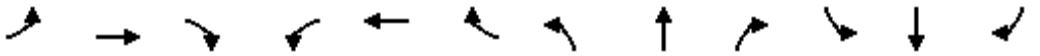
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	10	7	47	4	379	5	1034	45	228	1168	24
Future Volume (vph)	22	10	7	47	4	379	5	1034	45	228	1168	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		0.99			1.00	1.00		1.00	1.00	
Frt		0.964			0.853			0.992			0.996	
Flt Protected		0.977		0.950			0.950			0.950		
Satd. Flow (prot)	0	1959	0	1589	1498	0	1685	3345	0	1678	3433	0
Flt Permitted		0.441		0.783			0.218			0.131		
Satd. Flow (perm)	0	884	0	1302	1498	0	386	3345	0	231	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			250			8			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			5	5			15		5	5		15
Peak Hour Factor	0.79	0.63	0.44	0.73	0.50	0.92	0.63	0.95	0.75	0.76	0.94	0.75
Heavy Vehicles (%)	0%	0%	0%	6%	0%	1%	0%	3%	2%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	28	16	16	64	8	412	8	1088	60	300	1243	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	64	420	0	8	1148	0	300	1275	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.27		0.21	0.77		0.04	0.70		0.95	0.57	
Control Delay		26.0		30.2	23.5		13.2	21.0		56.8	10.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		26.0		30.2	23.5		13.2	21.0		56.8	10.0	
LOS		C		C	C		B	C		E	B	
Approach Delay		26.0			24.4			20.9			18.9	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		33		48	145		4	415		150	307	
Queue Length 95th (ft)		56		83	49		11	536		#274	392	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		223		311	548		188	1640		317	2241	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.27		0.21	0.77		0.04	0.70		0.95	0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





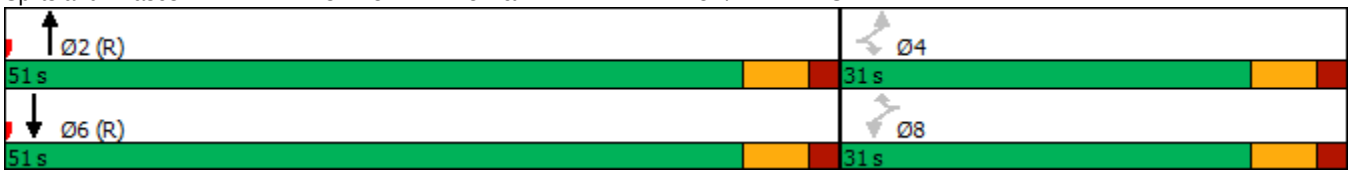
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	398	0	50	38	0	61	0	768	41	0	783	0
Future Volume (vph)	398	0	50	38	0	61	0	768	41	0	783	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95		0.99	1.00		0.94		1.00				
Frt			0.850			0.850		0.989				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1577	0	1272	0	2981	0	0	3124	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1432	0	691	1576	0	1199	0	2981	0	0	3124	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								15				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	47		1	1		47			51			
Peak Hour Factor	0.94	0.25	0.83	0.68	0.25	0.80	0.92	0.88	0.60	0.92	0.98	0.92
Heavy Vehicles (%)	1%	0%	2%	3%	0%	0%	0%	4%	0%	0%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	423	0	60	56	0	76	0	873	68	0	799	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	423	0	60	56	0	76	0	941	0	0	799	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	23.0		23.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	0.97		0.29	0.12		0.21		0.57			0.47	
Control Delay	67.1		26.3	21.4		23.1		13.7			12.3	
Queue Delay	0.0		0.0	0.0		0.0		4.5			0.0	
Total Delay	67.1		26.3	21.4		23.1		18.2			12.3	
LOS	E		C	C		C		B			B	
Approach Delay		62.0			22.4			18.2			12.3	
Approach LOS		E			C			B			B	
Queue Length 50th (ft)	340		37	33		46		244			195	
Queue Length 95th (ft)	#631		82	57		88		321			265	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	436		210	480		365		1642			1714	
Starvation Cap Reductn	0		0	0		0		612			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.97		0.29	0.12		0.21		0.91			0.47	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	67	133	16	162	16	1	307	49	146	329	283	6
Future Volume (vph)	67	133	16	162	16	1	307	49	146	329	283	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96				0.98		0.95		0.88	
Frt			0.871				0.978				0.850	
Flt Protected		0.950					0.997		0.950			
Satd. Flow (prot)	0	1606	1121	0	0	0	3044	0	1510	1637	1399	0
Flt Permitted		0.950					0.913		0.425			
Satd. Flow (perm)	0	1606	1121	0	0	0	2771	0	639	1637	1236	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			164				24				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)				28	48	70		72	72		48	70
Peak Hour Factor	0.92	0.83	0.57	0.94	0.57	0.50	0.82	0.72	0.83	0.89	0.86	0.38
Heavy Vehicles (%)	2%	3%	0%	4%	0%	0%	2%	4%	4%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	73	160	28	172	28	2	374	68	176	370	329	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	233	200	0	0	0	472	0	176	370	345	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases		4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

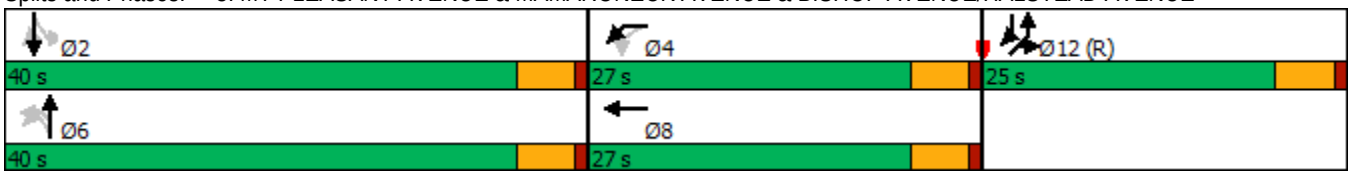


Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	287	136	48
Future Volume (vph)	287	136	48
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1415	0
Flt Permitted	0.950		
Satd. Flow (perm)	1570	1415	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	28		40
Peak Hour Factor	0.82	0.92	0.80
Heavy Vehicles (%)	1%	3%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	350	148	60
Shared Lane Traffic (%)			
Lane Group Flow (vph)	350	208	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.61	0.51				0.44		0.72	0.59	0.44	
Control Delay		38.9	12.8				21.7		26.7	12.0	5.3	
Queue Delay		0.0	0.0				0.0		0.2	1.0	1.0	
Total Delay		38.9	12.8				21.7		26.9	13.0	6.3	
LOS		D	B				C		C	B	A	
Approach Delay			26.8				21.7			13.1		
Approach LOS			C				C			B		
Queue Length 50th (ft)		194	27				160		34	72	50	
Queue Length 95th (ft)		289	24				204		#273	97	70	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		384	392				1069		243	622	784	
Starvation Cap Reductn		0	0				0		2	90	222	
Spillback Cap Reductn		0	0				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.61	0.51				0.44		0.73	0.70	0.61	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 96.1%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

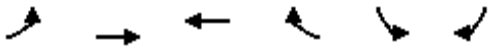
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



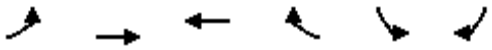


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	1.00	0.56	
Control Delay	87.0	25.5	
Queue Delay	0.0	0.0	
Total Delay	87.0	25.5	
LOS	F	C	
Approach Delay	64.1		
Approach LOS	E		
Queue Length 50th (ft)	~329	101	
Queue Length 95th (ft)	#529	218	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	349	372	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.00	0.56	

Intersection Summary



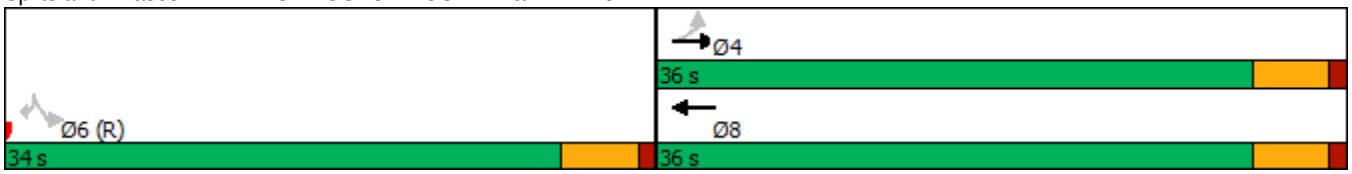
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	76	732	721	140	217	190
Future Volume (vph)	76	732	721	140	217	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.98	0.98
Frt			0.973			0.850
Flt Protected		0.995			0.950	
Satd. Flow (prot)	0	3277	3201	0	1788	1530
Flt Permitted		0.662			0.950	
Satd. Flow (perm)	0	2179	3201	0	1758	1505
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			48			88
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	10			10	16	4
Peak Hour Factor	0.83	0.92	0.88	0.78	0.90	0.78
Heavy Vehicles (%)	5%	2%	1%	5%	0%	1%
Parking (#/hr)				6		
Adj. Flow (vph)	92	796	819	179	241	244
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	888	998	0	241	244
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Perm	Perm
Protected Phases		4	8			
Permitted Phases	4				6	6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		0.92	0.69		0.33	0.36
Control Delay		35.6	17.9		15.5	10.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		35.6	17.9		15.5	10.6
LOS		D	B		B	B
Approach Delay		35.6	17.9		13.1	
Approach LOS		D	B		B	
Queue Length 50th (ft)		289	264		109	68
Queue Length 95th (ft)		#489	356		190	116
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		964	1444		728	675
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.92	0.69		0.33	0.36

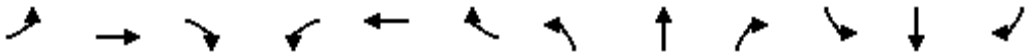
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	585	82	36	577	96	92	31	54	105	33	173
Future Volume (vph)	158	585	82	36	577	96	92	31	54	105	33	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	12	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.977				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.964	
Satd. Flow (prot)	1593	3119	0	1516	2913	0	0	1636	1378	0	1732	1211
Flt Permitted	0.237			0.263				0.510			0.589	
Satd. Flow (perm)	397	3119	0	420	2913	0	0	866	1378	0	1058	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		18										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.90	0.97	0.71	0.82	0.89	0.80	0.80	0.80	0.80	0.71	0.69	0.71
Heavy Vehicles (%)	2%	2%	0%	0%	2%	0%	1%	0%	2%	2%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	176	603	115	44	648	120	115	39	68	148	48	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	718	0	44	768	0	0	154	68	0	196	244
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.14	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.52	0.40		0.52	0.40			0.24	0.24		0.24	0.40
v/c Ratio	0.50	0.57		0.13	0.66			0.74	0.20		0.77	0.50
Control Delay	33.5	32.2		18.8	35.7			68.5	43.6		67.6	35.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	33.5	32.2		18.8	35.7			68.5	43.6		67.6	35.2
LOS	C	C		B	D			E	D		E	D
Approach Delay		32.5			34.8			60.9			49.6	
Approach LOS		C			C			E			D	
Queue Length 50th (ft)	132	424		30	487			208	80		267	272
Queue Length 95th (ft)	206	535		58	603			#327	133		304	305
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	351	1266		351	1172			209	332		255	487
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.50	0.57		0.13	0.66			0.74	0.20		0.77	0.50

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

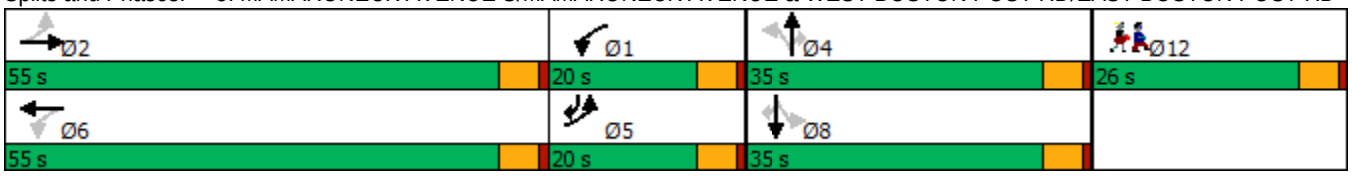
Intersection Summary

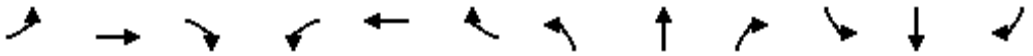
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

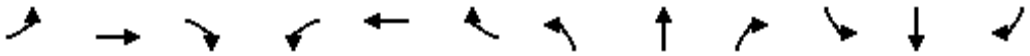
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	563	71	12	646	98	111	74	30	115	43	98
Future Volume (vph)	117	563	71	12	646	98	111	74	30	115	43	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.981			0.941			0.952	
Flt Protected		0.992			0.999		0.950				0.978	
Satd. Flow (prot)	0	3578	0	0	3606	0	1668	1611	0	0	1887	0
Flt Permitted		0.592			0.828		0.484				0.783	
Satd. Flow (perm)	0	2135	0	0	2989	0	850	1611	0	0	1511	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.80	0.90	0.80	0.80	0.83	0.84	0.82	0.80	0.50	0.82	0.72	0.88
Heavy Vehicles (%)	0%	2%	3%	0%	1%	4%	1%	4%	3%	0%	0%	0%
Adj. Flow (vph)	146	626	89	15	778	117	135	93	60	140	60	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	861	0	0	910	0	135	153	0	0	311	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.92	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		40.1			38.4		39.9	39.9			24.1	
Actuated g/C Ratio		0.37			0.36		0.37	0.37			0.22	
v/c Ratio		0.95			0.82		0.35	0.26			0.92	
Control Delay		55.3			38.9		27.4	26.3			75.7	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		55.3			38.9		27.4	26.3			75.7	
LOS		E			D		C	C			E	
Approach Delay		55.3			38.9			26.8			75.7	
Approach LOS		E			D			C			E	
Queue Length 50th (ft)		391			420		96	111			326	
Queue Length 95th (ft)		#845			590		185	202			#489	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		910			1151		389	598			337	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.95			0.79		0.35	0.26			0.92	

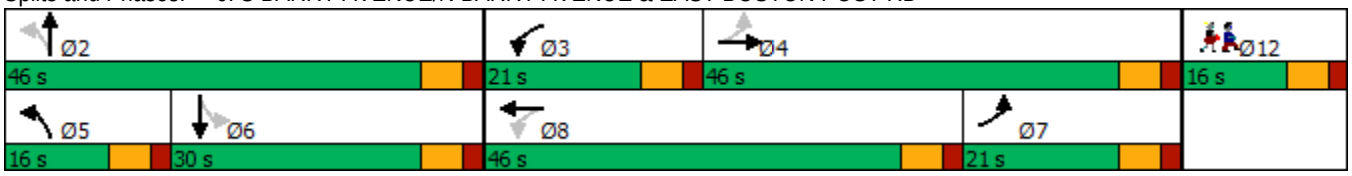
Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 107.9			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 48.2		Intersection LOS: D	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

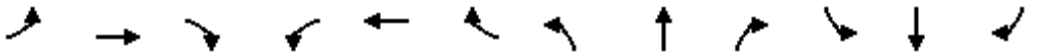
Lane Group	Ø12
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

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

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



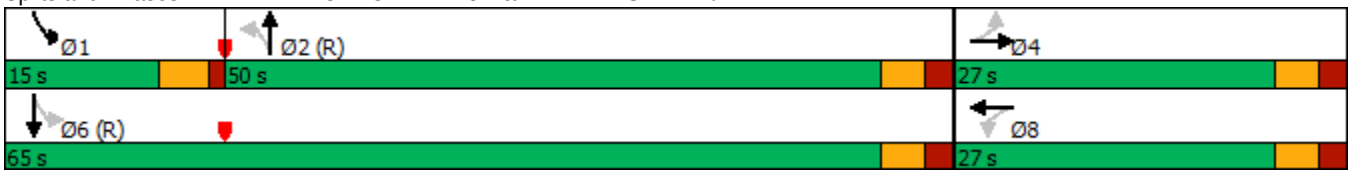


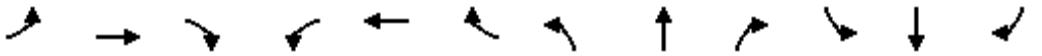
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	2	4	40	2	358	5	895	44	176	779	14
Future Volume (vph)	18	2	4	40	2	358	5	895	44	176	779	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00			1.00	1.00		1.00	1.00	
Frt		0.970			0.852			0.992			0.996	
Flt Protected		0.968		0.950			0.950			0.950		
Satd. Flow (prot)	0	1786	0	1560	1496	0	1685	3376	0	1728	3394	0
Flt Permitted		0.539		0.734			0.317			0.174		
Satd. Flow (perm)	0	994	0	1202	1496	0	561	3376	0	316	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			272			9			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			2	2			6		2	2		6
Peak Hour Factor	0.75	0.50	0.50	0.83	0.50	0.97	0.63	0.94	0.79	0.80	0.89	0.58
Heavy Vehicles (%)	6%	0%	25%	8%	0%	1%	0%	2%	2%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	24	4	8	48	4	369	8	952	56	220	875	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	48	373	0	8	1008	0	220	899	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.15		0.17	0.66		0.03	0.61		0.60	0.41	
Control Delay		24.8		29.7	15.4		12.8	18.9		14.1	8.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8		29.7	15.4		12.8	18.9		14.1	8.2	
LOS		C		C	B		B	B		B	A	
Approach Delay		24.8			17.1			18.8			9.3	
Approach LOS		C			B			B			A	
Queue Length 50th (ft)		21		36	77		4	341		71	184	
Queue Length 95th (ft)		30		77	10		11	443		102	237	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		243		287	564		274	1655		368	2215	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.15		0.17	0.66		0.03	0.61		0.60	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 70.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





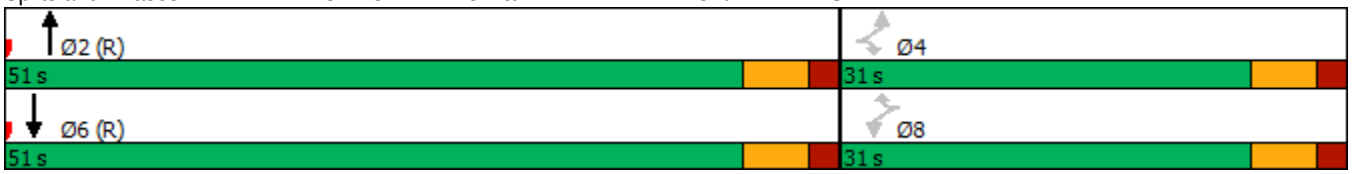
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	0	47	38	0	34	0	653	0	0	700	0
Future Volume (vph)	332	0	47	38	0	34	0	653	0	0	700	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95		0.98	0.99		0.94						
Frt			0.850			0.850						
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1547	0	1272	0	3049	0	0	3185	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1423	0	684	1530	0	1192	0	3049	0	0	3185	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	53		11	11		53						
Peak Hour Factor	0.97	0.25	0.73	0.59	0.25	0.65	0.92	0.91	0.60	0.92	0.89	0.92
Heavy Vehicles (%)	1%	0%	2%	5%	0%	0%	0%	3%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	342	0	64	64	0	52	0	718	0	0	787	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	0	64	64	0	52	0	718	0	0	787	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	0.79		0.31	0.14		0.14		0.43			0.45	
Control Delay	41.4		26.9	21.7		22.1		11.9			12.1	
Queue Delay	0.0		0.0	0.0		0.0		1.4			0.0	
Total Delay	41.4		26.9	21.7		22.1		13.4			12.1	
LOS	D		C	C		C		B			B	
Approach Delay		39.1			21.9			13.4			12.1	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	255		40	38		31		170			190	
Queue Length 95th (ft)	#474		74	54		52		235			254	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	433		208	466		363		1673			1747	
Starvation Cap Reductn	0		0	0		0		717			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.79		0.31	0.14		0.14		0.75			0.45	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





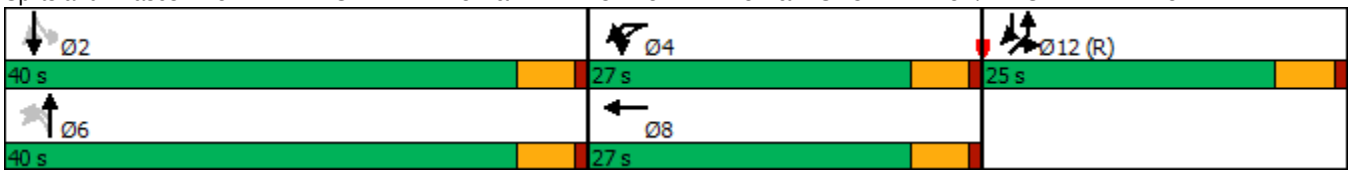
Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	68	108	8	116	19	1	284	56	108	310	223	8
Future Volume (vph)	68	108	8	116	19	1	284	56	108	310	223	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98				0.97		0.95		0.91	
Frt			0.865				0.973				0.850	
Flt Protected		0.950					0.996		0.950			
Satd. Flow (prot)	0	1607	1121	0	0	0	3037	0	1540	1637	1386	0
Flt Permitted		0.950					0.893		0.444			
Satd. Flow (perm)	0	1491	1121	0	0	0	2706	0	683	1637	1260	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			149				33				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	33			12	34	53		66	66		34	53
Peak Hour Factor	0.85	0.87	0.50	0.78	0.53	0.25	0.87	0.70	0.71	0.89	0.91	0.67
Heavy Vehicles (%)	2%	3%	0%	5%	0%	0%	2%	0%	2%	1%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	80	124	16	149	36	4	326	80	152	348	245	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	165	0	0	0	446	0	152	348	257	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	245	123	31
Future Volume (vph)	245	123	31
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.99		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1454	0
Flt Permitted	0.950		
Satd. Flow (perm)	1590	1454	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	12		33
Peak Hour Factor	0.84	0.90	0.70
Heavy Vehicles (%)	1%	0%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	292	137	44
Shared Lane Traffic (%)			
Lane Group Flow (vph)	292	181	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.53	0.43				0.43		0.59	0.56	0.33	
Control Delay		36.4	10.5				20.9		19.5	13.0	3.9	
Queue Delay		0.0	0.0				0.0		0.6	0.5	0.7	
Total Delay		36.4	10.5				20.9		20.1	13.5	4.6	
LOS		D	B				C		C	B	A	
Approach Delay			24.8				20.9			11.8		
Approach LOS			C				C			B		
Queue Length 50th (ft)		166	12				146		26	61	31	
Queue Length 95th (ft)		268	0				204		34	82	47	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		384	381				1049		259	622	790	
Starvation Cap Reductn		0	0				0		13	62	273	
Spillback Cap Reductn		0	0				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.53	0.43				0.43		0.62	0.62	0.50	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 23.4		Intersection LOS: C	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

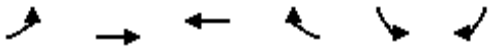
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



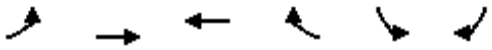


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.84	0.48	
Control Delay	56.6	21.7	
Queue Delay	0.0	0.0	
Total Delay	56.6	21.7	
LOS	E	C	
Approach Delay	43.2		
Approach LOS	D		
Queue Length 50th (ft)	262	77	
Queue Length 95th (ft)	#427	180	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	349	381	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.84	0.48	

Intersection Summary



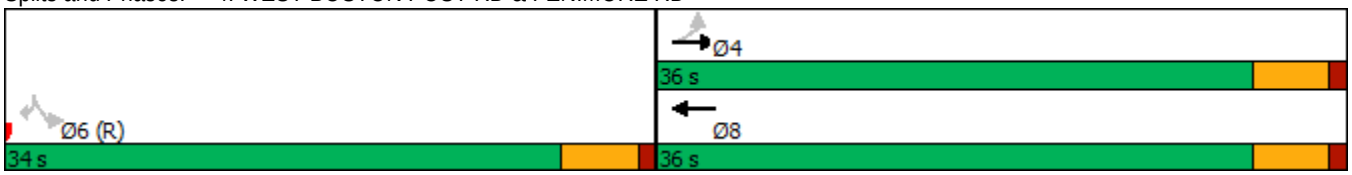
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	112	720	658	96	170	253
Future Volume (vph)	112	720	658	96	170	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.99	0.99
Frt			0.949			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3522	3123	0	1771	1530
Flt Permitted		0.573			0.950	
Satd. Flow (perm)	0	2030	3123	0	1752	1510
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			167			109
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	11			11	10	1
Peak Hour Factor	0.97	0.88	0.88	0.25	0.90	0.84
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Parking (#/hr)				6		
Adj. Flow (vph)	115	818	748	384	189	301
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	933	1132	0	189	301
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Perm	Perm
Protected Phases		4	8			
Permitted Phases	4				6	6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						

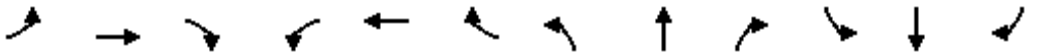


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		1.04	0.77		0.26	0.44
Control Delay		62.5	18.1		14.7	11.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		62.5	18.1		14.7	11.4
LOS		E	B		B	B
Approach Delay		62.5	18.1		12.7	
Approach LOS		E	B		B	
Queue Length 50th (ft)		~373	283		82	86
Queue Length 95th (ft)		#532	390		150	161
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		899	1476		725	689
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.04	0.77		0.26	0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 33.3		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

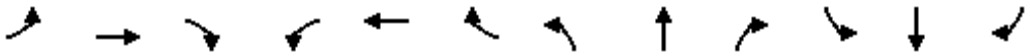
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	558	95	23	483	95	104	36	49	95	56	142
Future Volume (vph)	155	558	95	23	483	95	104	36	49	95	56	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967			0.973				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.973	
Satd. Flow (prot)	1593	3093	0	1516	2906	0	0	1648	1405	0	1765	1211
Flt Permitted	0.289			0.174				0.526			0.601	
Satd. Flow (perm)	485	3093	0	278	2906	0	0	899	1405	0	1090	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		30										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.95	0.79	0.48	0.44	0.88	0.79	0.80	0.80	0.80	0.91	0.67	0.89
Heavy Vehicles (%)	2%	2%	0%	0%	1%	4%	0%	0%	0%	1%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	163	706	198	52	549	120	130	45	61	104	84	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	904	0	52	669	0	0	175	61	0	188	160
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.52	0.40		0.52	0.40			0.24	0.24		0.24	0.40
v/c Ratio	0.42	0.72		0.18	0.57			0.81	0.18		0.71	0.33
Control Delay	27.2	36.2		22.3	33.4			75.0	43.3		62.7	31.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	27.2	36.2		22.3	33.4			75.0	43.3		62.7	31.0
LOS	C	D		C	C			E	D		E	C
Approach Delay		34.8			32.6			66.8			48.1	
Approach LOS		C			C			E			D	
Queue Length 50th (ft)	121	576		36	406			242	71		252	164
Queue Length 95th (ft)	192	586		35	500			#384	122		279	264
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	387	1262		295	1169			217	339		263	487
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.42	0.72		0.18	0.57			0.81	0.18		0.71	0.33

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 39.3		Intersection LOS: D	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

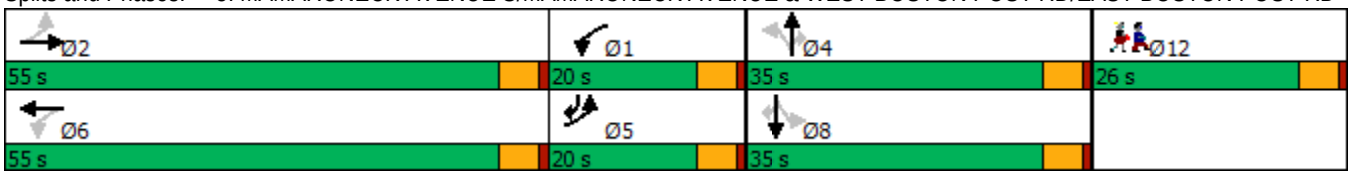
Intersection Summary

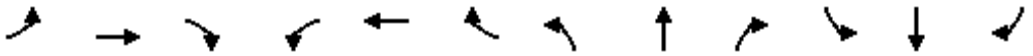
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

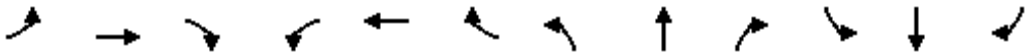
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	494	83	18	526	90	88	38	19	77	49	76
Future Volume (vph)	95	494	83	18	526	90	88	38	19	77	49	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	13	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.978			0.952			0.949	
Flt Protected		0.992			0.998		0.950				0.982	
Satd. Flow (prot)	0	3547	0	0	3573	0	1652	1608	0	0	1840	0
Flt Permitted		0.716			0.762		0.469				0.839	
Satd. Flow (perm)	0	2560	0	0	2728	0	815	1608	0	0	1572	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.79	0.90	0.80	0.75	0.89	0.83	0.85	0.63	0.68	0.92	0.88	0.90
Heavy Vehicles (%)	1%	2%	5%	6%	1%	6%	2%	5%	5%	3%	2%	0%
Adj. Flow (vph)	120	549	104	24	591	108	104	60	28	84	56	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	773	0	0	723	0	104	88	0	0	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	0.96	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.6			33.6		35.1	35.1			19.4	
Actuated g/C Ratio		0.34			0.34		0.35	0.35			0.19	
v/c Ratio		0.83			0.74		0.28	0.16			0.74	
Control Delay		41.8			35.2		27.7	26.4			55.8	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		41.8			35.2		27.7	26.4			55.8	
LOS		D			D		C	C			E	
Approach Delay		41.8			35.2			27.1			55.8	
Approach LOS		D			D			C			E	
Queue Length 50th (ft)		318			292		67	56			204	
Queue Length 95th (ft)		#560			495		155	97			#404	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1135			1194		373	667			391	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.68			0.61		0.28	0.13			0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 99.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 39.5		Intersection LOS: D	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

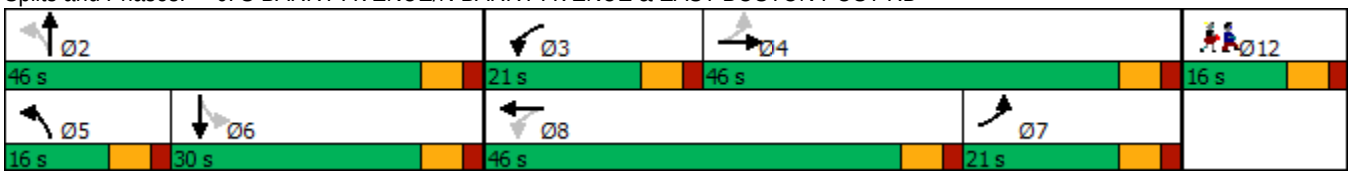
Intersection Summary

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



Appendix 6

Reasonable Build-Out
Net Incremental Development Scenarios by Cluster

Table: Existing Conditions Versus Potential Redevelopment by Cluster

	Cluster 1			Cluster 2			Cluster 3		
Land Use	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**
Residential									
Low-Rise Apartment	0 DU	93 DU	93 DU	0 DU	4 DU	4 DU	1 DU	18 DU	17 DU
Mid-Rise Apartment	21 DU	56 DU	35 DU	6 DU	0 DU	-6 DU	0 DU	37 DU	37 DU
Total Residential	**21 DU**	**149 DU**	**128 DU**	**6 DU**	**4 DU**	**-2 DU**	**1 DU**	**55 DU**	**54 DU**
Commercial									
Office	8,470 gsf		-8,470 gsf	0 gsf		0 gsf	14,528 gsf		-14,528 gsf
Local Retail	12,122 gsf	0 gsf	-12,122 gsf	0 gsf	0 gsf	0 gsf	7,920 gsf	0 gsf	-7,920 gsf
Gas Station	2,521 gsf		-2,521 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Fast Food Establishment	3,756 gsf		-3,756 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Motel	11,982 gsf		-11,982 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Drive-In Bank	2,501 gsf		-2,501 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Warehouse	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Car Wash	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Supermarket	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Auto Body Shop	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Fitness Club	25,265 gsf		-25,265 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Total Commercial	**66,617 gsf**	**0 gsf**	**-66,617 gsf**	**0 gsf**	**0 gsf**	**0 gsf**	**22,448 gsf**	**0 gsf**	**-22,448 gsf**

Table: Existing Conditions Versus Potential Redevelopment by Cluster

	Cluster 4			Cluster 5			Cluster 6		
Land Use	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**
Residential									
Low-Rise Apartment	3 DU	55 DU	52 DU	11 DU	29 DU	18 DU	42 DU	149 DU	107 DU
Mid-Rise Apartment	0 DU	109 DU	109 DU	25 DU	413 DU	388 DU	28 DU	142 DU	114 DU
Total Residential	**3 DU**	**164 DU**	**161 DU**	**36 DU**	**442 DU**	**406 DU**	**70 DU**	**291 DU**	**221 DU**
Commercial									
Office	20,098 gsf		-20,098 gsf	21,520 gsf		-21,520 gsf	18,333 gsf		-18,333 gsf
Local Retail	22,702 gsf	0 gsf	-22,702 gsf	17,312 gsf	50,677 gsf	33,365 gsf	28,996 gsf	0 gsf	-28,996 gsf
Gas Station	2,803 gsf		-2,803 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Fast Food Establishment	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Motel	3,056 gsf		-3,056 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Drive-In Bank	0 gsf		0 gsf	6,774 gsf		-6,774 gsf	0 gsf		0 gsf
Warehouse	0 gsf		0 gsf	7,508 gsf		-7,508 gsf	0 gsf		0 gsf
Car Wash	0 gsf		0 gsf	0 gsf		0 gsf	6,479 gsf		-6,479 gsf
Supermarket	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Auto Body Shop	0 gsf		0 gsf	3,044 gsf		-3,044 gsf	2,083 gsf		-2,083 gsf
Fitness Club	9,458 gsf		-9,458 gsf	19,404 gsf		-19,404 gsf	0 gsf		0 gsf
Total Commercial	**58,117 gsf**	**0 gsf**	**-58,117 gsf**	**75,562 gsf**	**50,677 gsf**	**-24,885 gsf**	**55,891 gsf**	**0 gsf**	**-55,891 gsf**

Table: Existing Conditions Versus Potential Redevelopment by Cluster

	Cluster 7			Cluster 8			Cluster 9			Cluster 10		
Land Use	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**	**Existing Condition**	**Future Potential Development**	**Net Increment**
Residential												
Low-Rise Apartment	43 DU	112 DU	69 DU	2 DU	102 DU	100 DU	2 DU	57 DU	55 DU	1 DU	23 DU	22 DU
Mid-Rise Apartment	47 DU	0 DU	-47 DU	60 DU	11 DU	-49 DU	3 DU	30 DU	27 DU	3 DU	0 DU	-3 DU
Total Residential	**90 DU**	**112 DU**	**22 DU**	**62 DU**	**113 DU**	**51 DU**	**5 DU**	**87 DU**	**82 DU**	**4 DU**	**23 DU**	**19 DU**
Commercial												
Office	0 gsf		0 gsf	0 gsf		0 gsf	3,700 gsf		-3,700 gsf	0 gsf		0 gsf
Local Retail	0 gsf	0 gsf	0 gsf	0 gsf	0 gsf	0 gsf	4,071 gsf	0 gsf	-4,071 gsf	20,183 gsf	0 gsf	-20,183 gsf
Gas Station	0 gsf		0 gsf	0 gsf		0 gsf	1,680 gsf		-1,680 gsf	0 gsf		0 gsf
Fast Food Establishment	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Motel	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Drive-In Bank	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Warehouse	28,534 gsf		-28,534 gsf	0 gsf		0 gsf	7,740 gsf		-7,740 gsf	0 gsf		0 gsf
Car Wash	0 gsf		0 gsf	0 gsf		0 gsf	3,444 gsf		-3,444 gsf	0 gsf		0 gsf
Supermarket	0 gsf		0 gsf	3,532 gsf		-3,532 gsf	3,318 gsf		-3,318 gsf	0 gsf		0 gsf
Auto Body Shop	0 gsf		0 gsf	4,637 gsf		-4,637 gsf	9,534 gsf		-9,534 gsf	2,176 gsf		-2,176 gsf
Fitness Club	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf	0 gsf		0 gsf
Total Commercial	**28,534 gsf**	**0 gsf**	**-28,534 gsf**	**8,169 gsf**	**0 gsf**	**-8,169 gsf**	**33,487 gsf**	**0 gsf**	**-33,487 gsf**	**22,359 gsf**	**0 gsf**	**-22,359 gsf**

Appendix 7

Reasonable Build-Out
Trip Generation/Travel Demand Forecasts
By Cluster

Cluster 1

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:	221		710		820		492		933		320		912		944		
Land Use:	Mid Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Fitness Club		Fast Food Establishment		Motel		Drive-In Bank		Gas Station		Total Existing
Size/Units:	-21 DU		-8,470 gsf		-12,122 gsf		-25,265 gsf		-3,756 gsf		-28 occ. rooms		-2,501 gsf		-4 fueling sta.		
Peak Hour Vehicle Trips:	(1)		(1)		(1)		(1)		(1)		(1)		(1)		(1)		-
AM	-7		-10		-11		-33		-10		-26		-24		-41		-
MD	-5		-8		-46		-50		-190		-6		-36		-41		-
PM	-10		-10		-46		-100		-106		-14		-51		-56		-
Sat MD	-9		-4		-55		-81		-205		-47		-66		-51		-
																	-
Link/Pass-by Trip %:	0%		0%		60%		35%		65%		0%		40% AM/MD 55% PM/Sat		80%		-
Directional Distribution:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
AM	26%	74%	86%	14%	62%	38%	51%	49%	60%	40%	36%	64%	58%	42%	50%	50%	
MD	51%	49%	50%	50%	53%	47%	42%	58%	49%	51%	43%	57%	51%	49%	51%	49%	
PM	61%	39%	16%	84%	48%	52%	57%	43%	50%	50%	54%	46%	50%	50%	50%	50%	
Sat MD	49%	51%	54%	46%	52%	48%	49%	51%	49%	51%	45%	55%	51%	49%	50%	50%	
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	-2	-5	-8	-1	-3	-2	-11	-11	-2	-1	-9	-17	-8	-6	-4	-4	-47	-47
	-7		-9		-5		-22		-3		-26		-14		-8		-94	
MD	-3	-3	-4	-4	-10	-9	-14	-19	-33	-34	-2	-3	-11	-10	-4	-4	-81	-86
	-6		-8		-19		-33		-67		-5		-21		-8		-167	
PM	-6	-4	-2	-8	-9	-10	-37	-28	-19	-19	-8	-6	-12	-12	-6	-6	-99	-93
	-10		-10		-19		-65		-38		-14		-24		-12		-192	
Sat MD	-5	-5	-2	-2	-11	-10	-26	-27	-35	-37	-21	-26	-15	-15	-5	-5	-120	-127
	-10		-4		-21		-53		-72		-47		-30		-10		-247	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 1

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221							
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)		Total Proposed		Total Existing		Total Increment	
Size/Units:	93 DU		56 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	43		19		-		-		-	
MD	37		14		-		-		-	
PM	52		25		-		-		-	
Sat MD	65		25		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	10	33	5	14	15	47	-47	-47	-32	0
	43		19		62		-94		-32	
MD	19	18	7	7	26	25	-81	-86	-55	-61
	37		14		51		-167		-116	
PM	34	18	15	10	49	28	-99	-93	-50	-65
	52		25		77		-192		-115	
Sat MD	33	33	12	13	45	46	-120	-127	-75	-81
	66		25		91		-247		-156	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 2

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		221			
Land Use:		Mid Rise Apt (Res)		Total Existing	
Size/Units:		-6 DU			
Peak Hour Vehicle Trips:		(1)		-	
	AM	-2		-	
	MD	-1		-	
	PM	-3		-	
	Sat MD	-3		-	
				-	
Link/Pass-by Trip %:		0%		-	
Directional Distribution:		In	Out		
	AM	26%	74%		
	MD	51%	49%		
	PM	61%	39%		
	Sat MD	49%	51%		
Vehicle Trips:		In	Out	In	Out
	AM	-1	-2	-1	-2
		-3		-3	
	MD	-1	-1	-1	-1
		-2		-2	
	PM	-2	-1	-2	-1
		-3		-3	
	Sat MD	-1	-1	-1	-1
		-2		-2	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 2

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)							
Size/Units:	4 DU							
Peak Hour Vehicle Trips:	(1)		-		-		-	
AM	2		-		-		-	
MD	2		-		-		-	
PM	2		-		-		-	
Sat MD	3		-		-		-	
			-		-		-	
Linked/Pass-by Trip Percentage:	0%		-		-		-	
Directional Distribution:	In	Out						
AM	23%	77%						
MD	51%	49%						
PM	65%	35%						
Sat MD	50%	50%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out
AM	0	1	0	1	-1	-2	-1	-1
	1		1		-3		-2	
MD	1	1	1	1	-1	-1	0	0
	2		2		-2		0	
PM	1	1	1	1	-2	-1	-1	0
	2		2		-3		-1	
Sat MD	1	1	1	1	-1	-1	0	0
	2		2		-2		0	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 3

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		710		820		
Land Use:		Low Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Total Existing
Size/Units:		-1 DU		-14,528 gsf		-7,920 gsf		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		-
	AM	0		-17		-7		-
	MD	0		-15		-30		-
	PM	-1		-17		-30		-
	Sat MD	-1		-8		-36		-
								-
Link/Pass-by Trip %:		0%		0%		60%		-
Directional Distribution:		In	Out	In	Out	In	Out	
	AM	23%	77%	86%	14%	62%	38%	
	MD	51%	49%	50%	50%	53%	47%	
	PM	65%	35%	16%	84%	48%	52%	
	Sat MD	50%	50%	54%	46%	52%	48%	
Vehicle Trips:		In	Out	In	Out	In	Out	In Out
	AM	0	0	-14	-2	-2	-1	-16 -3
		0		-16		-3		-19
	MD	0	0	-7	-7	-6	-6	-13 -13
		0		-14		-12		-26
	PM	0	0	-3	-14	-6	-6	-9 -20
		0		-17		-12		-29
	Sat MD	0	0	-4	-4	-7	-7	-11 -11
		0		-8		-14		-22

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 3

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)							
Size/Units:	18 DU		37 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	8		13		-		-		-	
MD	7		9		-		-		-	
PM	10		17		-		-		-	
Sat MD	13		16		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	2	6	3	10	5	16	-16	-3	-11	13
	8		13		21		-19		2	
MD	4	4	5	5	9	9	-13	-13	-4	-4
	8		10		18		-26		-8	
PM	7	4	10	7	17	11	-9	-20	8	-9
	11		17		28		-29		-1	
Sat MD	6	6	8	8	14	14	-11	-11	3	3
	12		16		28		-22		6	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 4

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		710		820		492		320		944		
Land Use:		Low Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Fitness Club		Motel		Gas Station		Total Existing
Size/Units:		-3 DU		-20,098 gsf		-22,702 gsf		-9,458 gsf		-11 occ. rooms		-10 fueling sta.		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		(1)		(1)		(1)		-
	AM	-1		-23		-21		-12		-20		-103		-
	MD	-1		-20		-86		-26		-2		-101		-
	PM	-2		-23		-86		-52		-6		-140		-
	Sat MD	-2		-11		-102		-30		-41		-128		-
														-
Link/Pass-by Trip %:		0%		0%		60%		35%		0%		80%		-
Directional Distribution:		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	AM	23%	77%	86%	14%	62%	38%	51%	49%	36%	64%	50%	50%	
	MD	51%	49%	50%	50%	53%	47%	42%	58%	43%	57%	51%	49%	
	PM	65%	35%	16%	84%	48%	52%	57%	43%	54%	46%	50%	50%	
	Sat MD	50%	50%	54%	46%	52%	48%	49%	51%	45%	55%	50%	50%	
Vehicle Trips:		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In Out
	AM	0	-1	-20	-3	-5	-3	-4	-4	-7	-13	-10	-10	-46 -34
		-1		-23		-8		-8		-20		-20		-80
	MD	-1	-1	-10	-10	-18	-16	-7	-10	-1	-1	-10	-10	-47 -48
		-2		-20		-34		-17		-2		-20		-95
	PM	-1	-1	-4	-19	-17	-18	-19	-14	-3	-3	-14	-14	-58 -69
		-2		-23		-35		-33		-6		-28		-127
	Sat MD	-1	-1	-6	-5	-21	-20	-10	-10	-18	-22	-13	-13	-69 -71
		-2		-11		-41		-20		-40		-26		-140

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 4

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)							
Size/Units:	55 DU		109 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	25		37		-		-		-	
MD	22		28		-		-		-	
PM	31		48		-		-		-	
Sat MD	39		48		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	6	19	10	28	16	47	-46	-34	-30	13
	25		38		63		-80		-17	
MD	11	11	14	14	25	25	-47	-48	-22	-23
	22		28		50		-95		-45	
PM	20	11	29	19	49	30	-58	-69	-9	-39
	31		48		79		-127		-48	
Sat MD	19	19	24	24	43	43	-69	-71	-26	-28
	38		48		86		-140		-54	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 5

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:	220		221		710		820		150		912		943		
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Warehouse		Drive-In Bank		Auto Service		Total Existing
Size/Units:	-11 DU		-25 DU		-40,924 gsf		-17,312 gsf		-7,508 gsf		-6,774 gsf		-3,044 gsf		
Peak Hour Vehicle Trips:	(1)		(1)		(1)		(1)		(1)		(1)		(1)		-
AM	-5		-9		-47		-16		-26		-64		-6		-
MD	-4		-6		-41		-65		-5		-75		-5		-
PM	-6		-12		-47		-66		-29		-139		-7		-
Sat MD	-8		-11		-22		-78		0		-178		-20		-
															-
Link/Pass-by Trip %:	0%		0%		0%		60%		0%		40% AM/MD 55% PM/Sat		35%		-
Directional Distribution:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
AM	23%	77%	26%	74%	86%	14%	62%	38%	77%	23%	58%	42%	66%	34%	
MD	51%	49%	51%	49%	50%	50%	53%	47%	53%	47%	51%	49%	46%	54%	
PM	65%	35%	61%	39%	16%	84%	48%	52%	27%	73%	50%	50%	48%	52%	
Sat MD	50%	50%	49%	51%	54%	46%	52%	48%	64%	36%	51%	49%	56%	44%	
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	-1	-4	-2	-7	-41	-7	-4	-2	-20	-6	-22	-16	-3	-1	-93	-43
	-5		-9		-48		-6		-26		-38		-4		-136	
MD	-2	-2	-3	-3	-21	-21	-14	-12	-3	-2	-23	-22	-1	-2	-67	-64
	-4		-6		-42		-26		-5		-45		-3		-131	
PM	-4	-2	-7	-5	-8	-40	-13	-14	-8	-21	-31	-31	-2	-2	-73	-115
	-6		-12		-48		-27		-29		-62		-4		-188	
Sat MD	-4	-4	-5	-6	-12	-10	-16	-15	0	0	-41	-39	-7	-6	-85	-80
	-8		-11		-22		-31		0		-80		-13		-165	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 5

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221		820				
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)		Local Retail (Shp Ctr)		Total Proposed	Total Existing	Total Increment
Size/Units:	29 DU		413 DU		50,677 gsf				
Peak Hour Vehicle Trips:	(1)		(1)		(1)		-	-	-
AM	13		137		48		-	-	-
MD	12		106		191		-	-	-
PM	16		173		193		-	-	-
Sat MD	20		182		228		-	-	-
							-	-	-
Linked/Pass-by Trip Percentage:	0%		0%		60%		-	-	-
Directional Distribution:	In	Out	In	Out	In	Out			
AM	23%	77%	26%	74%	62%	38%			
MD	51%	49%	51%	49%	53%	47%			
PM	65%	35%	61%	39%	48%	52%			
Sat MD	50%	50%	49%	51%	52%	48%			
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	3	10	36	102	12	7	51	119	-93	-43	-42	76
	13		138		19		170		-136		34	
MD	6	6	54	52	41	36	101	94	-67	-64	34	30
	12		106		77		195		-131		64	
PM	11	6	105	67	37	40	153	113	-73	-115	80	-2
	17		172		77		266		-188		78	
Sat MD	10	10	89	93	47	44	146	147	-85	-80	61	67
	20		182		91		293		-165		128	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 6

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		221		710		820		948		943		
Land Use:		Low Rise Apt (Res)		Mid Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Car Wash		Auto Service		Total Existing
Size/Units:		-42 DU		-28 DU		-32,239 gsf		-15,090 gsf		-6,479 gsf		-2,083 gsf		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		(1)		(1)		(1)		-
	AM	-19		-10		-37		-14		-19		-4		-
	MD	-17		-7		-32		-57		-76		-3		-
	PM	-24		-13		-37		-57		-92		-5		-
	Sat MD	-29		-12		-17		-68		-132		-14		-
														-
Link/Pass-by Trip %:		0%		0%		0%		60%		35%		35%		-
Directional Distribution:		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
	AM	23%	77%	26%	74%	86%	14%	62%	38%	50%	50%	66%	34%	
	MD	51%	49%	51%	49%	50%	50%	53%	47%	50%	50%	46%	54%	
	PM	65%	35%	61%	39%	16%	84%	48%	52%	51%	49%	48%	52%	
	Sat MD	50%	50%	49%	51%	54%	46%	52%	48%	50%	50%	56%	44%	
Vehicle Trips:		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In Out
	AM	-4	-15	-3	-7	-32	-5	-4	-2	-6	-6	-2	-1	-51 -36
		-19		-10		-37		-6		-12		-3		-87
	MD	-9	-8	-4	-3	-16	-16	-12	-11	-25	-25	-1	-1	-67 -64
		-17		-7		-32		-23		-50		-2		-131
	PM	-15	-8	-8	-5	-6	-31	-11	-12	-30	-29	-1	-2	-71 -87
		-23		-13		-37		-23		-59		-3		-158
	Sat MD	-15	-15	-6	-6	-9	-8	-14	-13	-43	-43	-5	-4	-92 -89
		-30		-12		-17		-27		-86		-9		-181

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 6

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:		220		221		Total Proposed		Total Existing		Total Increment	
Land Use:		Low Rise Apt (Res)		Mid Rise Apt (Res)							
Size/Units:		149 DU		142 DU							
Peak Hour Vehicle Trips:		(1)		(1)		-		-		-	
	AM	69		48		-		-		-	
	MD	60		36		-		-		-	
	PM	83		62		-		-		-	
	Sat MD	104		62		-		-		-	
						-		-		-	
Linked/Pass-by Trip Percentage:		0%		0%		-		-		-	
Directional Distribution:		In	Out	In	Out						
	AM	23%	77%	26%	74%						
	MD	51%	49%	51%	49%						
	PM	65%	35%	61%	39%						
	Sat MD	50%	50%	49%	51%						
Vehicle Trips:		In	Out	In	Out	In	Out	In	Out	In	Out
	AM	16	53	13	36	29	89	-51	-36	-22	53
		69		49		118		-87		31	
	MD	31	29	19	18	50	47	-67	-64	-17	-17
		60		37		97		-131		-34	
	PM	54	29	38	24	92	53	-71	-87	21	-34
		83		62		145		-158		-13	
	Sat MD	52	52	31	32	83	84	-92	-89	-9	-5
		104		63		167		-181		-14	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 7

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		221		150		
Land Use:		Low Rise Apt (Res)		Mid Rise Apt (Res)		Warehouse		Total Existing
Size/Units:		-43 DU		-47 DU		-28,534 gsf		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		-
	AM	-20		-16		-29		-
	MD	-17		-12		-8		-
	PM	-24		-21		-31		-
	Sat MD	-30		-21		-1		-
								-
Link/Pass-by Trip %:		0%		0%		0%		-
Directional Distribution:		In	Out	In	Out	In	Out	
	AM	23%	77%	26%	74%	77%	23%	
	MD	51%	49%	51%	49%	53%	47%	
	PM	65%	35%	61%	39%	27%	73%	
	Sat MD	50%	50%	49%	51%	64%	36%	
Vehicle Trips:		In	Out	In	Out	In	Out	In Out
	AM	-5	-15	-4	-12	-22	-7	-31 -34
		-20		-16		-29		-65
	MD	-9	-8	-6	-6	-4	-4	-19 -18
		-17		-12		-8		-37
	PM	-16	-8	-13	-8	-8	-23	-37 -39
		-24		-21		-31		-76
	Sat MD	-15	-15	-10	-11	-1	-1	-26 -27
		-30		-21		-2		-53

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 7

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221							
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)		Total Proposed		Total Existing		Total Increment	
Size/Units:	112 DU		0 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	52		0		-		-		-	
MD	45		0		-		-		-	
PM	63		0		-		-		-	
Sat MD	78		0		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	12	40	0	0	12	40	-31	-34	-19	6
	52		0		52		-65		-13	
MD	23	22	0	0	23	22	-19	-18	4	4
	45		0		45		-37		8	
PM	41	22	0	0	41	22	-37	-39	4	-17
	63		0		63		-76		-13	
Sat MD	39	39	0	0	39	39	-26	-27	13	12
	78		0		78		-53		25	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 8

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		221		850		943		
Land Use:		Low Rise Apt (Res)		Mid Rise Apt (Res)		Supermarket		Auto Service		Total Existing
Size/Units:		-2 DU		-60 DU		-3,532 gsf		-4,637 gsf		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		(1)		-
	AM	-1		-21		-13		-9		-
	MD	-1		-15		-107		-7		-
	PM	-1		-27		-64		-10		-
	Sat MD	-1		-26		-88		-31		-
										-
Link/Pass-by Trip %:		0%		0%		75%		35%		-
Directional Distribution:		In	Out	In	Out	In	Out	In	Out	
	AM	23%	77%	26%	74%	60%	40%	66%	34%	
	MD	51%	49%	51%	49%	50%	50%	46%	54%	
	PM	65%	35%	61%	39%	51%	49%	48%	52%	
	Sat MD	50%	50%	49%	51%	51%	49%	56%	44%	
Vehicle Trips:		In	Out	In	Out	In	Out	In	Out	In	Out
	AM	0	-1	-5	-15	-2	-1	-4	-2	-11	-19
		-1		-20		-3		-6		-30	
	MD	0	0	-8	-7	-13	-13	-2	-3	-23	-23
		0		-15		-26		-5		-46	
	PM	-1	0	-17	-11	-8	-8	-3	-4	-29	-23
		-1		-28		-16		-7		-52	
	Sat MD	-1	-1	-13	-13	-11	-11	-11	-9	-36	-34
		-2		-26		-22		-20		-70	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 8

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)							
Size/Units:	102 DU		11 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	47		4		-		-		-	
MD	41		3		-		-		-	
PM	57		5		-		-		-	
Sat MD	71		5		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	11	36	1	3	12	39	-11	-19	1	20
	47		4		51		-30		21	
MD	21	20	1	1	22	21	-23	-23	-1	-2
	41		2		43		-46		-3	
PM	37	20	3	2	40	22	-29	-23	11	-1
	57		5		62		-52		10	
Sat MD	36	36	2	2	38	38	-36	-34	2	4
	72		4		76		-70		6	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 9

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:	220		221		710		820		850		150		944		948		943		
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)		Office		Local Retail (Shp. Cntr)		Supermarket		Warehouse		Gas Station		Car Wash		Auto Service		Total Existing
Size/Units:	-2 DU		-3 DU		-3,700 gsf		-4,071 gsf		-3,318 gsf		-7,740 gsf		-18 fueling sta.		-3,444 gsf		-9,534 gsf		
Peak Hour Vehicle Trips:	(1)		(1)		(1)		(1)		(1)		(1)		(1)		(1)		(1)		-
AM	-1		-1		-4		-4		-13		-26		-185		-10		-19		-
MD	-1		-1		-4		-15		-106		-5		-183		-40		-15		-
PM	-1		-2		-4		-16		-61		-29		-253		-49		-22		-
Sat MD	-1		-1		-2		-18		-85		0		-230		-70		-63		-
																			-
Link/Pass-by Trip %:	0%		0%		0%		60%		75%		0%		80%		35%		35%		-
Directional Distribution:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	
AM	23%	77%	26%	74%	86%	14%	62%	38%	60%	40%	77%	23%	50%	50%	50%	50%	66%	34%	
MD	51%	49%	51%	49%	50%	50%	53%	47%	50%	50%	53%	47%	51%	49%	50%	50%	46%	54%	
PM	65%	35%	61%	39%	16%	84%	48%	52%	51%	49%	27%	73%	50%	50%	51%	49%	48%	52%	
Sat MD	50%	50%	49%	51%	54%	46%	52%	48%	51%	49%	64%	36%	50%	50%	50%	50%	56%	44%	
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	0	-1	0	-1	-4	-1	-1	-1	-2	-1	-20	-6	-19	-19	-3	-3	-8	-4	-57	-37
	-1		-1		-5		-2		-3		-26		-38		-6		-12		-94	
MD	0	0	0	0	-2	-2	-3	-3	-13	-13	-3	-2	-19	-18	-13	-13	-4	-5	-57	-56
	0		0		-4		-6		-26		-5		-37		-26		-9		-113	
PM	-1	0	-1	-1	-1	-4	-3	-3	-8	-7	-8	-21	-25	-25	-16	-16	-7	-7	-70	-84
	-1		-2		-5		-6		-15		-29		-50		-32		-14		-154	
Sat MD	-1	-1	-1	-1	-1	-1	-4	-4	-11	-10	0	0	-23	-23	-23	-23	-23	-18	-87	-81
	-2		-2		-2		-8		-21		0		-46		-46		-41		-168	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 9

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		221		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)		Mid Rise Apt (Res)							
Size/Units:	57 DU		30 DU							
Peak Hour Vehicle Trips:	(1)		(1)		-		-		-	
AM	26		11		-		-		-	
MD	23		8		-		-		-	
PM	32		14		-		-		-	
Sat MD	40		13		-		-		-	
					-		-		-	
Linked/Pass-by Trip Percentage:	0%		0%		-		-		-	
Directional Distribution:	In	Out	In	Out						
AM	23%	77%	26%	74%						
MD	51%	49%	51%	49%						
PM	65%	35%	61%	39%						
Sat MD	50%	50%	49%	51%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out	In	Out
AM	6	20	3	8	9	28	-57	-37	-48	-9
	26		11		37		-94		-57	
MD	12	11	4	4	16	15	-57	-56	-41	-41
	23		8		31		-113		-82	
PM	21	11	9	5	30	16	-70	-84	-40	-68
	32		14		46		-154		-108	
Sat MD	20	20	6	7	26	27	-87	-81	-61	-54
	40		13		53		-168		-115	

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 10

Transportation Planning Factors - VoM Moratorium Analysis - Existing Uses Eliminated by Residential

ITE Land Use Code:		220		221		820		943		
Land Use:		Low Rise Apt (Res)		Mid Rise Apt (Res)		Local Retail (Shp. Cntr)		Auto Service		Total Existing
Size/Units:		-1 DU		-3 DU		-20,183 gsf		-2,176 gsf		
Peak Hour Vehicle Trips:		(1)		(1)		(1)		(1)		-
	AM	0		-1		-19		-4		-
	MD	0		-1		-76		-3		-
	PM	-1		-2		-77		-5		-
	Sat MD	-1		-1		-91		-14		-
										-
Link/Pass-by Trip %:		0%		0%		60%		35%		-
Directional Distribution:		In	Out	In	Out	In	Out	In	Out	
	AM	23%	77%	26%	74%	62%	38%	66%	34%	
	MD	51%	49%	51%	49%	53%	47%	46%	54%	
	PM	65%	35%	61%	39%	48%	52%	48%	52%	
	Sat MD	50%	50%	49%	51%	52%	48%	56%	44%	
Vehicle Trips:		In	Out	In	Out	In	Out	In	Out	In Out
	AM	0	0	0	-1	-5	-3	-2	-1	-7 -5
		0		-1		-8		-3		-12
	MD	0	0	0	0	-16	-14	-1	-1	-17 -15
		0		0		-30		-2		-32
	PM	0	0	-1	-1	-15	-16	-2	-2	-18 -19
		0		-2		-31		-4		-37
	Sat MD	0	0	-1	-1	-19	-17	-5	-4	-25 -22
		0		-2		-36		-9		-47

Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

Cluster 10

Transportation Planning Factors - VoM Moratorium Analysis - Proposed Uses

ITE Land Use Code:	220		Total Proposed		Total Existing		Total Increment	
Land Use:	Low Rise Apt (Res)							
Size/Units:	23 DU							
Peak Hour Vehicle Trips:	(1)		-		-		-	
AM	11		-		-		-	
MD	9		-		-		-	
PM	13		-		-		-	
Sat MD	16		-		-		-	
			-		-		-	
Linked/Pass-by Trip Percentage:	0%		-		-		-	
Directional Distribution:	In	Out						
AM	23%	77%						
MD	51%	49%						
PM	65%	35%						
Sat MD	50%	50%						
Vehicle Trips:	In	Out	In	Out	In	Out	In	Out
AM	2	8	2	8	-7	-5	-5	3
	10		10		-12		-2	
MD	5	5	5	5	-17	-15	-12	-10
	10		10		-32		-22	
PM	8	5	8	5	-18	-19	-10	-14
	13		13		-37		-24	
Sat MD	8	8	8	8	-25	-22	-17	-14
	16		16		-47		-31	

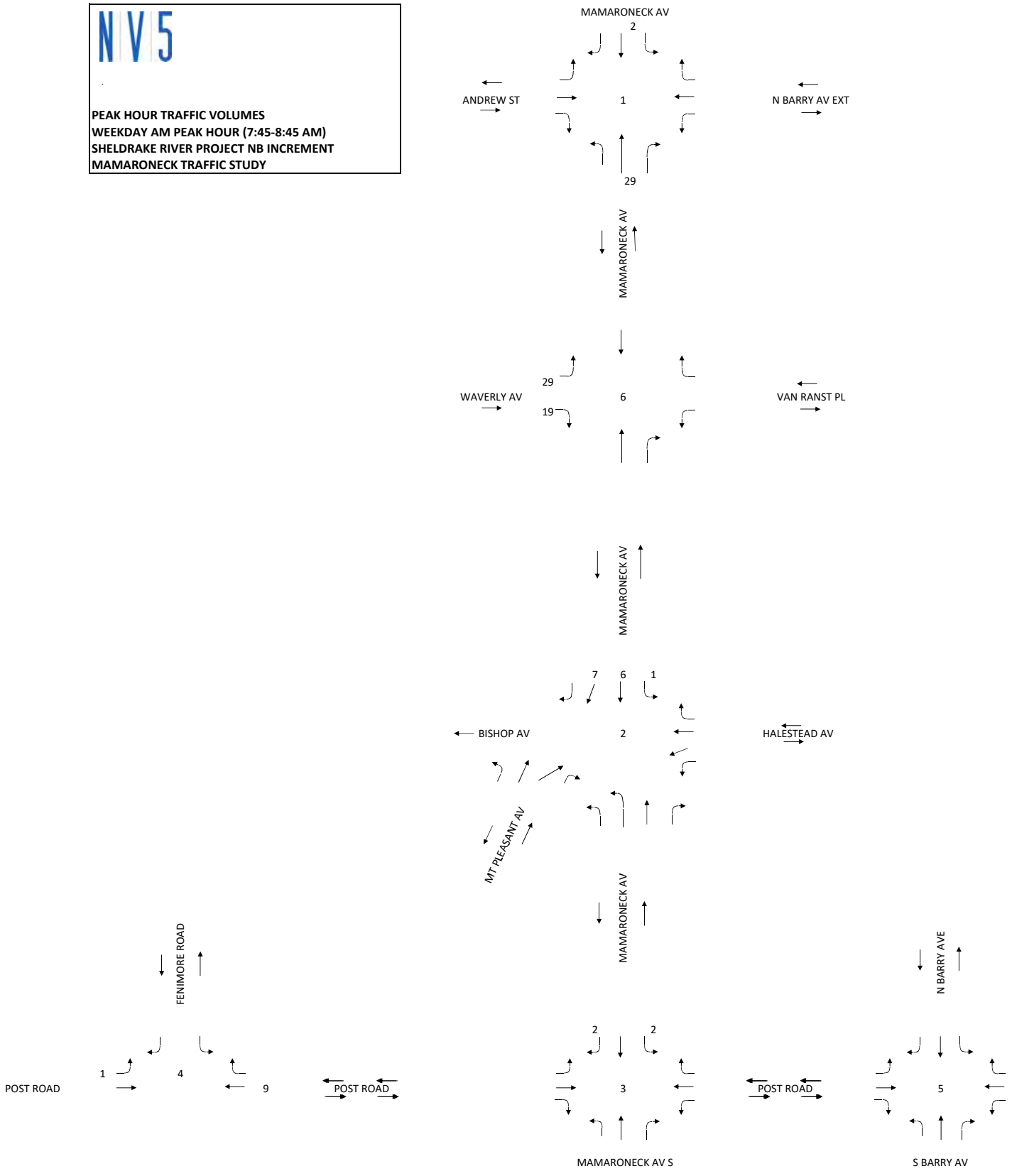
Notes:

(1) Based on ITE Trip Generation Manual, 10th Edition 2018

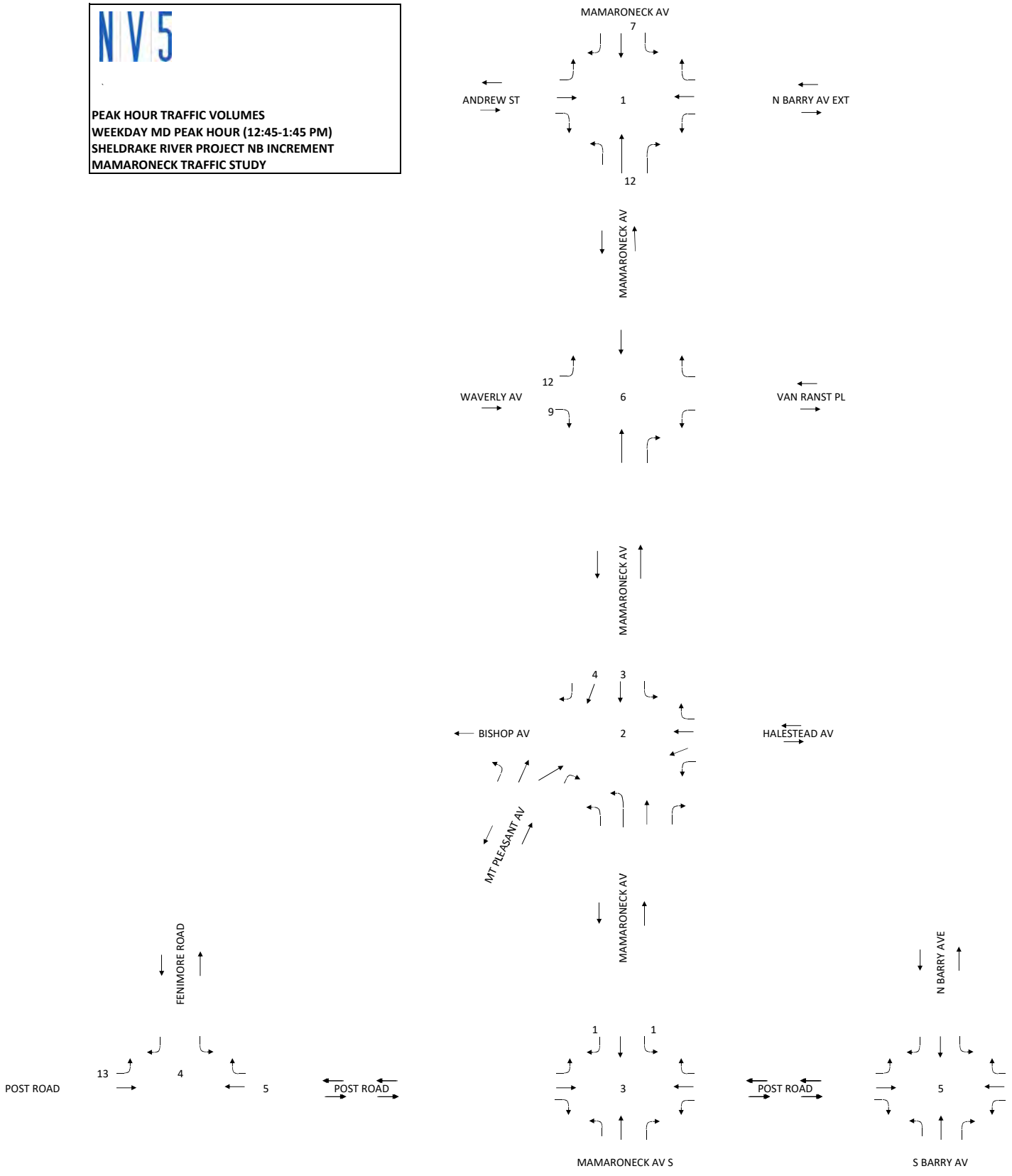
Appendix 8

Forecasted Future Incremental Traffic Volume Flow Maps

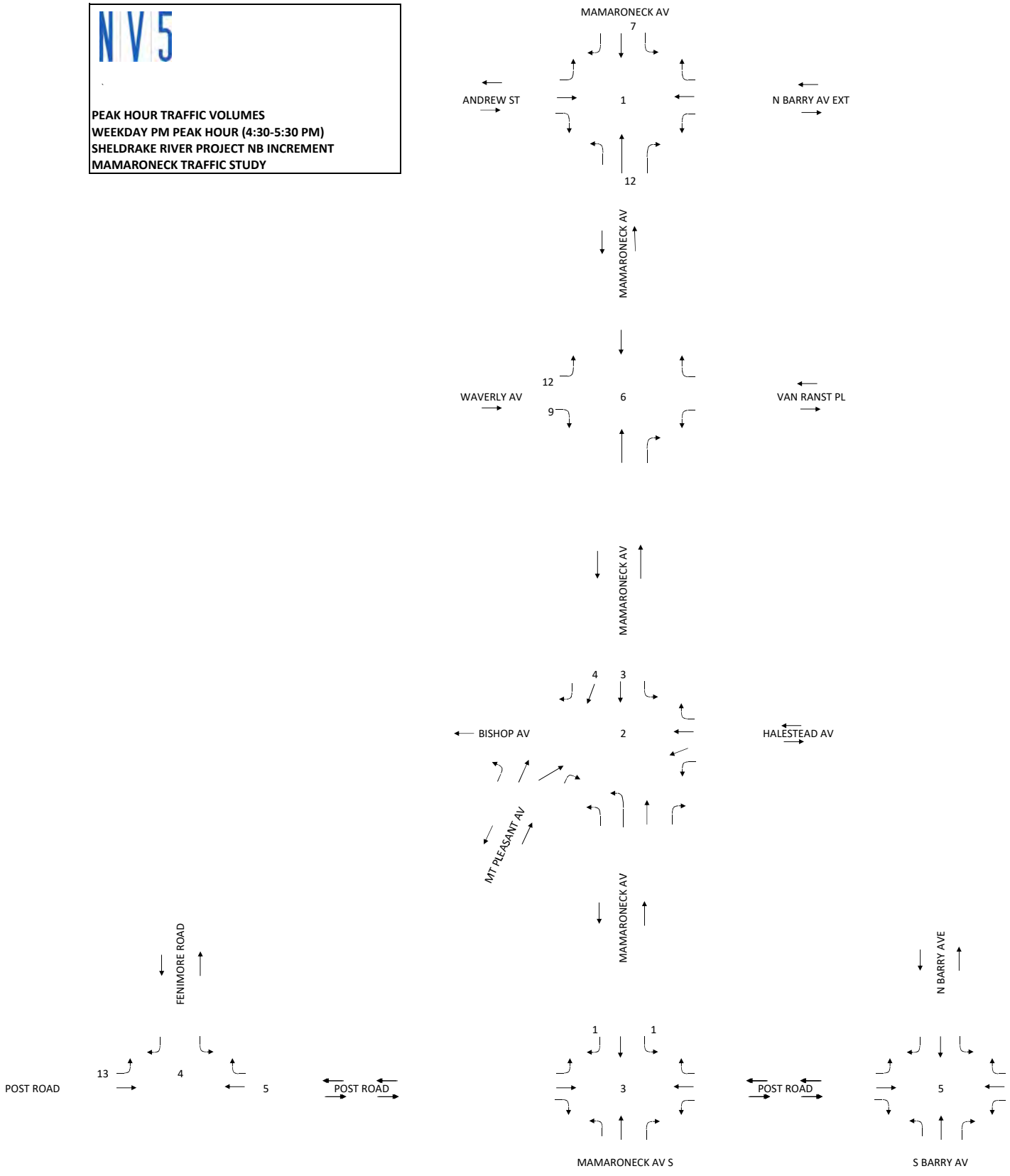
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
SHELDRAKE RIVER PROJECT NB INCREMENT
MAMARONECK TRAFFIC STUDY



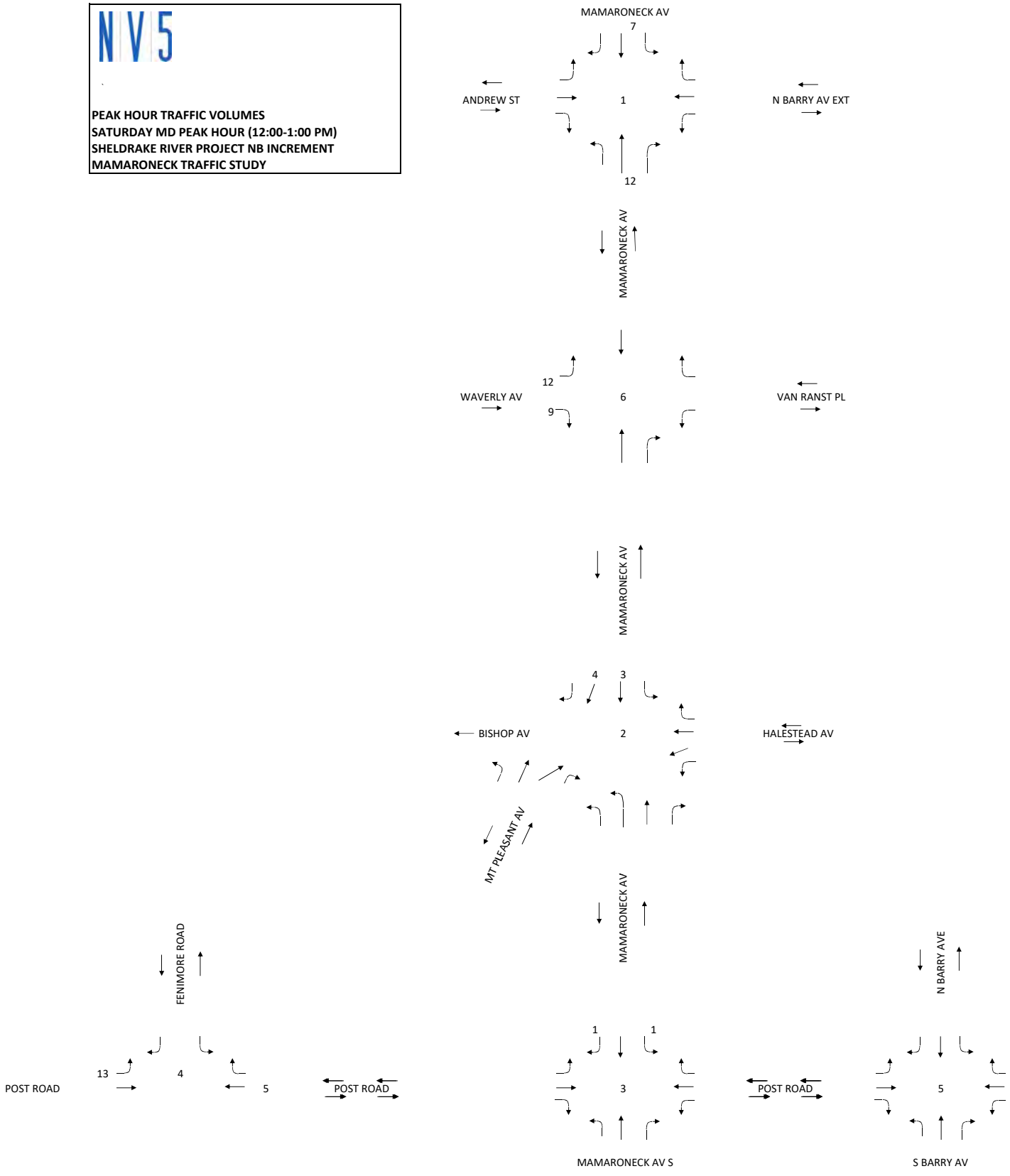
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
SHELDRAKE RIVER PROJECT NB INCREMENT
MAMARONECK TRAFFIC STUDY



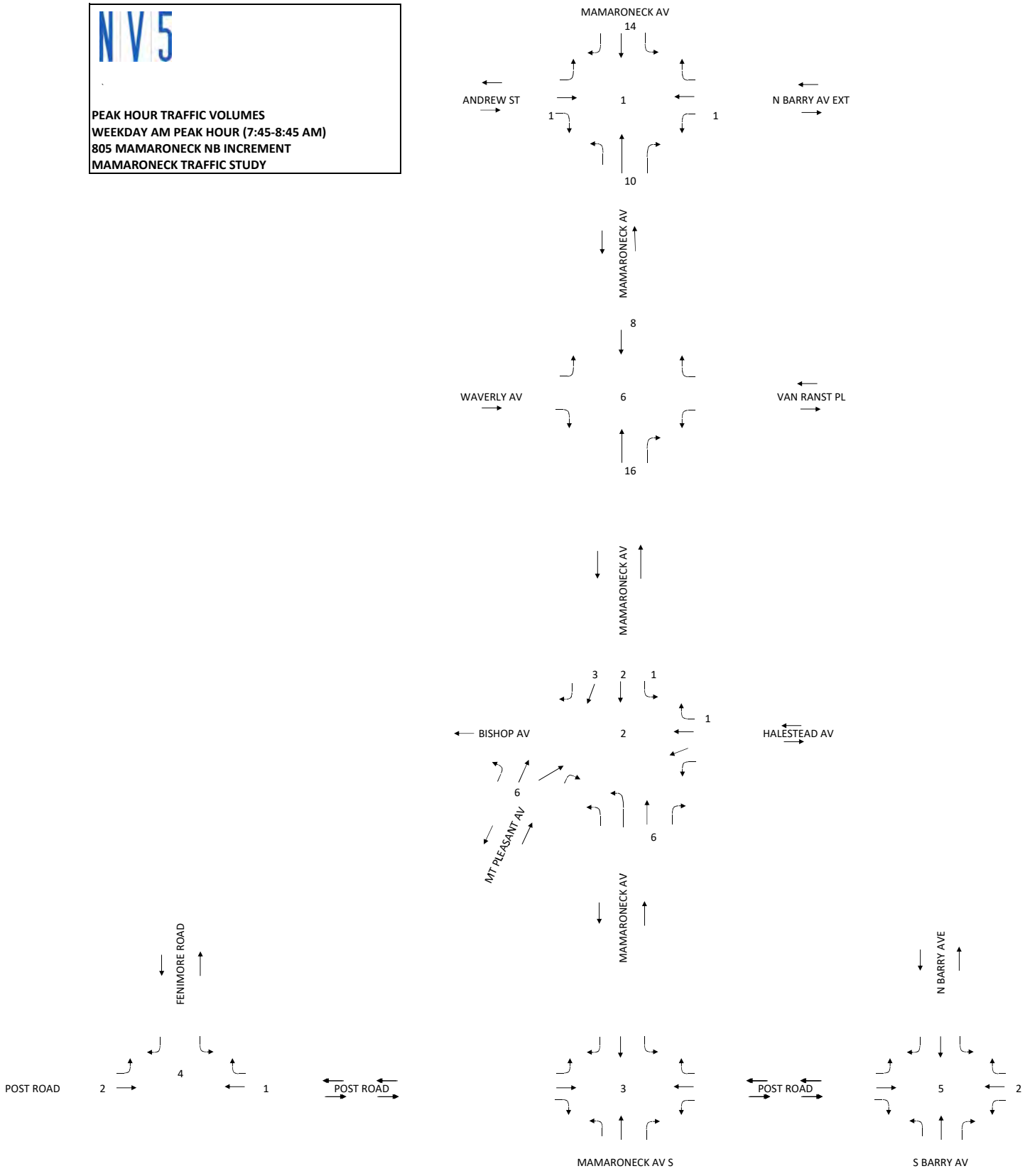
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
SHELDRAKE RIVER PROJECT NB INCREMENT
MAMARONECK TRAFFIC STUDY



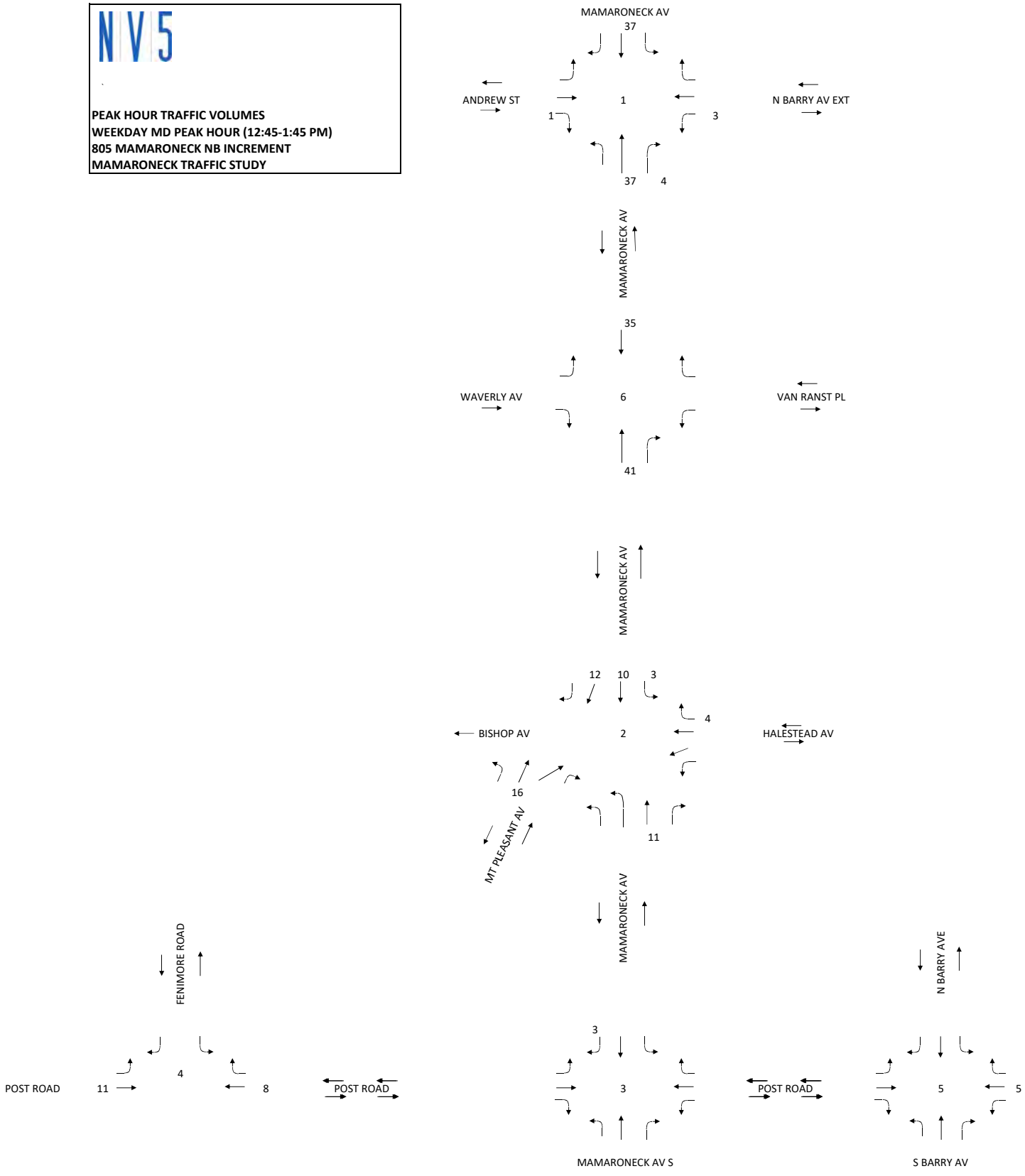
PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
SHELDRAKE RIVER PROJECT NB INCREMENT
MAMARONECK TRAFFIC STUDY



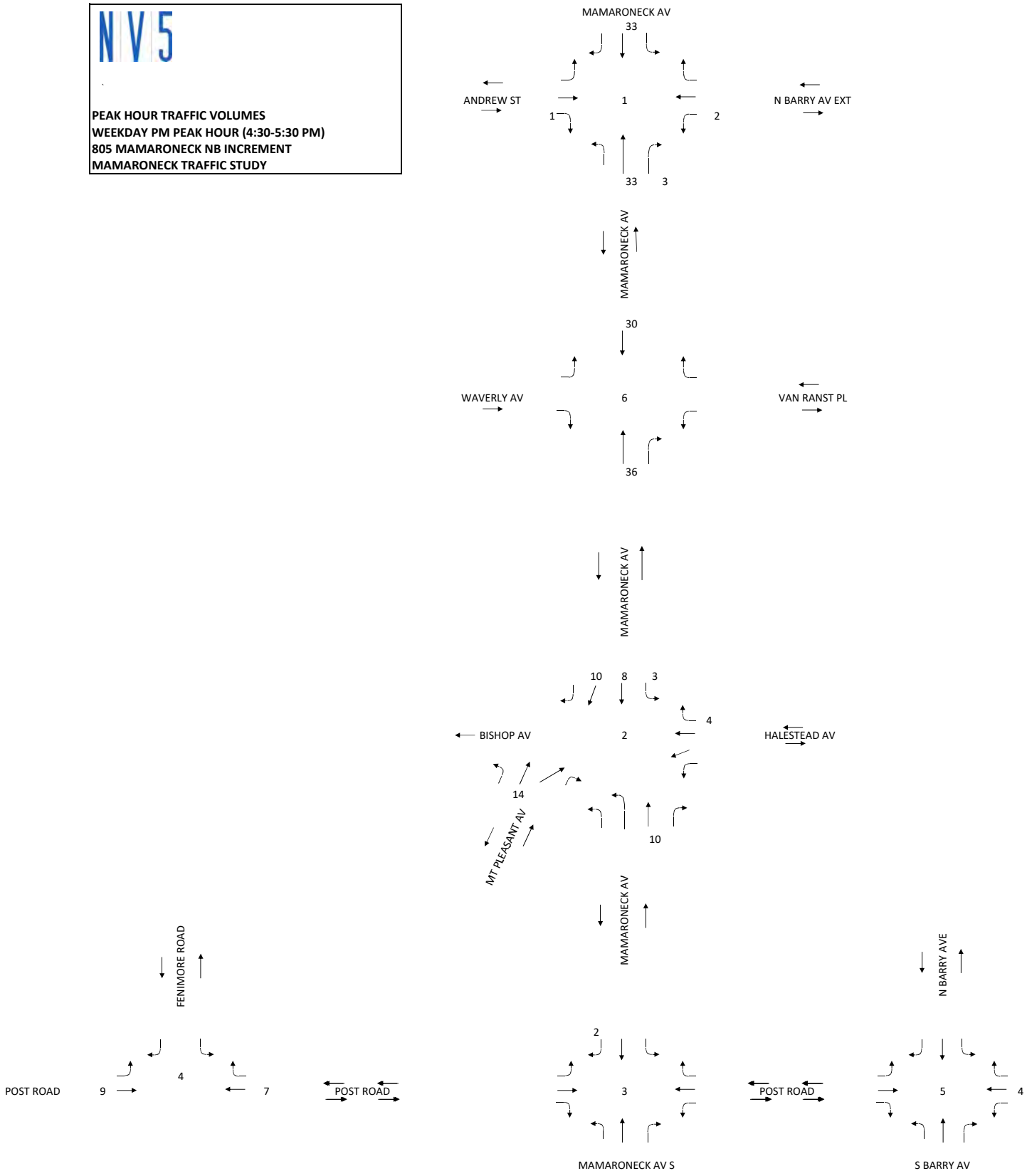
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
805 MAMARONECK NB INCREMENT
MAMARONECK TRAFFIC STUDY



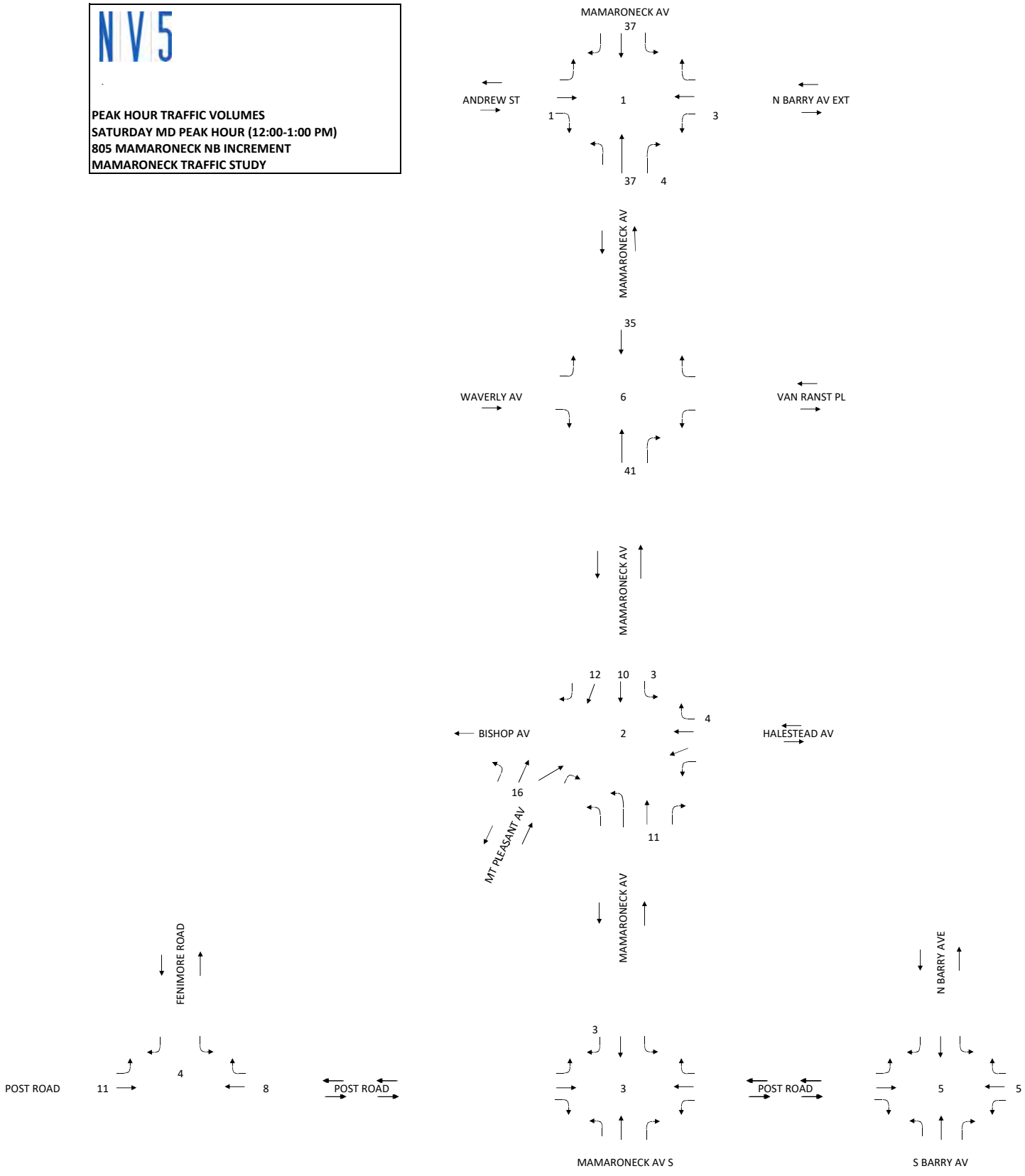
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
805 MAMARONECK NB INCREMENT
MAMARONECK TRAFFIC STUDY



PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
805 MAMARONECK NB INCREMENT
MAMARONECK TRAFFIC STUDY

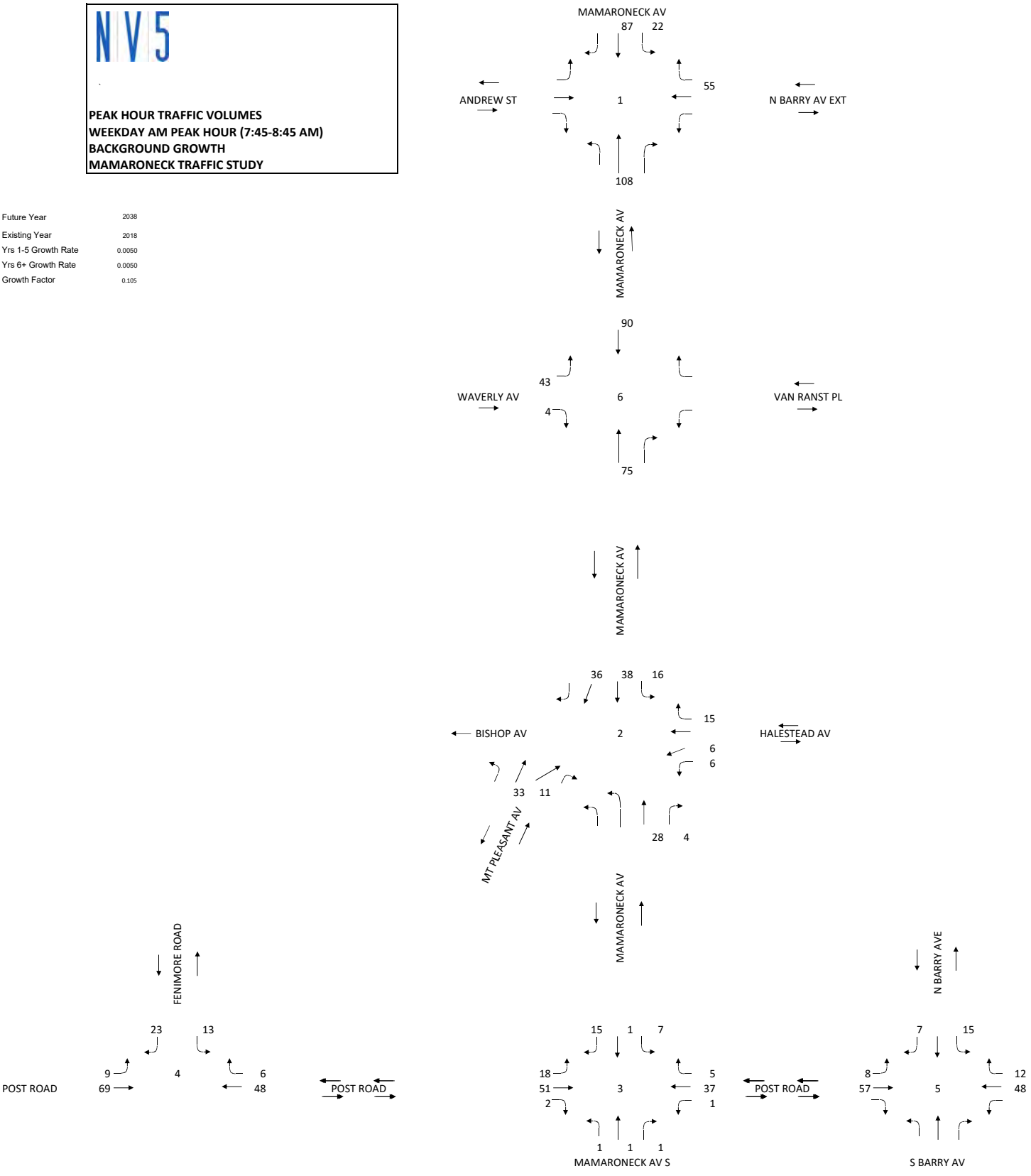


PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
805 MAMARONECK NB INCREMENT
MAMARONECK TRAFFIC STUDY



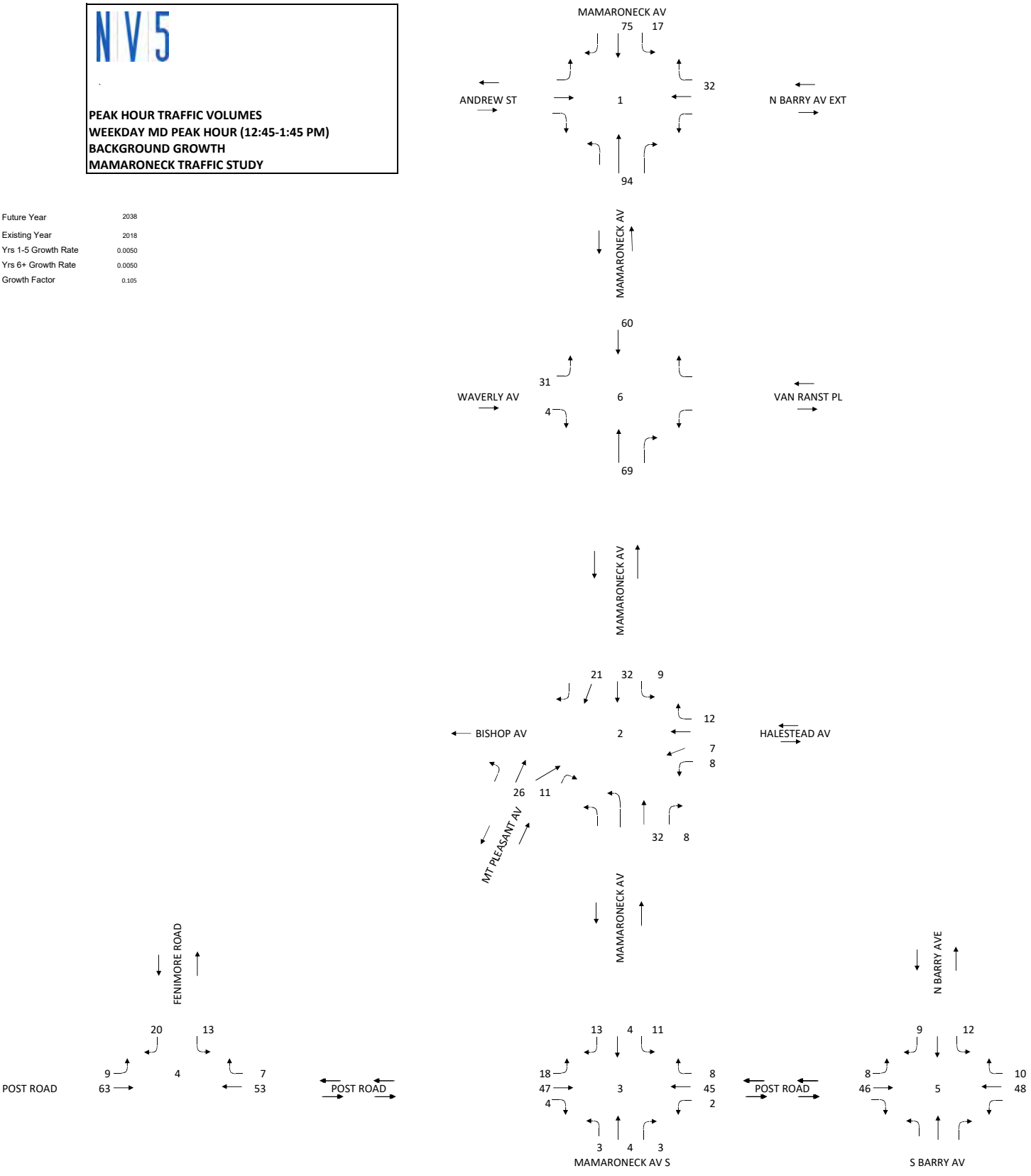
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
BACKGROUND GROWTH
MAMARONECK TRAFFIC STUDY

Future Year	2038
Existing Year	2018
Yrs 1-5 Growth Rate	0.0050
Yrs 6+ Growth Rate	0.0050
Growth Factor	0.105



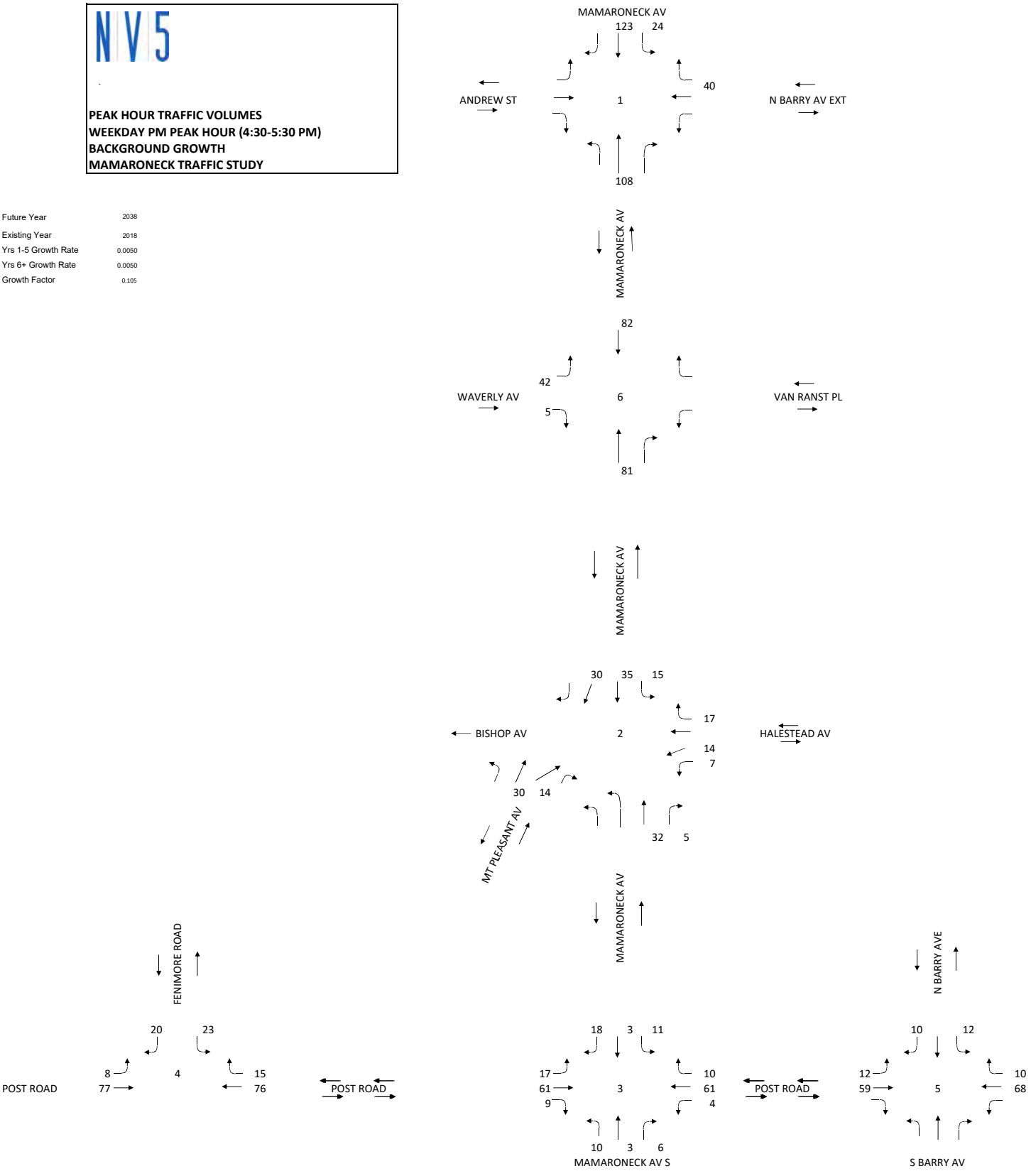
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
BACKGROUND GROWTH
MAMARONECK TRAFFIC STUDY

Future Year	2038
Existing Year	2018
Yrs 1-5 Growth Rate	0.0050
Yrs 6+ Growth Rate	0.0050
Growth Factor	0.105



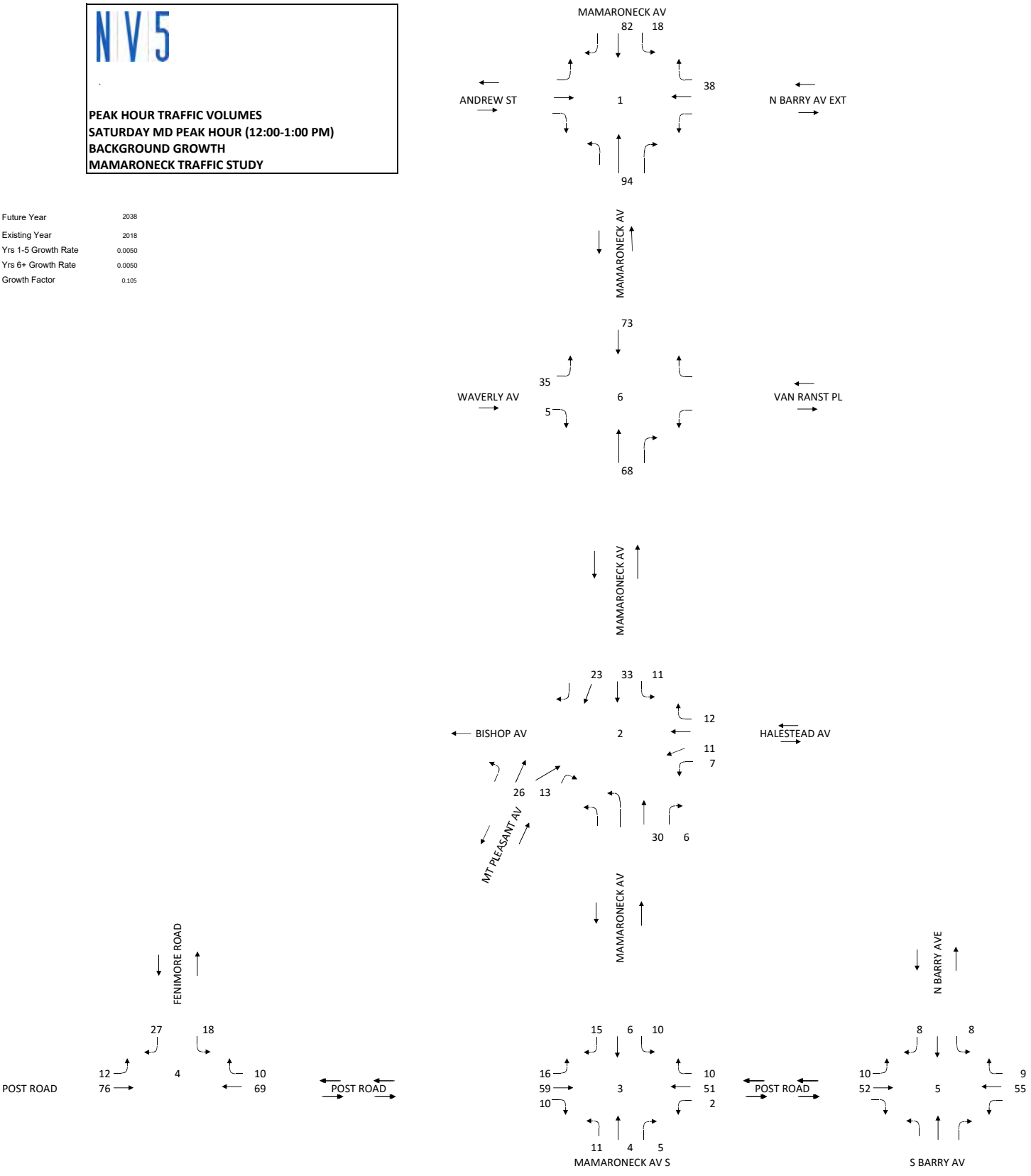
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
BACKGROUND GROWTH
MAMARONECK TRAFFIC STUDY

Future Year	2038
Existing Year	2018
Yrs 1-5 Growth Rate	0.0050
Yrs 6+ Growth Rate	0.0050
Growth Factor	0.105

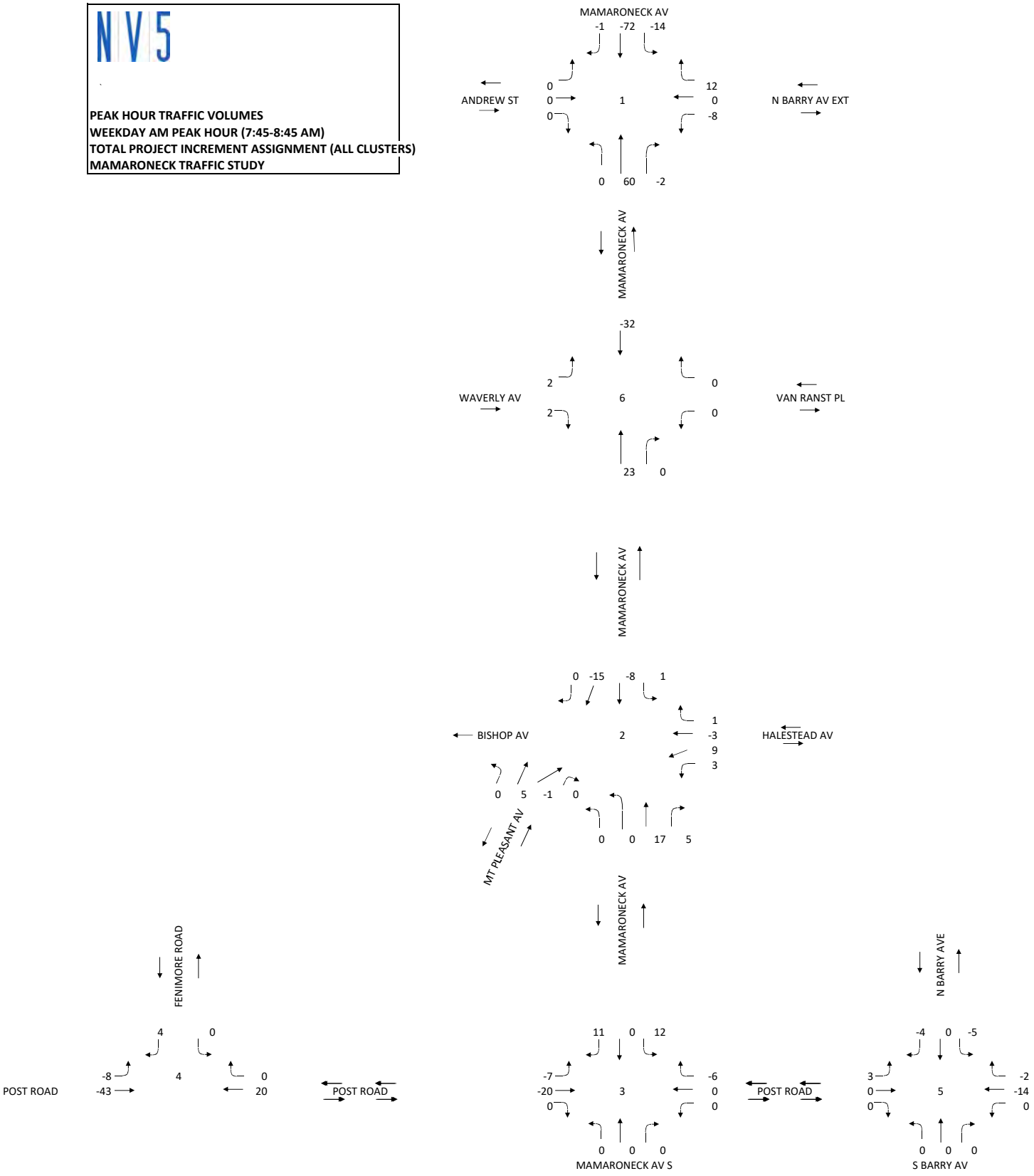


PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
BACKGROUND GROWTH
MAMARONECK TRAFFIC STUDY

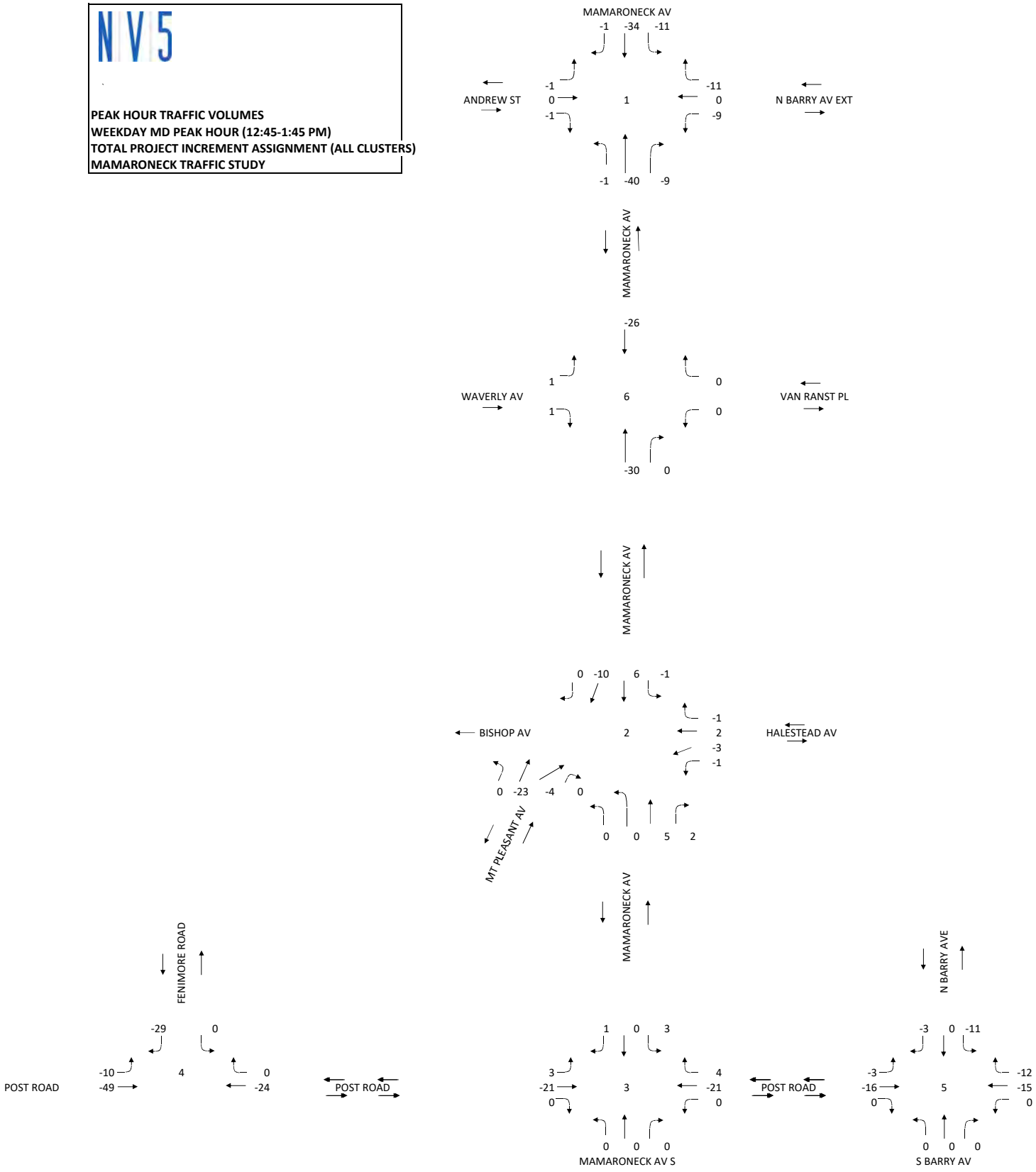
Future Year	2038
Existing Year	2018
Yrs 1-5 Growth Rate	0.0050
Yrs 6+ Growth Rate	0.0050
Growth Factor	0.105



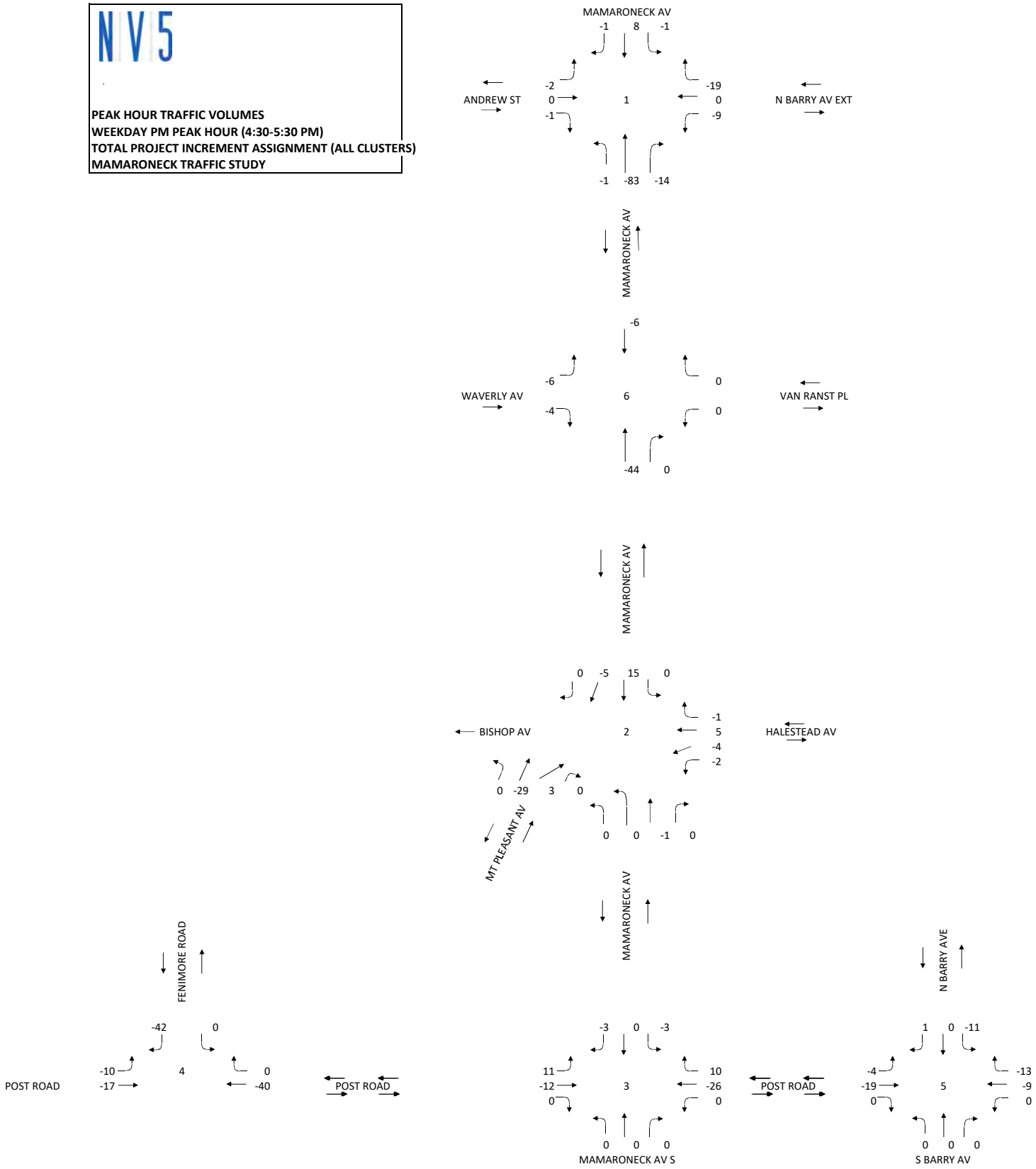
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
TOTAL PROJECT INCREMENT ASSIGNMENT (ALL CLUSTERS)
MAMARONECK TRAFFIC STUDY



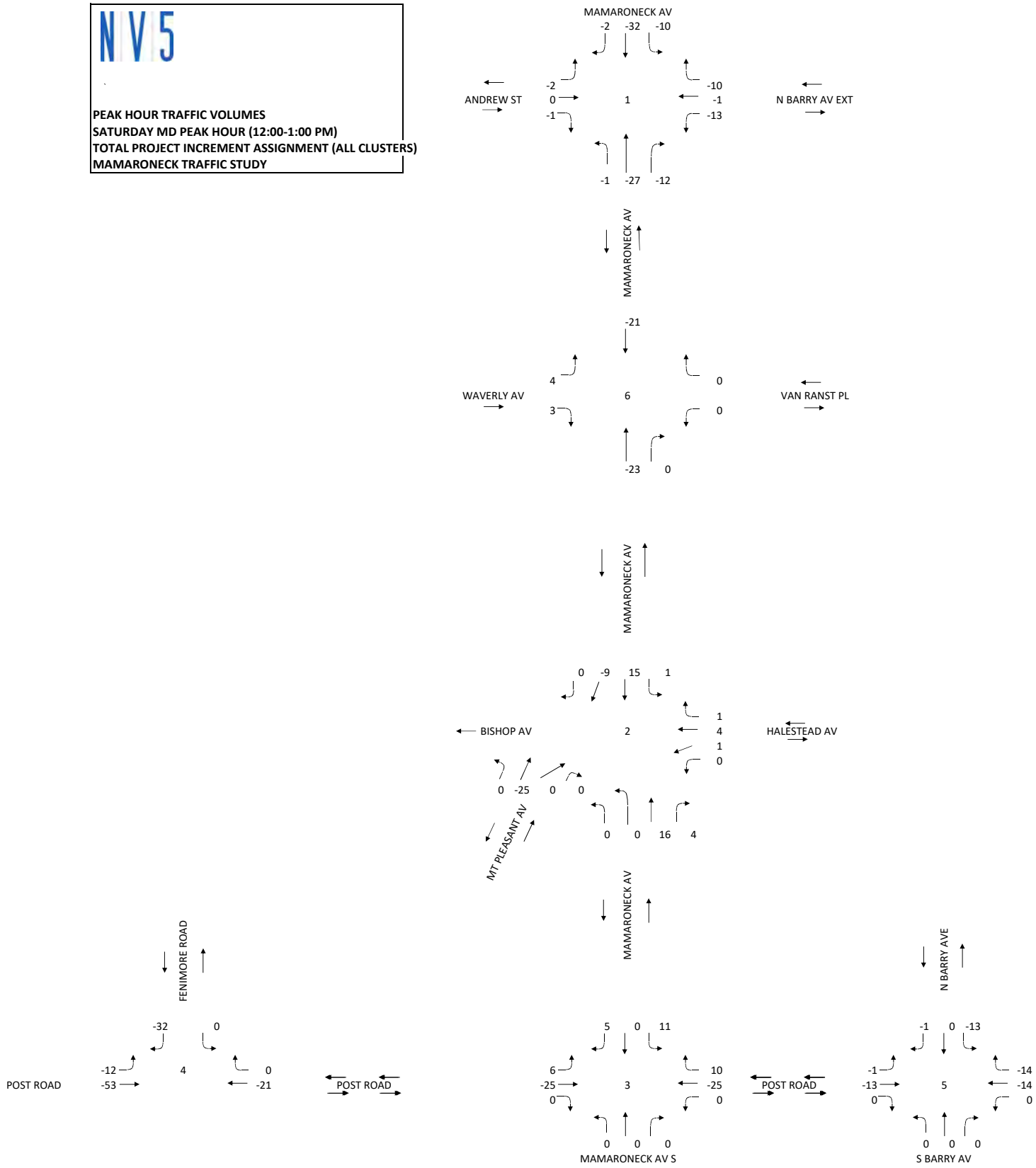
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
TOTAL PROJECT INCREMENT ASSIGNMENT (ALL CLUSTERS)
MAMARONECK TRAFFIC STUDY



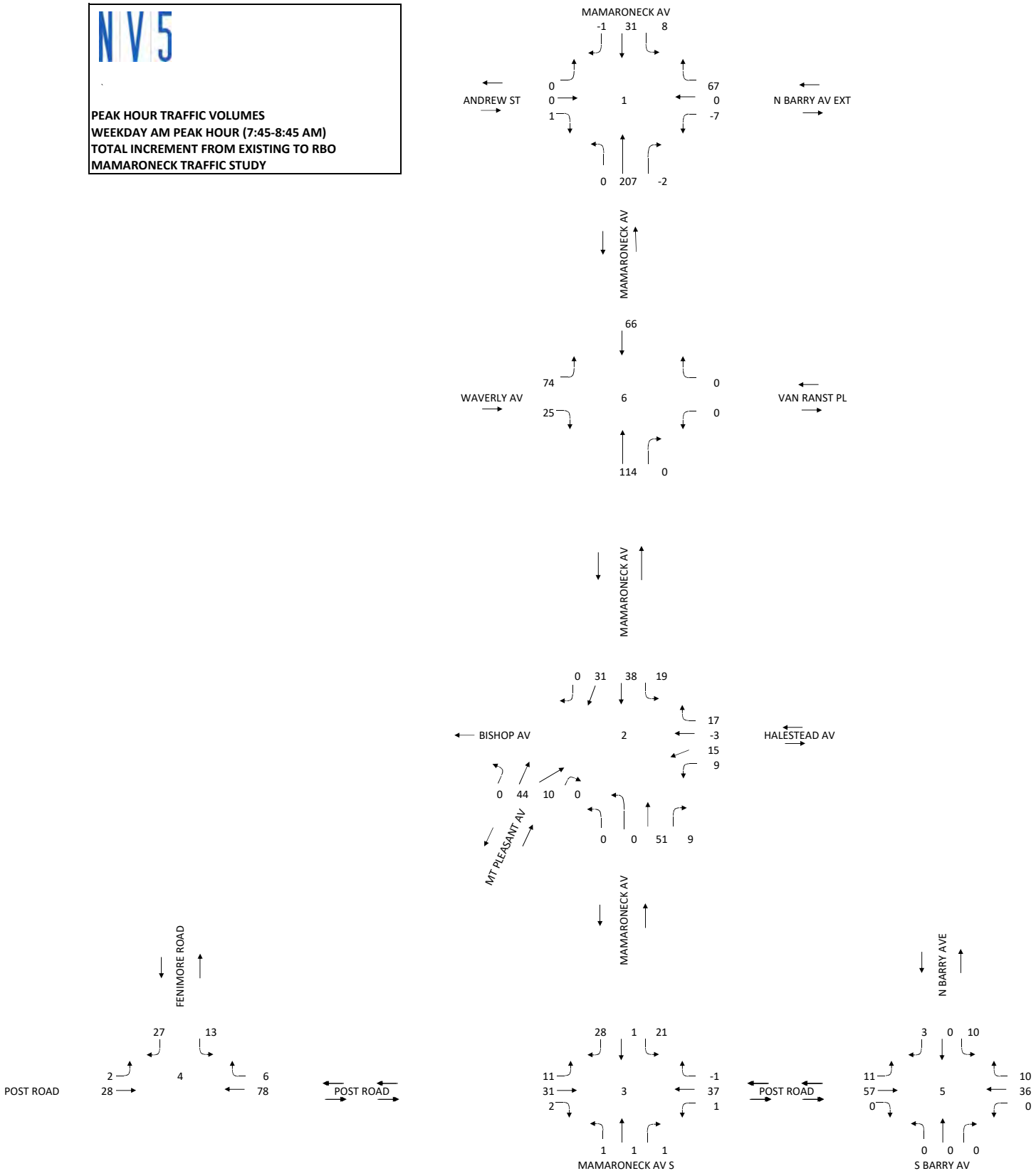
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
TOTAL PROJECT INCREMENT ASSIGNMENT (ALL CLUSTERS)
MAMARONECK TRAFFIC STUDY



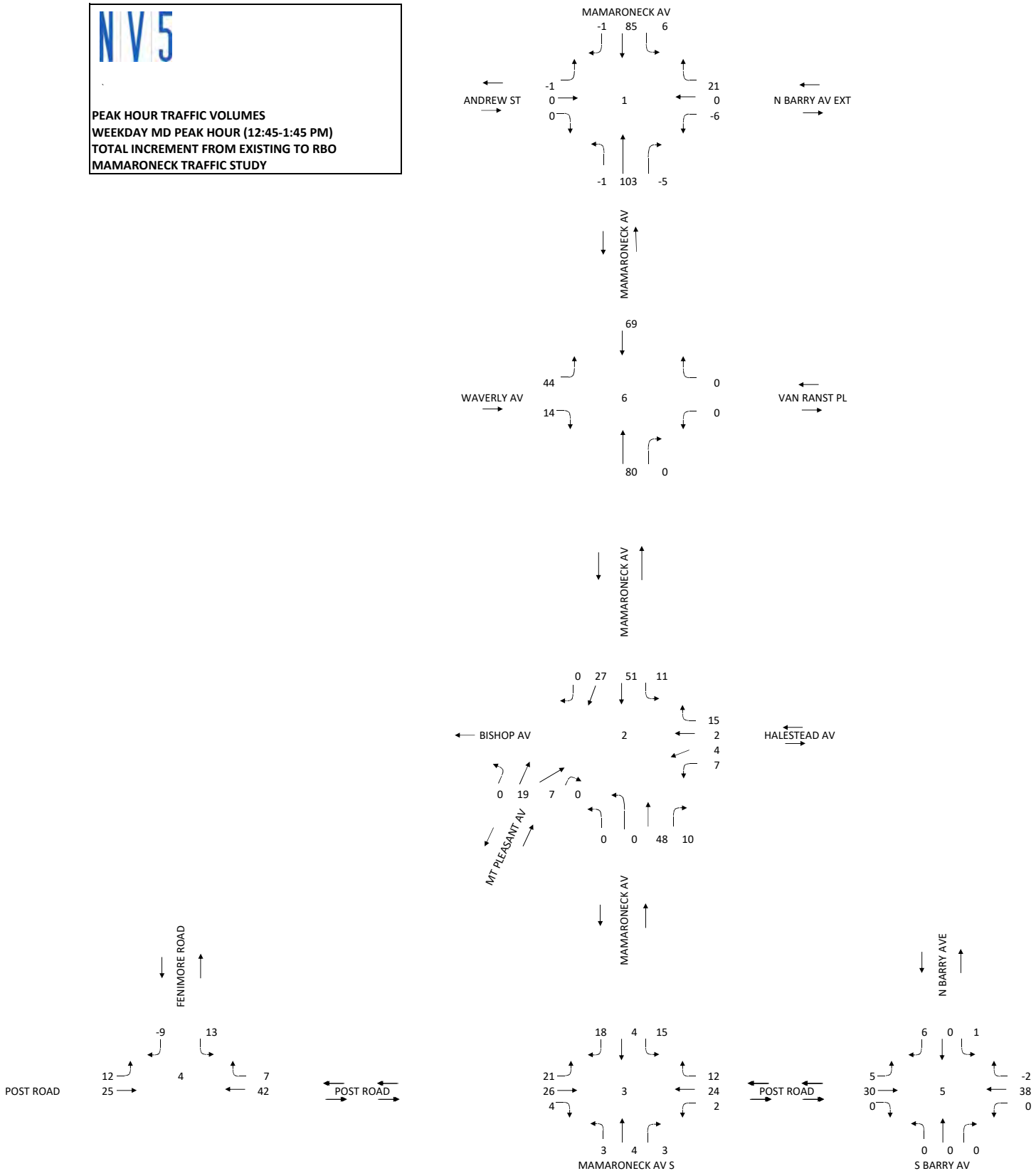
PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
TOTAL PROJECT INCREMENT ASSIGNMENT (ALL CLUSTERS)
MAMARONECK TRAFFIC STUDY



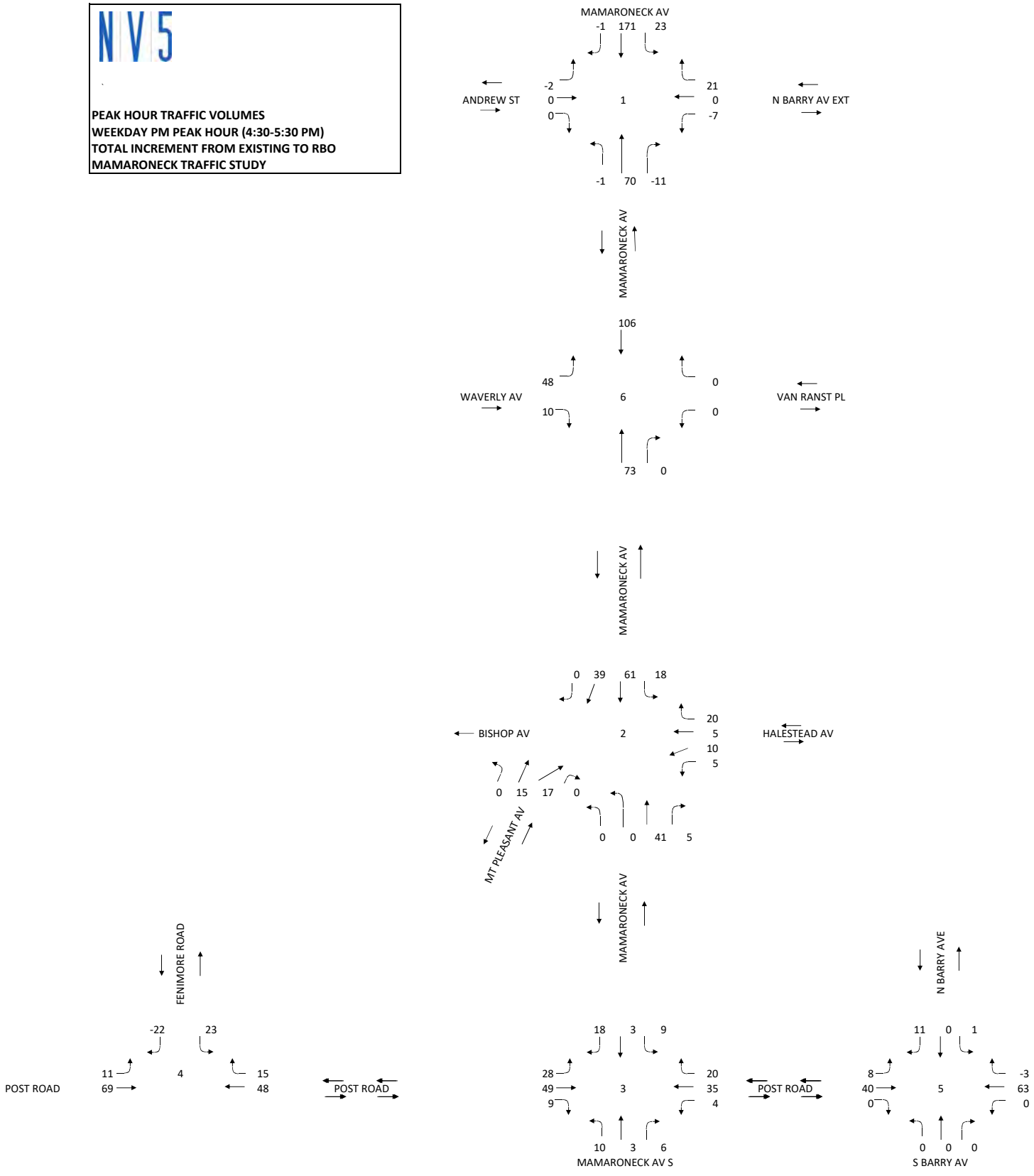
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
TOTAL INCREMENT FROM EXISTING TO RBO
MAMARONECK TRAFFIC STUDY



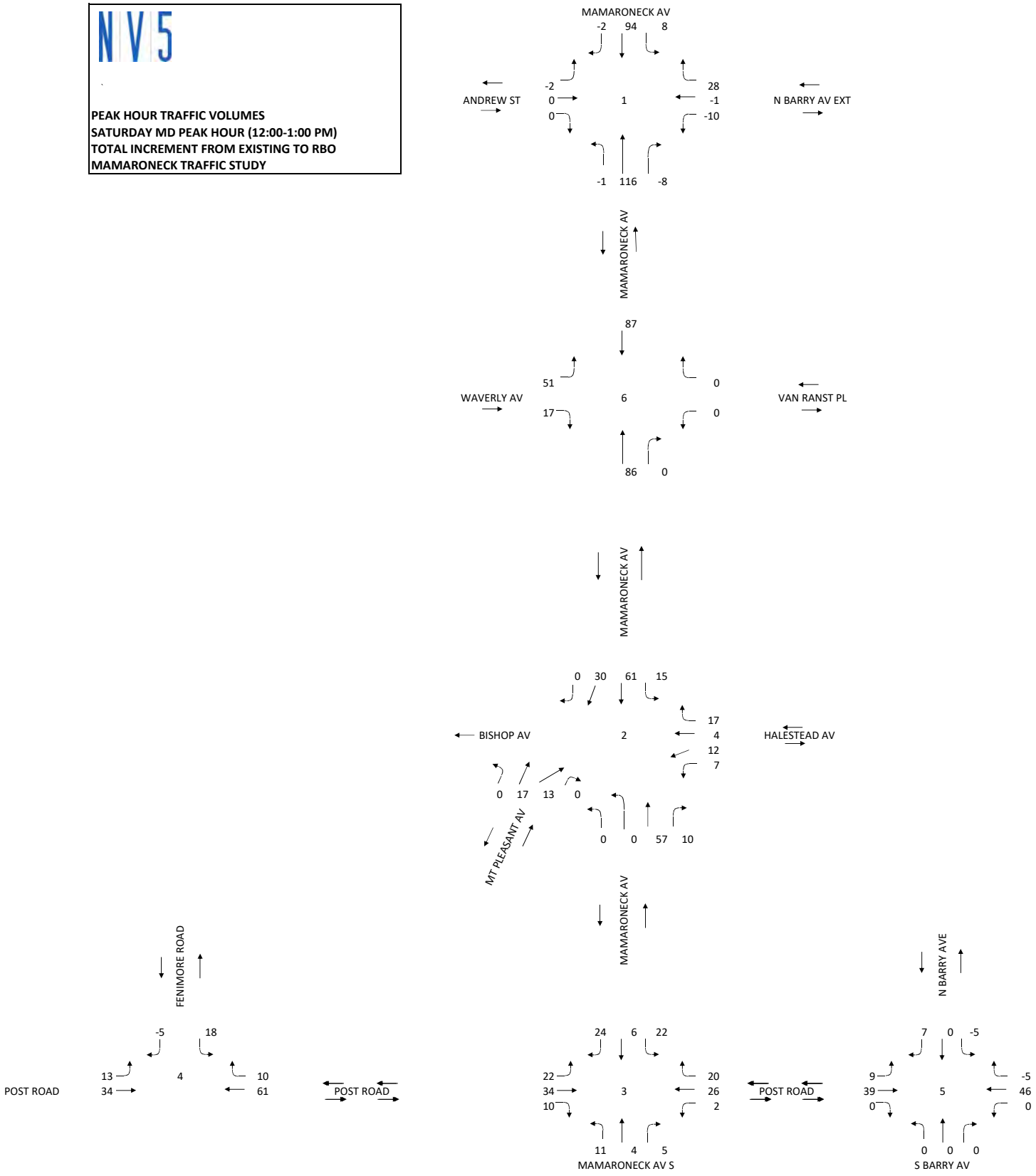
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
TOTAL INCREMENT FROM EXISTING TO RBO
MAMARONECK TRAFFIC STUDY



PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
TOTAL INCREMENT FROM EXISTING TO RBO
MAMARONECK TRAFFIC STUDY



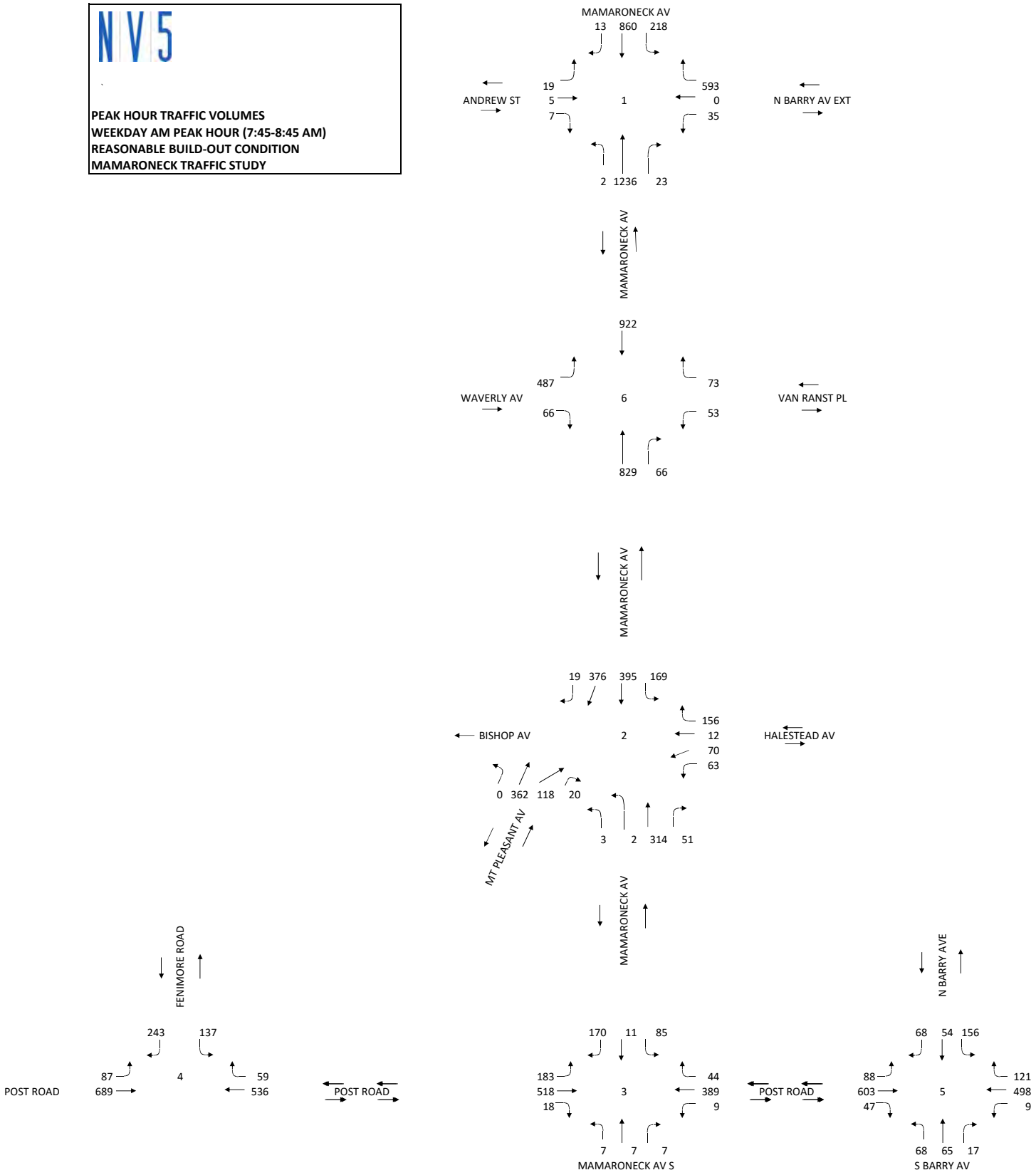
PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
TOTAL INCREMENT FROM EXISTING TO RBO
MAMARONECK TRAFFIC STUDY



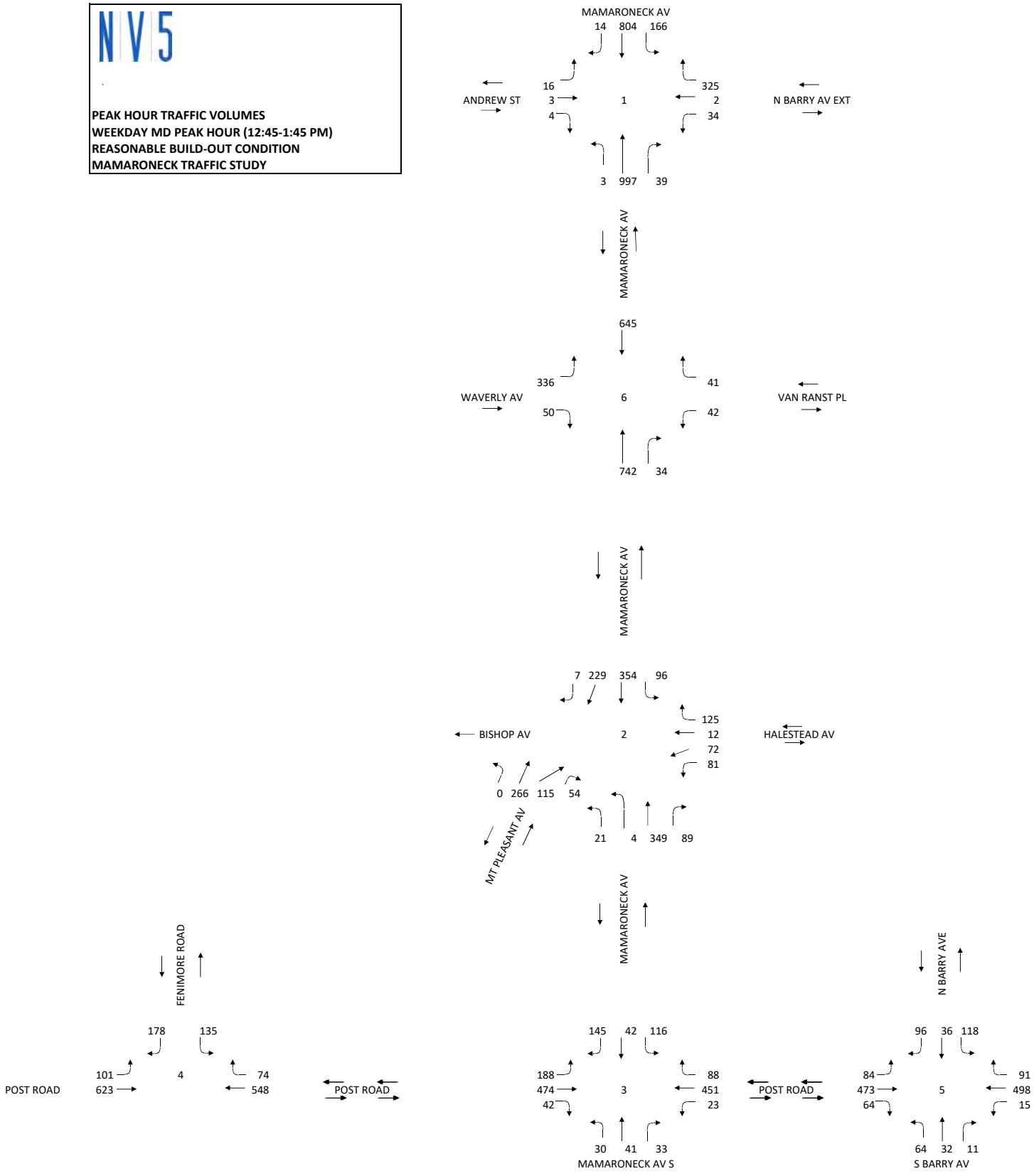
Appendix 9

2038 Reasonable Build-Out Condition Volume Flow Maps

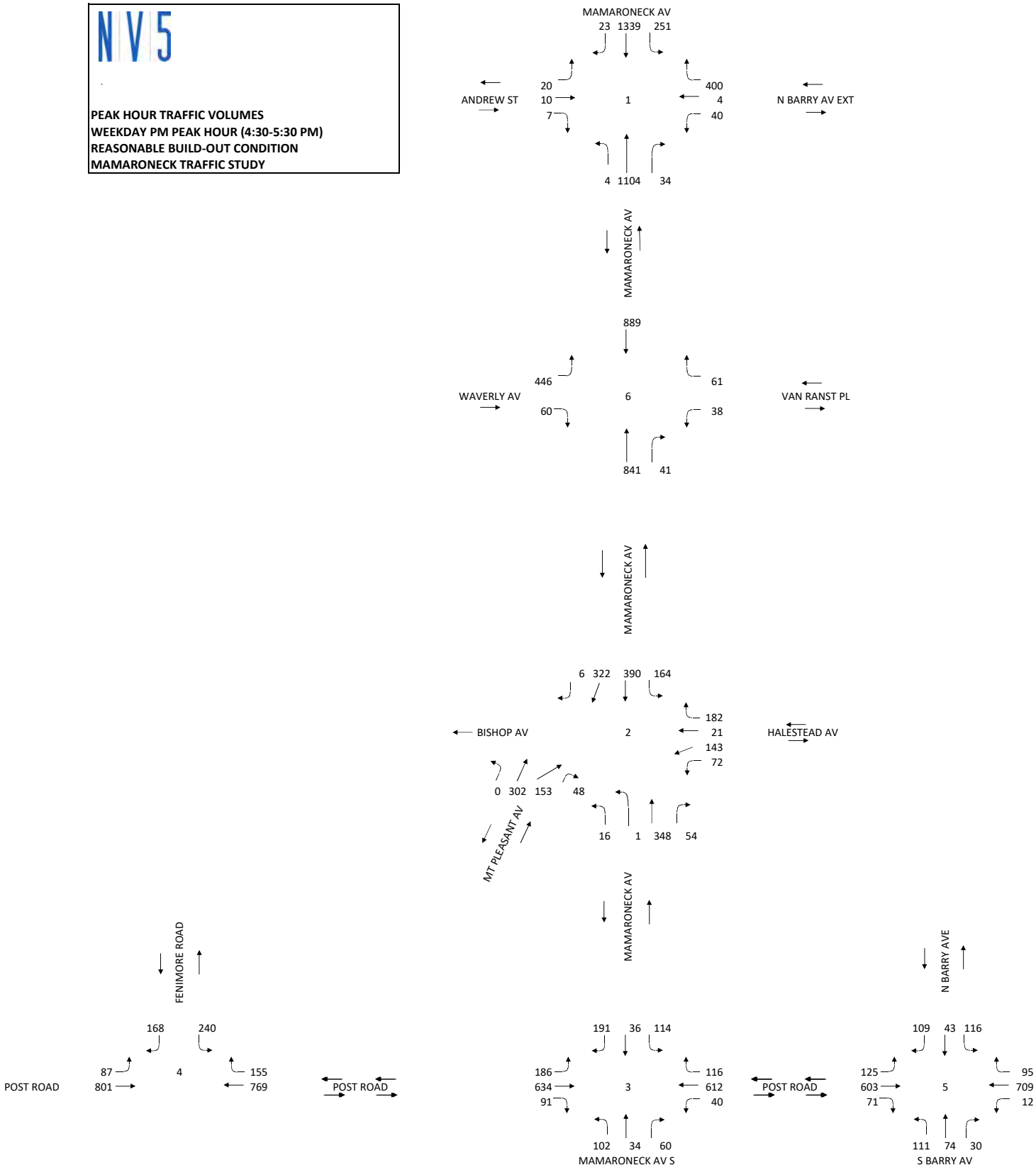
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR (7:45-8:45 AM)
REASONABLE BUILD-OUT CONDITION
MAMARONECK TRAFFIC STUDY



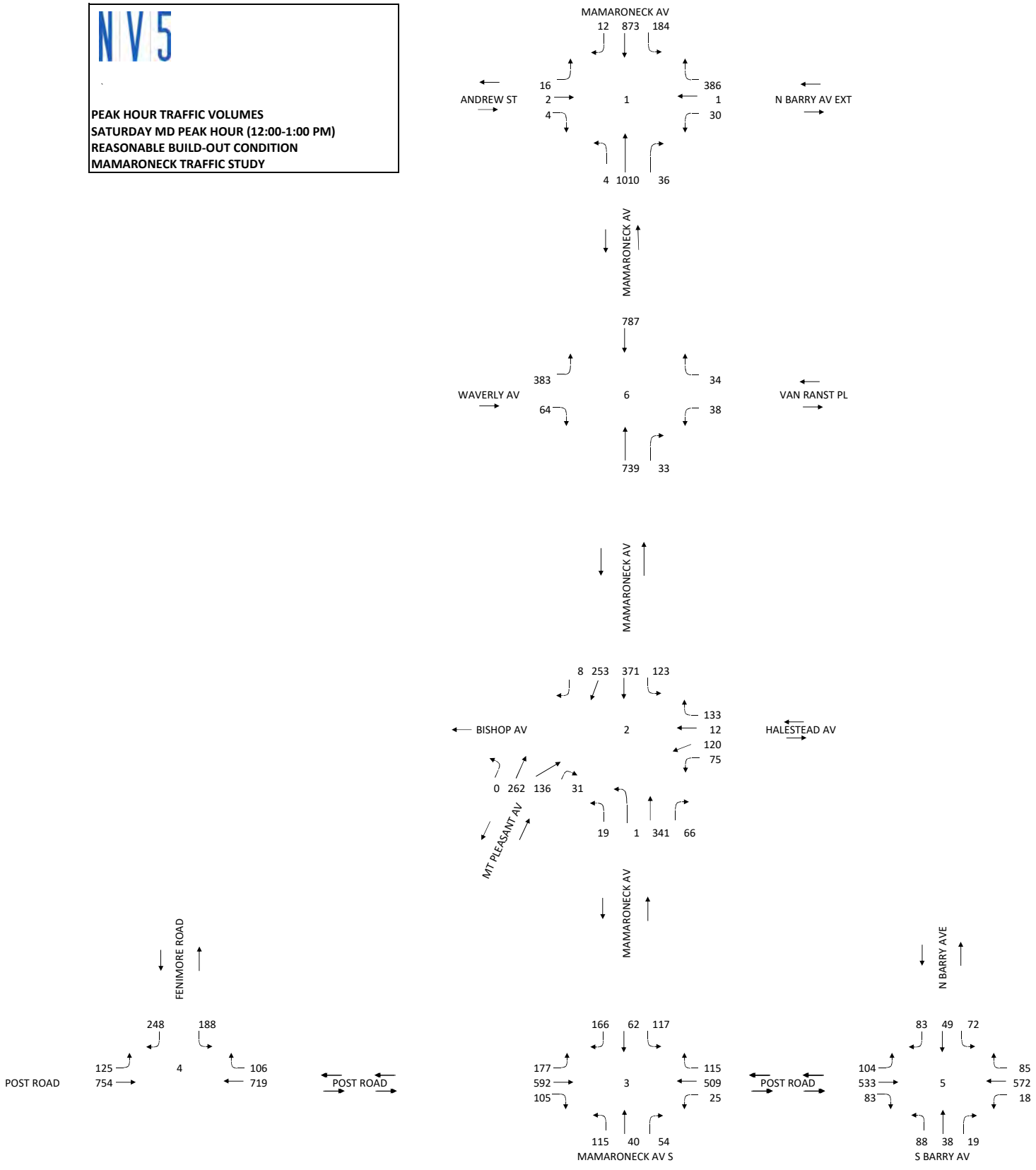
PEAK HOUR TRAFFIC VOLUMES
WEEKDAY MD PEAK HOUR (12:45-1:45 PM)
REASONABLE BUILD-OUT CONDITION
MAMARONECK TRAFFIC STUDY



PEAK HOUR TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR (4:30-5:30 PM)
REASONABLE BUILD-OUT CONDITION
MAMARONECK TRAFFIC STUDY

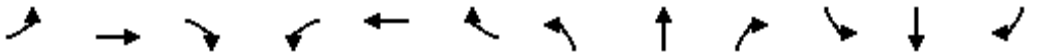


PEAK HOUR TRAFFIC VOLUMES
SATURDAY MD PEAK HOUR (12:00-1:00 PM)
REASONABLE BUILD-OUT CONDITION
MAMARONECK TRAFFIC STUDY



Appendix 10

2038 Reasonable Build-Out Condition Synchro Traffic Analysis Reports (without Improvements)

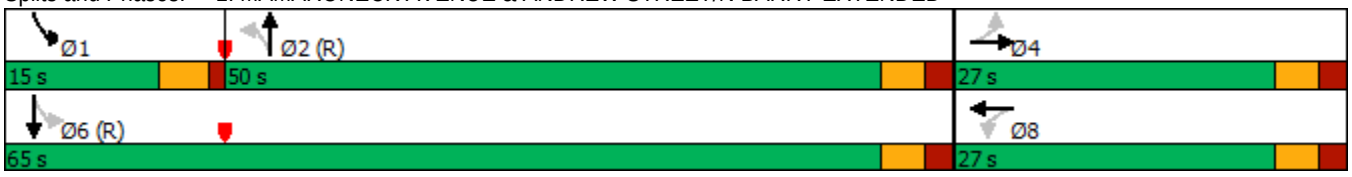


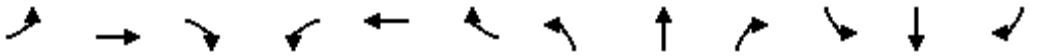
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	5	7	35	0	593	2	1236	23	218	860	13
Future Volume (vph)	19	5	7	35	0	593	2	1236	23	218	860	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00					1.00	1.00		1.00	1.00	
Frt		0.959			0.850			0.996			0.997	
Flt Protected		0.975		0.950			0.950			0.950		
Satd. Flow (prot)	0	1756	0	1604	1463	0	1685	3175	0	1662	3248	0
Flt Permitted		0.304		0.727			0.309			0.083		
Satd. Flow (perm)	0	548	0	1228	1463	0	547	3175	0	145	3248	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			230			4			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	1						7		5	5		7
Peak Hour Factor	0.79	0.63	0.50	0.70	0.90	0.93	0.50	0.95	0.69	0.82	0.95	0.70
Heavy Vehicles (%)	5%	20%	17%	5%	0%	3%	0%	9%	8%	5%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	24	8	14	50	0	638	4	1301	33	266	905	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	50	638	0	4	1334	0	266	924	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.33		0.17	1.22		0.01	0.86		0.99	0.44	
Control Delay		29.2		29.7	136.8		12.5	27.7		78.1	8.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		29.2		29.7	136.8		12.5	27.7		78.1	8.5	
LOS		C		C	F		B	C		E	A	
Approach Delay		29.2			129.0			27.6			24.1	
Approach LOS		C			F			C			C	
Queue Length 50th (ft)		24		37	~561		2	550		170	195	
Queue Length 95th (ft)		47		66	#901		6	714		#357	256	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		141		293	524		267	1555		268	2120	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.33		0.17	1.22		0.01	0.86		0.99	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 47.7		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



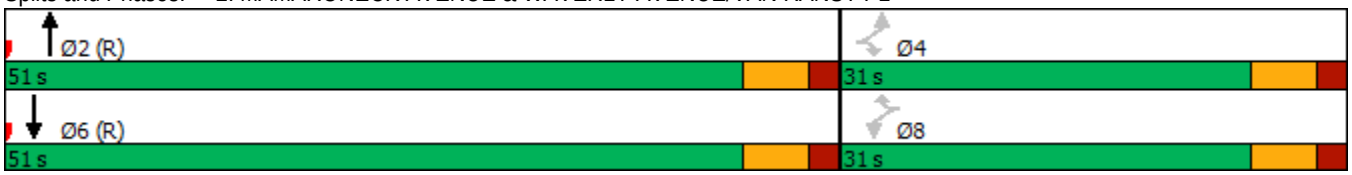


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	0	66	53	0	73	0	829	66	0	922	0
Future Volume (vph)	487	0	66	53	0	73	0	829	66	0	922	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97		0.98	0.99		0.96		1.00				
Frt			0.850			0.850		0.988				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1472	0	667	1562	0	1189	0	2823	0	0	3036	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1426	0	655	1553	0	1138	0	2823	0	0	3036	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								18				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	32		6	6		32			37			
Peak Hour Factor	0.92	0.25	0.79	0.70	0.25	0.70	0.92	0.98	0.87	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	7%	4%	0%	7%	0%	10%	3%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	529	0	84	76	0	104	0	846	76	0	1002	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	529	0	84	76	0	104	0	922	0	0	1002	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	1.22		0.42	0.16		0.30		0.59			0.60	
Control Delay	146.5		30.7	22.0		24.8		14.1			14.4	
Queue Delay	0.0		0.0	0.0		0.0		4.4			0.0	
Total Delay	146.5		30.7	22.0		24.8		18.4			14.4	
LOS	F		C	C		C		B			B	
Approach Delay		130.7			23.6			18.4			14.4	
Approach LOS		F			C			B			B	
Queue Length 50th (ft)	~541		55	45		65		242			271	
Queue Length 95th (ft)	#841		106	74		99		334			366	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	434		199	473		346		1557			1666	
Starvation Cap Reductn	0		0	0		0		545			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	1.22		0.42	0.16		0.30		0.91			0.60	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	63	70	12	156	3	2	314	51	169	395	376	19
Future Volume (vph)	63	70	12	156	3	2	314	51	169	395	376	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							0.98					
Frt			0.870				0.979				0.850	
Flt Protected		0.950					0.999		0.950			
Satd. Flow (prot)	0	1513	1177	0	0	0	2895	0	1468	1545	1335	0
Flt Permitted		0.950					0.948		0.468			
Satd. Flow (perm)	0	1513	1177	0	0	0	2747	0	723	1545	1335	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			155				23				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)								87				
Peak Hour Factor	0.79	0.92	0.47	0.92	0.92	0.50	0.90	0.88	0.77	0.88	0.86	0.92
Heavy Vehicles (%)	7%	11%	7%	2%	2%	0%	8%	5%	7%	7%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	0
Parking (#/hr)			20					10				
Adj. Flow (vph)	80	76	26	170	3	4	349	58	219	449	437	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	156	196	0	0	0	414	0	219	449	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												



Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	362	118	20
Future Volume (vph)	362	118	20
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor			
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1562	1397	0
Flt Permitted	0.950		
Satd. Flow (perm)	1562	1397	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)			16
Peak Hour Factor	0.97	0.90	0.63
Heavy Vehicles (%)	4%	5%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	373	131	32
Shared Lane Traffic (%)			
Lane Group Flow (vph)	373	163	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	60.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.65	
v/c Ratio		0.43	0.49				0.39		0.80	0.76	0.52	
Control Delay		34.1	12.9				20.9		26.6	14.9	4.9	
Queue Delay		0.0	0.5				0.0		3.3	3.2	2.1	
Total Delay		34.1	13.4				20.9		30.0	18.1	6.9	
LOS		C	B				C		C	B	A	
Approach Delay			22.6				20.9			15.8		
Approach LOS			C				C			B		
Queue Length 50th (ft)		124	30				136		28	58	41	
Queue Length 95th (ft)		220	4				201		m#43	m75	54	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		361	399				1059		275	587	879	
Starvation Cap Reductn		0	0				0		18	68	275	
Spillback Cap Reductn		0	41				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.43	0.55				0.39		0.85	0.87	0.76	

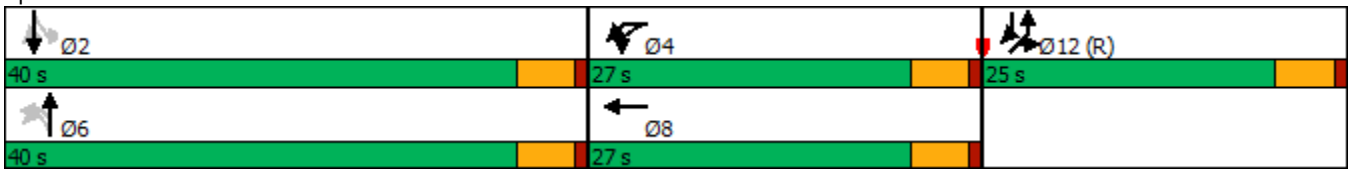
Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 98.5%		ICU Level of Service F	
Analysis Period (min) 15			

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

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

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

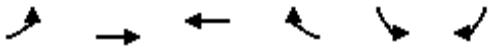
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE





Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	1.10	0.44	
Control Delay	114.5	20.1	
Queue Delay	0.0	0.0	
Total Delay	114.5	20.1	
LOS	F	C	
Approach Delay	85.8		
Approach LOS	F		
Queue Length 50th (ft)	~398	62	
Queue Length 95th (ft)	#676	158	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	339	368	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.10	0.44	

Intersection Summary

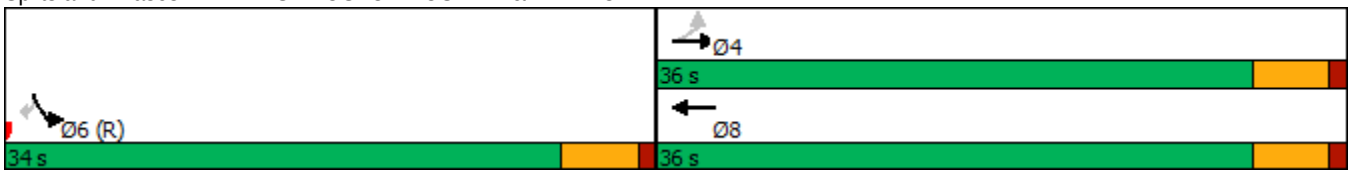


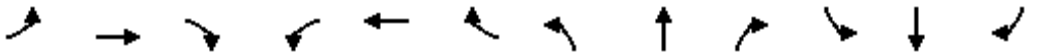
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	689	536	59	137	243
Future Volume (vph)	87	689	536	59	137	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00			
Frt			0.988			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3213	3155	0	1720	1458
Flt Permitted		0.690			0.950	
Satd. Flow (perm)	0	2229	3155	0	1720	1458
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			17			106
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	6			6		
Peak Hour Factor	0.85	0.93	0.70	0.88	0.84	0.72
Heavy Vehicles (%)	6%	4%	5%	8%	4%	6%
Parking (#/hr)				6		
Adj. Flow (vph)	102	741	766	67	163	338
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	843	833	0	163	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		0.85	0.59		0.23	0.51
Control Delay		28.2	16.6		14.4	13.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		28.2	16.6		14.4	13.3
LOS		C	B		B	B
Approach Delay		28.2	16.6		13.7	
Approach LOS		C	B		B	
Queue Length 50th (ft)		262	213		70	108
Queue Length 95th (ft)		#443	208		121	148
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		987	1406		712	666
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.85	0.59		0.23	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

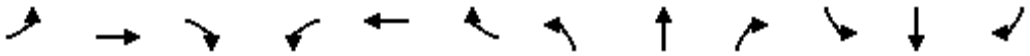
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	518	18	9	389	44	7	7	7	85	11	170
Future Volume (vph)	183	518	18	9	389	44	7	7	7	85	11	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985				0.850			0.850
Flt Protected	0.950			0.950				0.970			0.958	
Satd. Flow (prot)	1562	3053	0	1516	2853	0	0	1659	1405	0	1633	1177
Flt Permitted	0.393			0.330				0.847			0.737	
Satd. Flow (perm)	646	3053	0	527	2853	0	0	1448	1405	0	1257	1177
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		3										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.84	0.88	0.80	0.29	0.85	0.87	0.50	0.75	0.30	0.73	0.63	0.66
Heavy Vehicles (%)	4%	6%	0%	0%	5%	2%	0%	0%	0%	8%	0%	5%
Parking (#/hr)			10									10
Adj. Flow (vph)	218	589	23	31	458	51	14	9	23	116	17	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	612	0	31	509	0	0	23	23	0	133	258
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.55	0.42		0.55	0.42			0.25	0.25		0.25	0.42
v/c Ratio	0.47	0.48		0.08	0.43			0.06	0.07		0.42	0.52
Control Delay	23.8	28.6		15.6	27.9			39.6	39.6		45.5	33.4
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	23.8	28.6		15.6	27.9			39.6	39.6		45.5	33.4
LOS	C	C		B	C			D	D		D	C
Approach Delay		27.3			27.2			39.6			37.5	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	96	240		12	195			19	19		122	198
Queue Length 95th (ft)	236	441		16	351			55	21		184	297
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	467	1283		412	1197			364	353		316	494
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.47	0.48		0.08	0.43			0.06	0.07		0.42	0.52

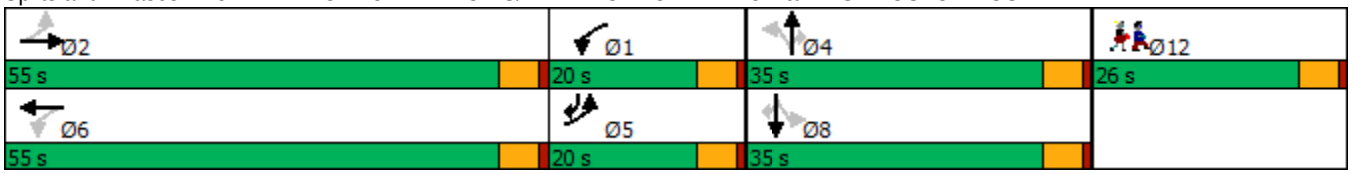
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	

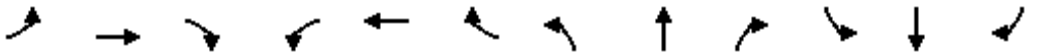
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

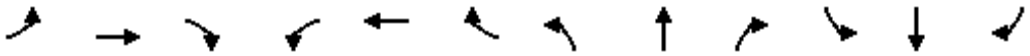
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	603	47	9	498	121	68	65	17	156	54	68
Future Volume (vph)	88	603	47	9	498	121	68	65	17	156	54	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.970			0.952			0.961	
Flt Protected		0.994			0.999		0.950				0.975	
Satd. Flow (prot)	0	3475	0	0	3559	0	1636	1688	0	0	1800	0
Flt Permitted		0.714			0.784		0.532				0.773	
Satd. Flow (perm)	0	2496	0	0	2793	0	916	1688	0	0	1427	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.80	0.91	0.69	0.56	0.85	0.82	0.77	0.77	0.43	0.94	0.84	0.74
Heavy Vehicles (%)	4%	6%	2%	0%	2%	0%	3%	0%	0%	3%	6%	6%
Adj. Flow (vph)	110	663	68	16	586	148	88	84	40	166	64	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	841	0	0	750	0	88	124	0	0	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		37.3			33.4		36.5	36.5			24.5	
Actuated g/C Ratio		0.37			0.33		0.36	0.36			0.24	
v/c Ratio		0.83			0.77		0.22	0.21			0.94	
Control Delay		40.2			37.4		25.7	25.4			77.1	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		40.2			37.4		25.7	25.4			77.1	
LOS		D			D		C	C			E	
Approach Delay		40.2			37.4			25.5			77.1	
Approach LOS		D			D			C			E	
Queue Length 50th (ft)		382			369		61	88			347	
Queue Length 95th (ft)		#708			487		120	160			#688	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1106			1174		399	677			343	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.76			0.64		0.22	0.18			0.94	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 102			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 43.4		Intersection LOS: D	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

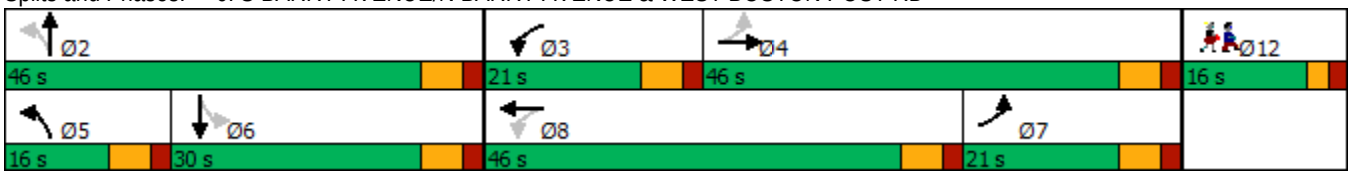
Intersection Summary

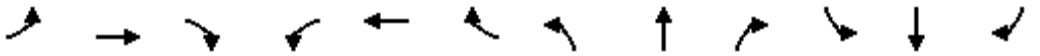
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & WEST BOSTON POST RD



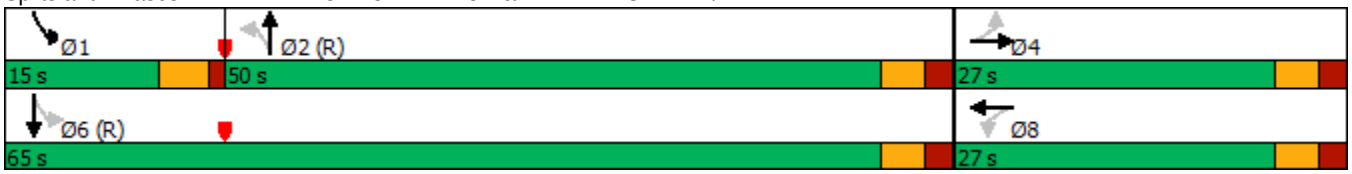


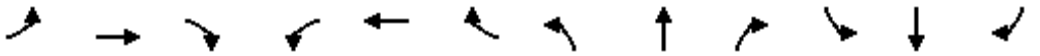
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	3	4	34	2	325	3	997	39	166	804	14
Future Volume (vph)	16	3	4	34	2	325	3	997	39	166	804	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Frt		0.972			0.853			0.993			0.996	
Flt Protected		0.971		0.950			0.950			0.950		
Satd. Flow (prot)	0	1837	0	1604	1445	0	1685	3225	0	1711	3330	0
Flt Permitted		0.596		0.732			0.323			0.145		
Satd. Flow (perm)	0	1126	0	1233	1445	0	571	3225	0	261	3330	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			256			8			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	4		2	2		4	9		2	2		9
Peak Hour Factor	0.71	0.38	0.50	0.77	0.25	0.94	0.50	0.95	0.73	0.82	0.94	0.54
Heavy Vehicles (%)	12%	0%	0%	5%	0%	3%	0%	7%	5%	2%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	23	8	8	44	8	346	6	1049	53	202	855	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	44	354	0	6	1102	0	202	881	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.14		0.15	0.66		0.02	0.70		0.60	0.41	
Control Delay		24.8		29.3	15.8		12.7	21.0		15.8	8.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8		29.3	15.8		12.7	21.0		15.8	8.2	
LOS		C		C	B		B	C		B	A	
Approach Delay		24.8			17.3			21.0			9.6	
Approach LOS		C			B			C			A	
Queue Length 50th (ft)		23		32	75		3	398		65	181	
Queue Length 95th (ft)		23		66	0		8	518		113	236	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		275		294	540		279	1581		337	2174	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.15	0.66		0.02	0.70		0.60	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.8		Intersection LOS: B	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



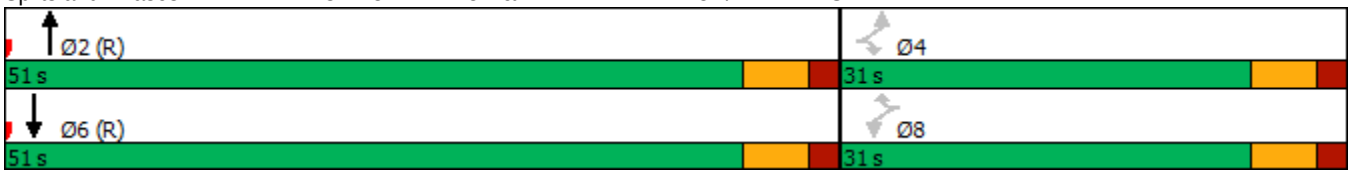


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	0	50	42	0	41	0	742	34	0	645	0
Future Volume (vph)	336	0	50	42	0	41	0	742	34	0	645	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.96		0.98	0.99		0.95		1.00				
Frt			0.850			0.850		0.992				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	714	1624	0	1247	0	2914	0	0	3094	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1441	0	701	1613	0	1183	0	2914	0	0	3094	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								11				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	41		7	7		41			37			
Peak Hour Factor	0.87	0.25	0.75	0.53	0.25	0.79	0.92	0.92	0.77	0.92	0.93	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	2%	0%	7%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	386	0	67	79	0	52	0	807	44	0	694	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	386	0	67	79	0	52	0	851	0	0	694	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	0.88		0.31	0.16		0.14		0.53			0.41	
Control Delay	50.6		27.0	22.0		22.1		13.1			11.7	
Queue Delay	0.0		0.0	0.0		0.0		2.7			0.0	
Total Delay	50.6		27.0	22.0		22.1		15.8			11.7	
LOS	D		C	C		C		B			B	
Approach Delay		47.1			22.1			15.8			11.7	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	299		42	47		31		214			162	
Queue Length 95th (ft)	#524		80	56		64		294			223	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	439		213	491		360		1604			1697	
Starvation Cap Reductn	0		0	0		0		608			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.88		0.31	0.16		0.14		0.85			0.41	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	81	72	12	125	21	4	349	89	96	354	229	7
Future Volume (vph)	81	72	12	125	21	4	349	89	96	354	229	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92	0.97				0.98		0.97		0.91	
Frt			0.864				0.969				0.850	
Flt Protected		0.950					0.997		0.950			
Satd. Flow (prot)	0	1565	1111	0	0	0	3009	0	1496	1589	1373	0
Flt Permitted		0.950					0.890		0.377			
Satd. Flow (perm)	0	1445	1111	0	0	0	2675	0	574	1589	1244	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			140				41				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	35			18	39	51		50	50		39	51
Peak Hour Factor	0.88	0.71	0.83	0.89	0.75	0.50	0.89	0.79	0.82	0.88	0.89	0.58
Heavy Vehicles (%)	8%	3%	0%	5%	10%	25%	1%	3%	5%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	92	101	14	140	28	8	392	113	117	402	257	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	154	0	0	0	541	0	117	402	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

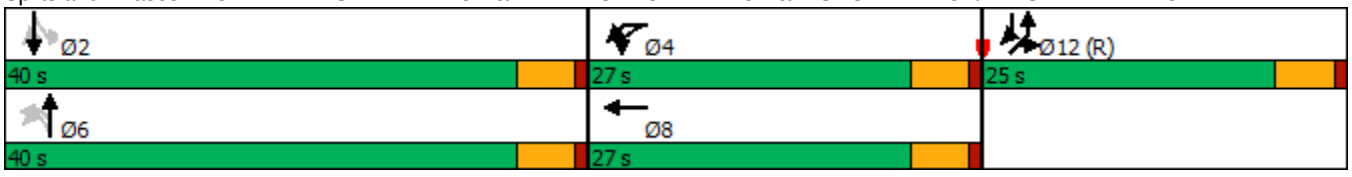


Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	266	115	54
Future Volume (vph)	266	115	54
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1562	1407	0
Flt Permitted	0.950		
Satd. Flow (perm)	1535	1407	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	18		35
Peak Hour Factor	0.87	0.87	0.71
Heavy Vehicles (%)	4%	4%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	306	132	76
Shared Lane Traffic (%)			
Lane Group Flow (vph)	306	208	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.52	0.41				0.52		0.54	0.67	0.34	
Control Delay		36.1	10.3				22.4		21.3	18.3	5.1	
Queue Delay		0.0	0.0				0.0		1.0	0.1	0.7	
Total Delay		36.1	10.3				22.4		22.2	18.4	5.9	
LOS		D	B				C		C	B	A	
Approach Delay			24.7				22.4			14.7		
Approach LOS			C				C			B		
Queue Length 50th (ft)		157	10				185		32	111	49	
Queue Length 95th (ft)		201	73				261		51	148	75	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		374	372				1043		218	604	781	
Starvation Cap Reductn		0	0				0		19	5	257	
Spillback Cap Reductn		0	0				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.52	0.41				0.52		0.59	0.67	0.51	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 26.4		Intersection LOS: C	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

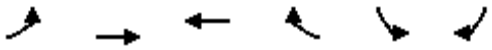
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



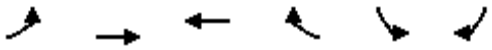


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.90	0.56	
Control Delay	66.4	25.6	
Queue Delay	0.0	0.0	
Total Delay	66.4	25.6	
LOS	E	C	
Approach Delay	49.9		
Approach LOS	D		
Queue Length 50th (ft)	279	101	
Queue Length 95th (ft)	#495	206	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	339	370	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.90	0.56	

Intersection Summary



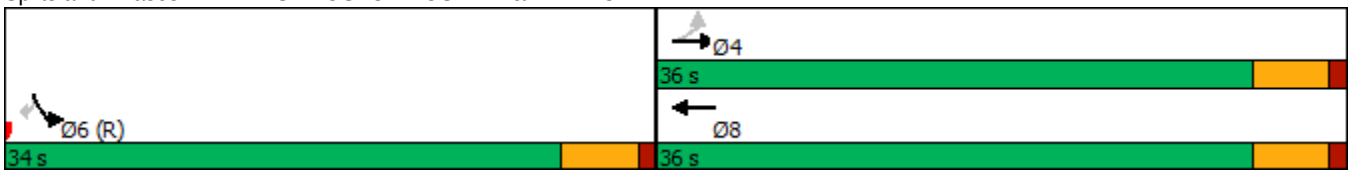
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	101	623	548	74	135	178
Future Volume (vph)	101	623	548	74	135	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00		0.99	0.98
Frt			0.983			0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	3231	3139	0	1771	1515
Flt Permitted		0.672			0.950	
Satd. Flow (perm)	0	2187	3139	0	1756	1484
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			25			146
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	8			8	8	8
Peak Hour Factor	0.82	0.91	0.83	0.88	0.73	0.90
Heavy Vehicles (%)	6%	3%	5%	6%	1%	2%
Parking (#/hr)				6		
Adj. Flow (vph)	123	685	660	84	185	198
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	808	744	0	185	198
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		0.83	0.53		0.25	0.28
Control Delay		27.0	15.4		14.6	5.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		27.0	15.4		14.6	5.6
LOS		C	B		B	A
Approach Delay		27.0	15.4		9.9	
Approach LOS		C	B		A	
Queue Length 50th (ft)		247	181		80	21
Queue Length 95th (ft)		#421	230		114	81
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		968	1404		733	700
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.83	0.53		0.25	0.28

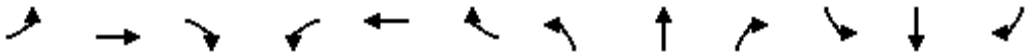
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	474	42	23	451	88	30	41	33	116	42	145
Future Volume (vph)	188	474	42	23	451	88	30	41	33	116	42	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.971				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.966	
Satd. Flow (prot)	1608	3116	0	1516	2825	0	0	1667	1364	0	1711	1199
Flt Permitted	0.311			0.342				0.646			0.677	
Satd. Flow (perm)	527	3116	0	546	2825	0	0	1105	1364	0	1199	1199
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		10										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.73	0.89	0.73	0.66	0.87	0.70	0.48	0.71	0.54	0.81	0.68	0.88
Heavy Vehicles (%)	1%	3%	0%	0%	5%	1%	0%	0%	3%	3%	3%	3%
Parking (#/hr)			10									10
Adj. Flow (vph)	258	533	58	35	518	126	63	58	61	143	62	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	591	0	35	644	0	0	121	61	0	205	165
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.55	0.42		0.55	0.42			0.25	0.25		0.25	0.42
v/c Ratio	0.61	0.45		0.08	0.54			0.44	0.18		0.68	0.33
Control Delay	32.4	27.7		15.6	30.3			46.8	40.7		55.8	28.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	32.4	27.7		15.6	30.3			46.8	40.7		55.8	28.6
LOS	C	C		B	C			D	D		E	C
Approach Delay		29.1			29.5			44.7			43.6	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	116	226		14	263			112	52		203	115
Queue Length 95th (ft)	234	423		39	475			196	81		303	268
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	423	1313		419	1186			278	343		302	503
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.61	0.45		0.08	0.54			0.44	0.18		0.68	0.33

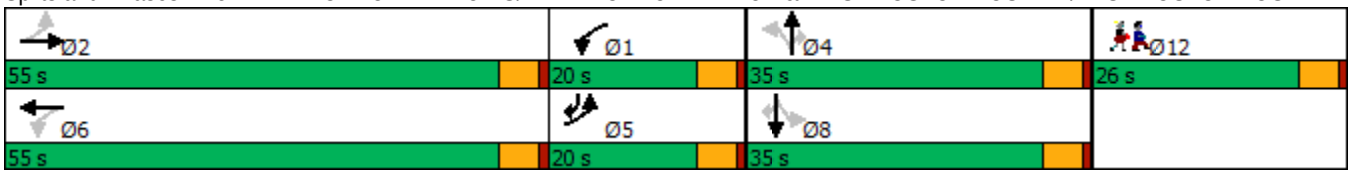
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 33.2		Intersection LOS: C	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	

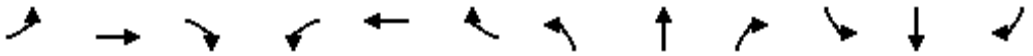
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	16
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

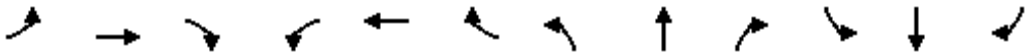
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	473	64	15	498	91	64	32	11	118	36	96
Future Volume (vph)	84	473	64	15	498	91	64	32	11	118	36	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.976			0.960			0.943	
Flt Protected		0.993			0.998		0.950				0.979	
Satd. Flow (prot)	0	3527	0	0	3523	0	1589	1624	0	0	1806	0
Flt Permitted		0.741			0.767		0.478				0.835	
Satd. Flow (perm)	0	2632	0	0	2707	0	800	1624	0	0	1541	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.86	0.89	0.76	0.63	0.90	0.83	0.76	0.73	0.69	0.89	0.75	0.73
Heavy Vehicles (%)	4%	3%	3%	7%	3%	3%	6%	0%	18%	3%	0%	3%
Adj. Flow (vph)	98	531	84	24	553	110	84	44	16	133	48	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	713	0	0	687	0	84	60	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.0%	35.1%		16.0%	35.1%		12.2%	35.1%		22.9%	22.9%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		32.0			32.0		36.7	36.7			24.7	
Actuated g/C Ratio		0.33			0.33		0.38	0.38			0.25	
v/c Ratio		0.77			0.72		0.22	0.10			0.80	
Control Delay		37.5			34.1		24.4	23.2			54.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		37.5			34.1		24.4	23.2			54.2	
LOS		D			C		C	C			D	
Approach Delay		37.5			34.1			23.9			54.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		308			294		51	36			296	
Queue Length 95th (ft)		501			487		117	85			#536	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1181			1207		385	688			391	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.60			0.57		0.22	0.09			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 131			
Actuated Cycle Length: 97.3			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 38.0		Intersection LOS: D	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	14%
Maximum Green (s)	12.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

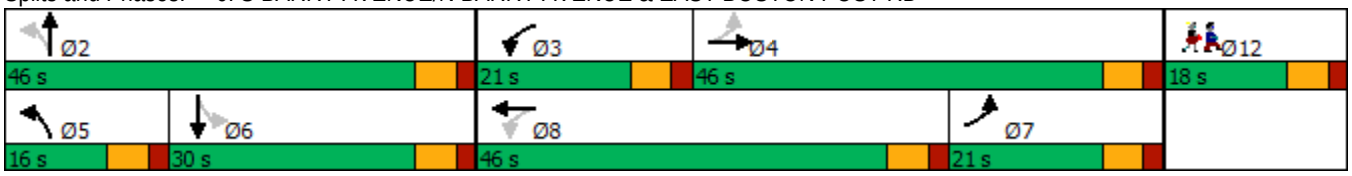
Intersection Summary

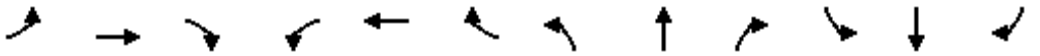
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



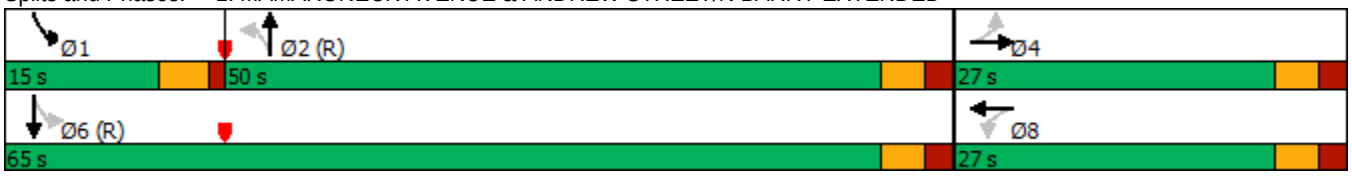


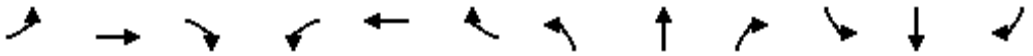
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	7	40	4	400	4	1104	34	251	1339	23
Future Volume (vph)	20	10	7	40	4	400	4	1104	34	251	1339	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99			1.00	1.00		1.00	1.00	
Frt		0.962			0.853			0.994			0.997	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1958	0	1589	1498	0	1685	3352	0	1678	3436	0
Flt Permitted		0.420		0.720			0.167			0.115		
Satd. Flow (perm)	0	840	0	1198	1498	0	296	3352	0	203	3436	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			242			6			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			5	5			15		5	5		15
Peak Hour Factor	0.79	0.63	0.44	0.73	0.50	0.92	0.63	0.95	0.75	0.76	0.94	0.75
Heavy Vehicles (%)	0%	0%	0%	6%	0%	1%	0%	3%	2%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	25	16	16	55	8	435	6	1162	45	330	1424	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	55	443	0	6	1207	0	330	1455	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.27		0.19	0.82		0.04	0.74		1.10	0.65	
Control Delay		25.9		30.1	28.7		13.5	22.0		101.8	11.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.9		30.1	28.7		13.5	22.0		101.8	11.3	
LOS		C		C	C		B	C		F	B	
Approach Delay		25.9			28.8			22.0			28.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		31		41	180		3	450		~239	382	
Queue Length 95th (ft)		54		74	67		10	580		#365	488	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		213		286	542		144	1642		301	2242	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.27		0.19	0.82		0.04	0.74		1.10	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



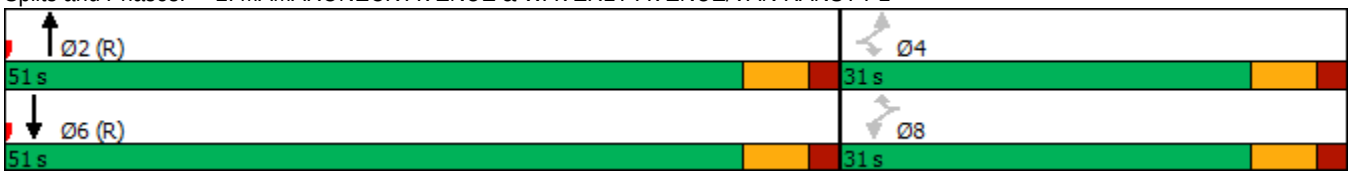


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	446	0	60	38	0	61	0	841	41	0	889	0
Future Volume (vph)	446	0	60	38	0	61	0	841	41	0	889	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95		0.99	1.00		0.94		1.00				
Frt			0.850			0.850		0.990				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1577	0	1272	0	2984	0	0	3124	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1432	0	691	1576	0	1199	0	2984	0	0	3124	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								14				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	47		1	1		47			51			
Peak Hour Factor	0.94	0.25	0.83	0.68	0.25	0.80	0.92	0.88	0.60	0.92	0.98	0.92
Heavy Vehicles (%)	1%	0%	2%	3%	0%	0%	0%	4%	0%	0%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	474	0	72	56	0	76	0	956	68	0	907	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	474	0	72	56	0	76	0	1024	0	0	907	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	23.0		23.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	1.09		0.34	0.12		0.21		0.62			0.53	
Control Delay	98.8		27.9	21.4		23.1		14.6			13.2	
Queue Delay	0.0		0.0	0.0		0.0		8.8			0.0	
Total Delay	98.8		27.9	21.4		23.1		23.4			13.2	
LOS	F		C	C		C		C			B	
Approach Delay		89.5			22.4			23.4			13.2	
Approach LOS		F			C			C			B	
Queue Length 50th (ft)	~444		46	33		46		278			232	
Queue Length 95th (ft)	#731		96	57		88		363			313	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	436		210	480		365		1643			1714	
Starvation Cap Reductn	0		0	0		0		585			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	1.09		0.34	0.12		0.21		0.97			0.53	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 33.6		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	72	143	21	182	16	1	348	54	164	390	322	6
Future Volume (vph)	72	143	21	182	16	1	348	54	164	390	322	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96				0.98		0.95		0.88	
Frt			0.874				0.979				0.850	
Flt Protected		0.950					0.997		0.950			
Satd. Flow (prot)	0	1606	1127	0	0	0	3047	0	1510	1637	1399	0
Flt Permitted		0.950					0.893		0.385			
Satd. Flow (perm)	0	1606	1127	0	0	0	2718	0	582	1637	1236	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			140				23				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)				28	48	70		72	72		48	70
Peak Hour Factor	0.92	0.83	0.57	0.94	0.57	0.50	0.82	0.72	0.83	0.89	0.86	0.38
Heavy Vehicles (%)	2%	3%	0%	4%	0%	0%	2%	4%	4%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	78	172	37	194	28	2	424	75	198	438	374	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	231	0	0	0	529	0	198	438	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												



Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	302	153	48
Future Volume (vph)	302	153	48
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1415	0
Flt Permitted	0.950		
Satd. Flow (perm)	1572	1415	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	28		40
Peak Hour Factor	0.82	0.92	0.80
Heavy Vehicles (%)	1%	3%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	368	166	60
Shared Lane Traffic (%)			
Lane Group Flow (vph)	368	226	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.65	0.61				0.50		0.90	0.70	0.50	
Control Delay		40.7	20.7				22.9		46.9	13.0	6.2	
Queue Delay		0.0	0.5				0.0		0.0	1.6	1.5	
Total Delay		40.7	21.2				22.9		46.9	14.5	7.6	
LOS		D	C				C		D	B	A	
Approach Delay			31.3				22.9			18.2		
Approach LOS			C				C			B		
Queue Length 50th (ft)		211	70				186		35	77	51	
Queue Length 95th (ft)		311	62				233		m#313	102	82	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		384	376				1048		221	622	784	
Starvation Cap Reductn		0	0				0		0	70	222	
Spillback Cap Reductn		0	20				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.65	0.65				0.50		0.90	0.79	0.69	

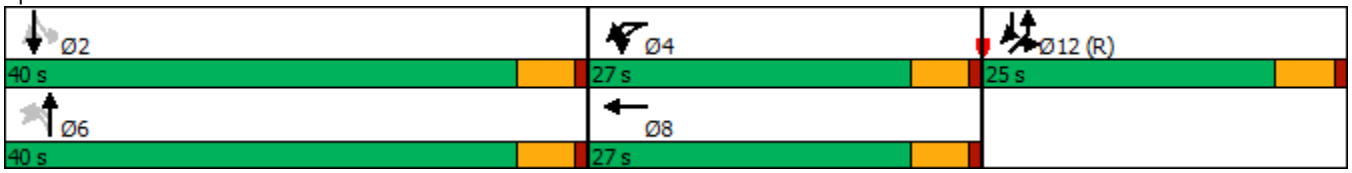
Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 33.8		Intersection LOS: C	
Intersection Capacity Utilization 100.6%		ICU Level of Service G	
Analysis Period (min) 15			

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

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

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

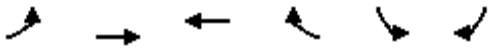
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



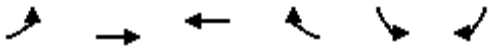


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	1.05	0.61	
Control Delay	100.1	28.1	
Queue Delay	0.0	0.0	
Total Delay	100.1	28.1	
LOS	F	C	
Approach Delay	72.7		
Approach LOS	E		
Queue Length 50th (ft)	~378	118	
Queue Length 95th (ft)	#564	244	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	349	372	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.05	0.61	

Intersection Summary



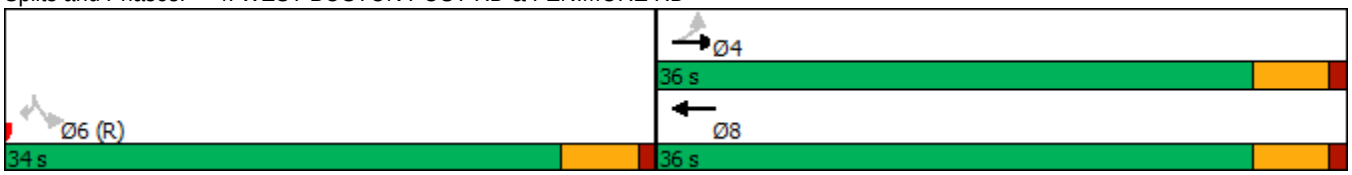
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	801	769	155	240	168
Future Volume (vph)	87	801	769	155	240	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.98	0.98
Frt			0.972			0.850
Flt Protected		0.995			0.950	
Satd. Flow (prot)	0	3276	3196	0	1788	1530
Flt Permitted		0.614			0.950	
Satd. Flow (perm)	0	2021	3196	0	1758	1505
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			50			74
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	10			10	16	4
Peak Hour Factor	0.83	0.92	0.88	0.78	0.90	0.78
Heavy Vehicles (%)	5%	2%	1%	5%	0%	1%
Parking (#/hr)				6		
Adj. Flow (vph)	105	871	874	199	267	215
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	976	1073	0	267	215
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Perm	Perm
Protected Phases		4	8			
Permitted Phases	4				6	6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		1.09	0.74		0.37	0.32
Control Delay		80.1	19.3		16.0	10.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		80.1	19.3		16.0	10.5
LOS		F	B		B	B
Approach Delay		80.1	19.3		13.5	
Approach LOS		F	B		B	
Queue Length 50th (ft)		~408	294		122	61
Queue Length 95th (ft)		#590	395		211	106
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		895	1443		728	666
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.09	0.74		0.37	0.32

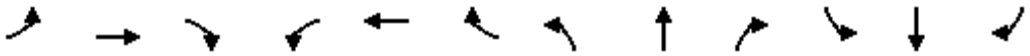
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 41.6		Intersection LOS: D	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	634	91	40	612	116	102	34	60	114	36	191
Future Volume (vph)	186	634	91	40	612	116	102	34	60	114	36	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	12	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.974				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.964	
Satd. Flow (prot)	1593	3116	0	1516	2906	0	0	1636	1378	0	1732	1211
Flt Permitted	0.205			0.230				0.477			0.556	
Satd. Flow (perm)	344	3116	0	367	2906	0	0	810	1378	0	999	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		19										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.90	0.97	0.71	0.82	0.89	0.80	0.80	0.80	0.80	0.71	0.69	0.71
Heavy Vehicles (%)	2%	2%	0%	0%	2%	0%	1%	0%	2%	2%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	207	654	128	49	688	145	128	43	75	161	52	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	782	0	49	833	0	0	171	75	0	213	269
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.14	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.52	0.40		0.52	0.40			0.24	0.24		0.24	0.40
v/c Ratio	0.63	0.62		0.15	0.71			0.88	0.23		0.88	0.55
Control Delay	42.3	33.5		19.9	37.6			87.9	43.9		83.2	36.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	42.3	33.5		19.9	37.6			87.9	43.9		83.2	36.8
LOS	D	C		B	D			F	D		F	D
Approach Delay		35.3			36.6			74.5			57.3	
Approach LOS		D			D			E			E	
Queue Length 50th (ft)	159	475		34	546			241	88		301	307
Queue Length 95th (ft)	243	594		63	670			#401	143		#360	339
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	330	1265		330	1169			195	332		241	487
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.63	0.62		0.15	0.71			0.88	0.23		0.88	0.55

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 43.5		Intersection LOS: D	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

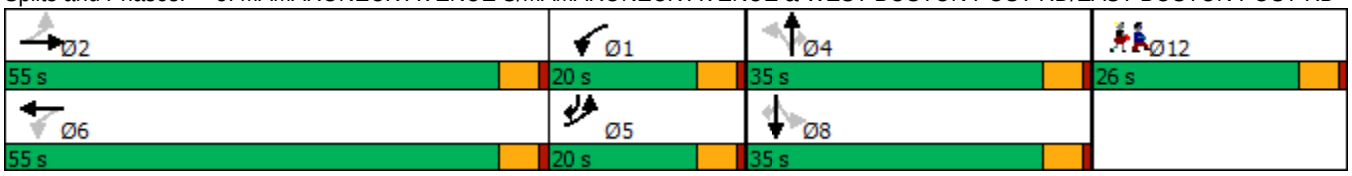
Intersection Summary

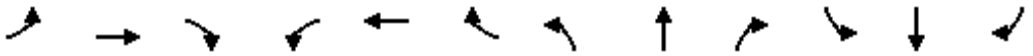
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

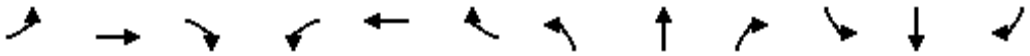
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	603	71	12	709	95	111	74	30	116	43	109
Future Volume (vph)	125	603	71	12	709	95	111	74	30	116	43	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.983			0.941			0.948	
Flt Protected		0.992			0.999		0.950				0.979	
Satd. Flow (prot)	0	3578	0	0	3615	0	1668	1611	0	0	1862	0
Flt Permitted		0.567			0.801		0.467				0.789	
Satd. Flow (perm)	0	2045	0	0	2899	0	820	1611	0	0	1501	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.79	0.90	0.71	0.75	0.83	0.84	0.82	0.80	0.50	0.82	0.72	0.88
Heavy Vehicles (%)	0%	2%	3%	0%	1%	4%	1%	4%	3%	0%	0%	0%
Adj. Flow (vph)	158	670	100	16	854	113	135	93	60	141	60	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	0	0	983	0	135	153	0	0	325	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	1.00	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		40.1			40.1		39.9	39.9			24.1	
Actuated g/C Ratio		0.37			0.37		0.37	0.37			0.22	
v/c Ratio		1.08			0.87		0.36	0.26			0.97	
Control Delay		89.6			41.6		27.5	26.3			85.5	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		89.6			41.6		27.5	26.3			85.5	
LOS		F			D		C	C			F	
Approach Delay		89.6			41.6			26.9			85.5	
Approach LOS		F			D			C			F	
Queue Length 50th (ft)		~468			465		96	111			346	
Queue Length 95th (ft)		#956			#693		185	202			#526	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		860			1124		381	598			335	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		1.08			0.87		0.35	0.26			0.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 107.9			
Natural Cycle: 140			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 63.2		Intersection LOS: E	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

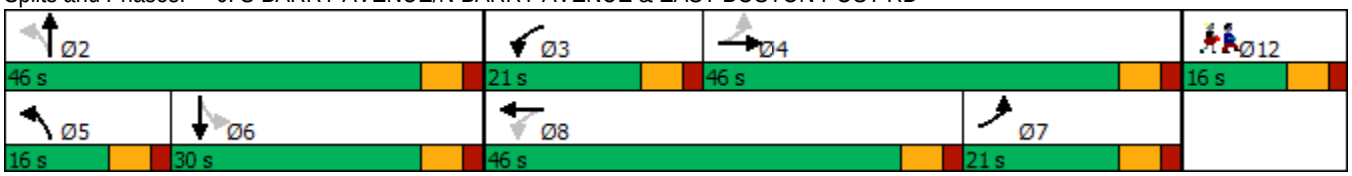
Intersection Summary

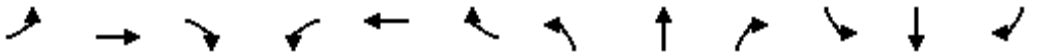
Analysis Period (min) 15

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

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

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



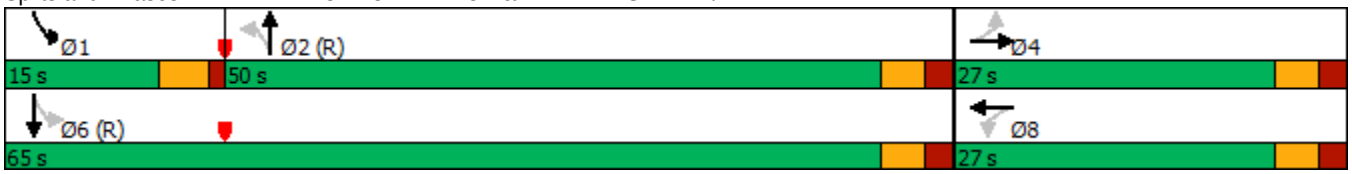


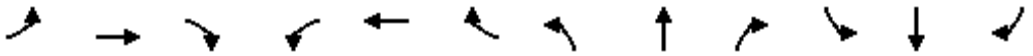
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	2	4	30	1	386	4	1010	36	184	873	12
Future Volume (vph)	16	2	4	30	1	386	4	1010	36	184	873	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00			1.00	1.00		1.00	1.00	
Frt		0.967			0.851			0.994			0.997	
Flt Protected		0.969		0.950			0.950			0.950		
Satd. Flow (prot)	0	1776	0	1560	1494	0	1685	3384	0	1728	3399	0
Flt Permitted		0.520		0.736			0.286			0.139		
Satd. Flow (perm)	0	953	0	1206	1494	0	506	3384	0	253	3399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			253			6			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			2	2			6		2	2		6
Peak Hour Factor	0.75	0.50	0.50	0.83	0.50	0.97	0.63	0.94	0.79	0.80	0.89	0.58
Heavy Vehicles (%)	6%	0%	25%	8%	0%	1%	0%	2%	2%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	21	4	8	36	2	398	6	1074	46	230	981	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	36	400	0	6	1120	0	230	1002	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.14		0.12	0.73		0.02	0.68		0.69	0.45	
Control Delay		24.4		28.9	20.5		12.8	20.4		21.5	8.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.4		28.9	20.5		12.8	20.4		21.5	8.6	
LOS		C		C	C		B	C		C	A	
Approach Delay		24.4			21.2			20.4			11.0	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		18		26	120		3	398		75	215	
Queue Length 95th (ft)		28		62	37		10	515		145	273	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		233		288	549		247	1658		334	2218	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.13	0.73		0.02	0.68		0.69	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





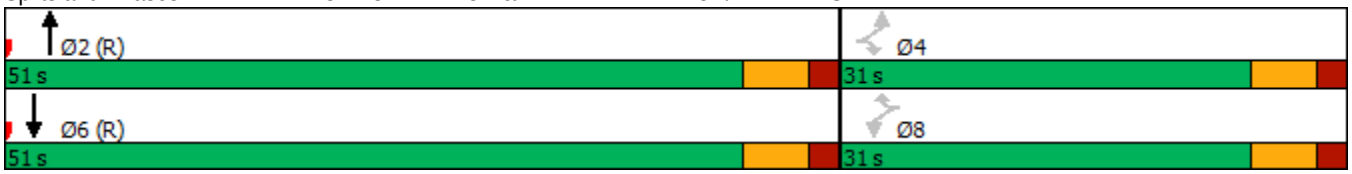
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	0	64	38	0	34	0	739	33	0	787	0
Future Volume (vph)	383	0	64	38	0	34	0	739	33	0	787	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.95		0.98	0.99		0.94						
Frt			0.850			0.850		0.990				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1547	0	1272	0	3024	0	0	3185	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1423	0	684	1530	0	1192	0	3024	0	0	3185	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								13				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)	53		11	11		53						
Peak Hour Factor	0.97	0.25	0.73	0.59	0.25	0.65	0.92	0.91	0.60	0.92	0.89	0.92
Heavy Vehicles (%)	1%	0%	2%	5%	0%	0%	0%	3%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	395	0	88	64	0	52	0	812	55	0	884	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	395	0	88	64	0	52	0	867	0	0	884	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	31.0		31.0	31.0		31.0		51.0			51.0	
Total Split (%)	37.8%		37.8%	37.8%		37.8%		62.2%			62.2%	
Maximum Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	25.0		25.0	25.0		25.0		45.0			45.0	
Actuated g/C Ratio	0.30		0.30	0.30		0.30		0.55			0.55	
v/c Ratio	0.91		0.42	0.14		0.14		0.52			0.51	
Control Delay	55.9		30.4	21.7		22.1		12.9			12.8	
Queue Delay	0.0		0.0	0.0		0.0		2.8			0.0	
Total Delay	55.9		30.4	21.7		22.1		15.7			12.8	
LOS	E		C	C		C		B			B	
Approach Delay		51.2			21.9			15.7			12.8	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	310		57	38		31		216			222	
Queue Length 95th (ft)	#580		99	54		52		295			294	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	433		208	466		363		1665			1747	
Starvation Cap Reductn	0		0	0		0		657			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.91		0.42	0.14		0.14		0.86			0.51	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 67.2%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





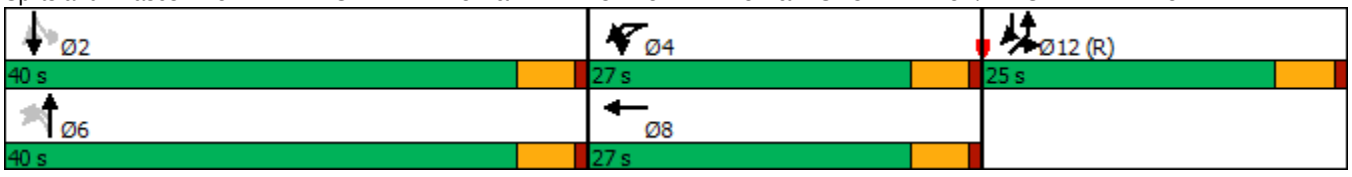
Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	75	120	12	133	19	1	341	66	123	371	253	8
Future Volume (vph)	75	120	12	133	19	1	341	66	123	371	253	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98				0.97		0.96		0.91	
Frt			0.868				0.973				0.850	
Flt Protected		0.950					0.996		0.950			
Satd. Flow (prot)	0	1607	1127	0	0	0	3036	0	1540	1637	1386	0
Flt Permitted		0.950					0.858		0.387			
Satd. Flow (perm)	0	1491	1127	0	0	0	2604	0	599	1637	1260	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			171				32				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	33			12	34	53		66	66		34	53
Peak Hour Factor	0.85	0.87	0.50	0.78	0.53	0.25	0.87	0.70	0.71	0.89	0.91	0.67
Heavy Vehicles (%)	2%	3%	0%	5%	0%	0%	2%	0%	2%	1%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	88	138	24	171	36	4	392	94	173	417	278	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	195	0	0	0	526	0	173	417	290	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		40.0	40.0	40.0		40.0	40.0	25.0	
Total Split (%)	29.3%	29.3%	29.3%		43.5%	43.5%	43.5%		43.5%	43.5%	27.2%	
Maximum Green (s)	22.0	22.0	22.0		35.0	35.0	35.0		35.0	35.0	20.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	262	136	31
Future Volume (vph)	262	136	31
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.99		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1454	0
Flt Permitted	0.950		
Satd. Flow (perm)	1591	1454	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	12		33
Peak Hour Factor	0.84	0.90	0.70
Heavy Vehicles (%)	1%	0%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	312	151	44
Shared Lane Traffic (%)			
Lane Group Flow (vph)	312	195	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.2%	27.2%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				35.0		35.0	35.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.38		0.38	0.38	0.60	
v/c Ratio		0.59	0.49				0.52		0.76	0.67	0.37	
Control Delay		38.2	11.3				22.8		32.1	14.1	3.6	
Queue Delay		0.0	0.1				0.0		0.5	0.5	0.9	
Total Delay		38.2	11.4				22.8		32.5	14.6	4.5	
LOS		D	B				C		C	B	A	
Approach Delay			25.8				22.8			14.8		
Approach LOS			C				C			B		
Queue Length 50th (ft)		187	17				183		36	64	30	
Queue Length 95th (ft)		297	0				251		46	84	45	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		384	399				1010		227	622	790	
Starvation Cap Reductn		0	0				0		3	37	275	
Spillback Cap Reductn		0	13				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.59	0.51				0.52		0.77	0.71	0.56	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 97.0%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

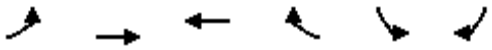
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



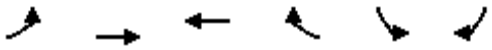


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.89	0.51	
Control Delay	64.4	23.3	
Queue Delay	0.0	0.0	
Total Delay	64.4	23.3	
LOS	E	C	
Approach Delay	48.6		
Approach LOS	D		
Queue Length 50th (ft)	284	89	
Queue Length 95th (ft)	#470	199	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	349	381	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.89	0.51	

Intersection Summary



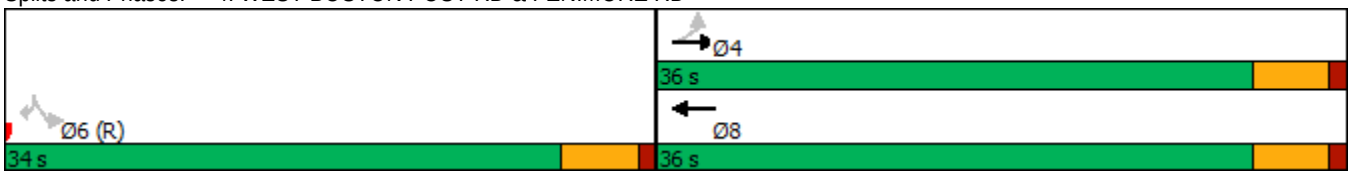
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	754	719	106	188	248
Future Volume (vph)	125	754	719	106	188	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.99	0.99
Frt			0.949			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3522	3123	0	1771	1530
Flt Permitted		0.526			0.950	
Satd. Flow (perm)	0	1864	3123	0	1752	1510
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			171			88
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	11			11	10	1
Peak Hour Factor	0.97	0.88	0.88	0.25	0.90	0.84
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Parking (#/hr)				6		
Adj. Flow (vph)	129	857	817	424	209	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	1241	0	209	295
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.00	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	Perm	NA	NA		Perm	Perm
Protected Phases		4	8			
Permitted Phases	4				6	6
Minimum Split (s)	24.0	24.0	24.0		25.0	25.0
Total Split (s)	36.0	36.0	36.0		34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%		48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0		29.0	29.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)	8.0	8.0	8.0		6.0	6.0
Flash Dont Walk (s)	11.0	11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		31.0	31.0		29.0	29.0
Actuated g/C Ratio		0.44	0.44		0.41	0.41
v/c Ratio		1.20	0.84		0.29	0.44
Control Delay		122.1	21.5		15.0	12.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		122.1	21.5		15.0	12.4
LOS		F	C		B	B
Approach Delay		122.1	21.5		13.5	
Approach LOS		F	C		B	
Queue Length 50th (ft)		~443	333		92	93
Queue Length 95th (ft)		#602	455		166	170
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		825	1478		725	677
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		1.20	0.84		0.29	0.44

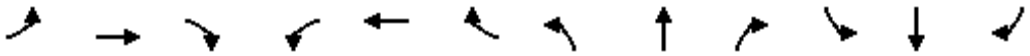
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 56.3		Intersection LOS: E	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	592	105	25	509	115	115	40	54	117	62	166
Future Volume (vph)	177	592	105	25	509	115	115	40	54	117	62	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.970				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.972	
Satd. Flow (prot)	1593	3091	0	1516	2895	0	0	1648	1405	0	1763	1211
Flt Permitted	0.259			0.147				0.461			0.555	
Satd. Flow (perm)	434	3091	0	235	2895	0	0	788	1405	0	1006	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		32										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.95	0.79	0.48	0.44	0.88	0.79	0.80	0.80	0.80	0.91	0.67	0.89
Heavy Vehicles (%)	2%	2%	0%	0%	1%	4%	0%	0%	0%	1%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	186	749	219	57	578	146	144	50	68	129	93	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	968	0	57	724	0	0	194	68	0	222	187
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (%)	14.7%	40.4%		14.7%	40.4%		25.7%	25.7%	25.7%	25.7%	25.7%	14.7%
Maximum Green (s)	15.0	50.0		15.0	50.0		30.0	30.0	30.0	30.0	30.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	65.7	50.5		65.7	50.5			30.3	30.3		30.3	50.5
Actuated g/C Ratio	0.52	0.40		0.52	0.40			0.24	0.24		0.24	0.40
v/c Ratio	0.51	0.77		0.21	0.62			1.03	0.20		0.92	0.38
Control Delay	32.6	38.1		25.2	34.7			120.4	43.5		88.6	32.1
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	32.6	38.1		25.2	34.7			120.4	43.5		88.6	32.1
LOS	C	D		C	C			F	D		F	C
Approach Delay		37.2			34.0			100.5			62.8	
Approach LOS		D			C			F			E	
Queue Length 50th (ft)	140	636		39	451			~314	79		~317	197
Queue Length 95th (ft)	218	640		37	552			#479	133		#358	309
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	367	1262		277	1164			189	339		242	487
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.51	0.77		0.21	0.62			1.03	0.20		0.92	0.38

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 46.6		Intersection LOS: D	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

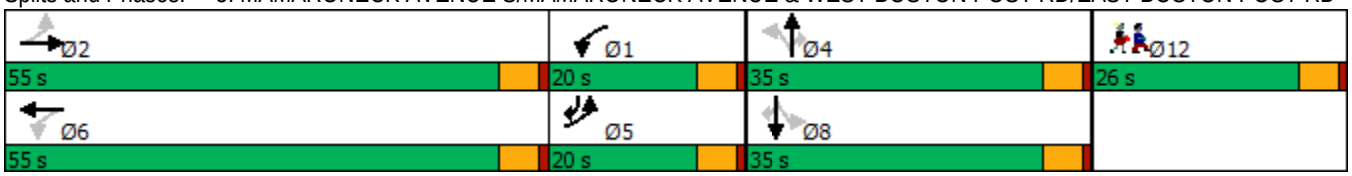
Intersection Summary

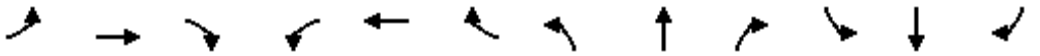
Analysis Period (min) 15

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

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

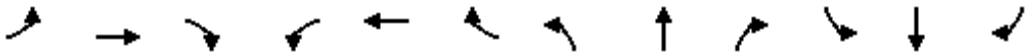
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	533	83	18	572	85	88	38	19	72	49	83
Future Volume (vph)	104	533	83	18	572	85	88	38	19	72	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.980			0.952			0.945	
Flt Protected		0.992			0.998		0.950				0.983	
Satd. Flow (prot)	0	3551	0	0	3583	0	1652	1608	0	0	1836	0
Flt Permitted		0.683			0.749		0.443				0.850	
Satd. Flow (perm)	0	2445	0	0	2689	0	770	1608	0	0	1587	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.79	0.90	0.80	0.75	0.89	0.83	0.85	0.63	0.68	0.92	0.88	0.90
Heavy Vehicles (%)	1%	2%	5%	6%	1%	6%	2%	5%	5%	3%	2%	0%
Adj. Flow (vph)	132	592	104	24	643	102	104	60	28	78	56	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	828	0	0	769	0	104	88	0	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	21.0	46.0		21.0	46.0		16.0	46.0		30.0	30.0	
Total Split (%)	16.3%	35.7%		16.3%	35.7%		12.4%	35.7%		23.3%	23.3%	
Maximum Green (s)	15.0	40.0		15.0	40.0		10.0	40.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		36.8			35.1		35.0	35.0			19.3	
Actuated g/C Ratio		0.36			0.34		0.34	0.34			0.19	
v/c Ratio		0.85			0.79		0.30	0.16			0.76	
Control Delay		43.5			37.6		28.9	27.2			58.7	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		43.5			37.6		28.9	27.2			58.7	
LOS		D			D		C	C			E	
Approach Delay		43.5			37.6			28.1			58.7	
Approach LOS		D			D			C			E	
Queue Length 50th (ft)		347			324		73	61			220	
Queue Length 95th (ft)		#686			532		155	97			#407	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1072			1136		349	642			380	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.77			0.68		0.30	0.14			0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 102.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 41.5		Intersection LOS: D	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

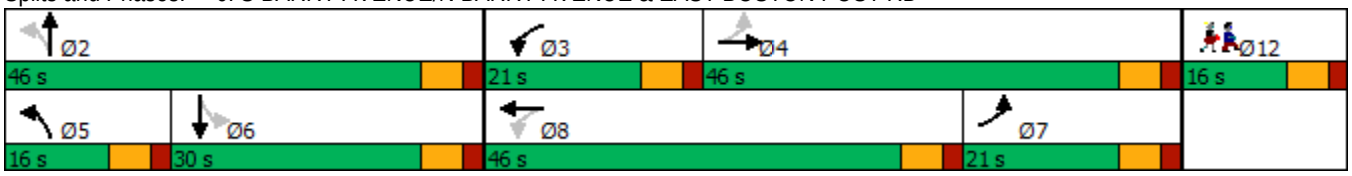
Intersection Summary

Analysis Period (min) 15

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

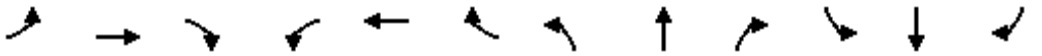
Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



Appendix 11

2038 Reasonable Build-Out Condition Synchro Traffic Analysis Reports (with Improvements)

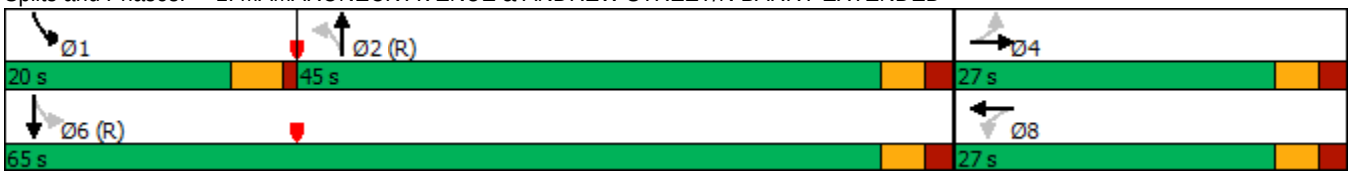


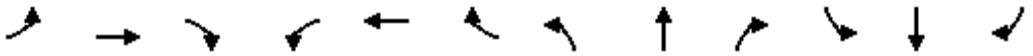
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	5	7	35	0	593	2	1236	23	218	860	13
Future Volume (vph)	19	5	7	35	0	593	2	1236	23	218	860	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00					1.00	1.00		1.00	1.00	
Frt		0.959			0.850			0.996			0.997	
Flt Protected		0.975		0.950			0.950			0.950		
Satd. Flow (prot)	0	1756	0	1604	1463	0	1685	3175	0	1662	3248	0
Flt Permitted		0.304		0.727			0.309			0.090		
Satd. Flow (perm)	0	548	0	1228	1463	0	547	3175	0	157	3248	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			318			3			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	1						7		5	5		7
Peak Hour Factor	0.79	0.63	0.50	0.70	0.90	0.93	0.50	0.95	0.69	0.82	0.95	0.70
Heavy Vehicles (%)	5%	20%	17%	5%	0%	3%	0%	9%	8%	5%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	24	8	14	50	0	638	4	1301	33	266	905	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	50	638	0	4	1334	0	266	924	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		45.0	45.0		20.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		48.9%	48.9%		21.7%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		40.0	40.0		15.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		40.0	40.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.43	0.43		0.66	0.65	
v/c Ratio		0.33		0.17	1.08		0.02	0.97		0.75	0.44	
Control Delay		29.2		29.7	79.4		15.0	43.6		33.9	8.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		29.2		29.7	79.4		15.0	43.6		33.9	8.5	
LOS		C		C	E		B	D		C	A	
Approach Delay		29.2			75.8			43.5			14.2	
Approach LOS		C			E			D			B	
Queue Length 50th (ft)		24		37	~424		2	617		155	195	
Queue Length 95th (ft)		47		66	#764		7	#875		255	256	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		141		293	591		237	1382		356	2120	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.33		0.17	1.08		0.02	0.97		0.75	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 39.4		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	487	0	66	53	0	73	0	829	66	0	922	0
Future Volume (vph)	487	0	66	53	0	73	0	829	66	0	922	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.95	0.97								
Frt			0.850			0.850		0.988				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1472	0	667	1562	0	1189	0	2836	0	0	3036	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1472	0	635	1513	0	1189	0	2836	0	0	3036	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)			38	38								
Peak Hour Factor	0.92	0.25	0.79	0.70	0.25	0.70	0.92	0.98	0.87	0.92	0.92	0.92
Heavy Vehicles (%)	3%	0%	7%	4%	0%	7%	0%	10%	3%	0%	7%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	529	0	84	76	0	104	0	846	76	0	1002	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	529	0	84	76	0	104	0	922	0	0	1002	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	36.0		36.0	36.0		36.0		46.0			46.0	
Total Split (%)	43.9%		43.9%	43.9%		43.9%		56.1%			56.1%	
Maximum Green (s)	30.0		30.0	30.0		30.0		40.0			40.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	30.0		30.0	30.0		30.0		40.0			40.0	
Actuated g/C Ratio	0.37		0.37	0.37		0.37		0.49			0.49	
v/c Ratio	0.98		0.36	0.14		0.24		0.66			0.68	
Control Delay	63.1		24.7	18.3		20.0		18.5			18.9	
Queue Delay	0.0		0.0	0.0		0.0		9.4			0.0	
Total Delay	63.1		24.7	18.3		20.0		27.9			18.9	
LOS	E		C	B		B		C			B	
Approach Delay		57.9			19.3			27.9			18.9	
Approach LOS		E			B			C			B	
Queue Length 50th (ft)	422		50	41		58		282			314	
Queue Length 95th (ft)	#751		96	67		88		388			424	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	538		232	553		435		1391			1480	
Starvation Cap Reductn	0		0	0		0		439			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.98		0.36	0.14		0.24		0.97			0.68	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 30.8		Intersection LOS: C	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	63	70	12	156	3	2	314	51	169	395	376	19
Future Volume (vph)	63	70	12	156	3	2	314	51	169	395	376	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							0.98					
Frt			0.870				0.979				0.850	
Flt Protected		0.950					0.999		0.950			
Satd. Flow (prot)	0	1513	1177	0	0	0	2895	0	1468	1545	1335	0
Flt Permitted		0.950					0.947		0.461			
Satd. Flow (perm)	0	1513	1177	0	0	0	2744	0	712	1545	1335	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			157				22				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)								87				
Peak Hour Factor	0.79	0.92	0.47	0.92	0.92	0.50	0.90	0.88	0.77	0.88	0.86	0.92
Heavy Vehicles (%)	7%	11%	7%	2%	2%	0%	8%	5%	7%	7%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	0
Parking (#/hr)			20					10				
Adj. Flow (vph)	80	76	26	170	3	4	349	58	219	449	437	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	156	196	0	0	0	414	0	219	449	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	26.0	26.0	26.0		38.0	38.0	38.0		38.0	38.0	28.0	
Total Split (%)	28.3%	28.3%	28.3%		41.3%	41.3%	41.3%		41.3%	41.3%	30.4%	
Maximum Green (s)	21.0	21.0	21.0		33.0	33.0	33.0		33.0	33.0	23.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												



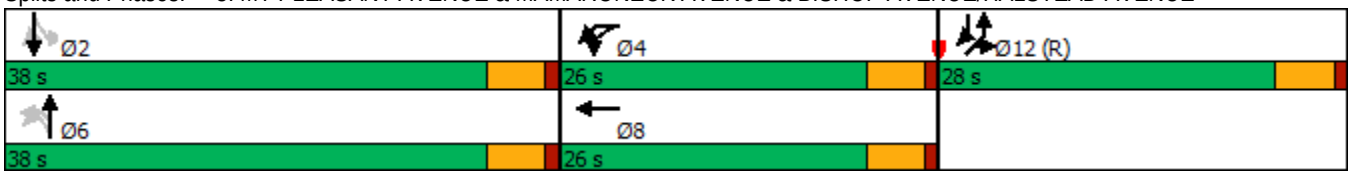
Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	362	118	20
Future Volume (vph)	362	118	20
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor			
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1562	1397	0
Flt Permitted	0.950		
Satd. Flow (perm)	1562	1397	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)			16
Peak Hour Factor	0.97	0.90	0.63
Heavy Vehicles (%)	4%	5%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	373	131	32
Shared Lane Traffic (%)			
Lane Group Flow (vph)	373	163	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	28.0	28.0	
Total Split (%)	30.4%	30.4%	
Maximum Green (s)	23.0	23.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		21.0	21.0				33.0		33.0	33.0	61.0	
Actuated g/C Ratio		0.23	0.23				0.36		0.36	0.36	0.66	
v/c Ratio		0.45	0.50				0.41		0.86	0.81	0.51	
Control Delay		35.5	13.3				22.5		37.3	20.3	4.5	
Queue Delay		0.0	0.6				0.0		10.3	8.9	2.1	
Total Delay		35.5	13.8				22.5		47.6	29.2	6.6	
LOS		D	B				C		D	C	A	
Approach Delay			23.5				22.5			23.6		
Approach LOS			C				C			C		
Queue Length 50th (ft)		126	29				142		106	154	41	
Queue Length 95th (ft)		224	2				208		m#302	m#591	54	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		345	389				998		255	554	893	
Starvation Cap Reductn		0	0				0		23	79	289	
Spillback Cap Reductn		0	40				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.45	0.56				0.41		0.94	0.95	0.76	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 30.4		Intersection LOS: C	
Intersection Capacity Utilization 98.5%		ICU Level of Service F	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

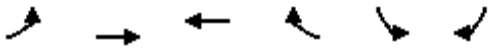
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



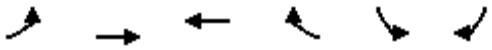


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	23.0	23.0	
Actuated g/C Ratio	0.25	0.25	
v/c Ratio	0.96	0.40	
Control Delay	71.8	17.8	
Queue Delay	0.0	0.0	
Total Delay	71.8	17.8	
LOS	E	B	
Approach Delay	55.4		
Approach LOS	E		
Queue Length 50th (ft)	343	60	
Queue Length 95th (ft)	#626	150	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	390	411	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.96	0.40	

Intersection Summary



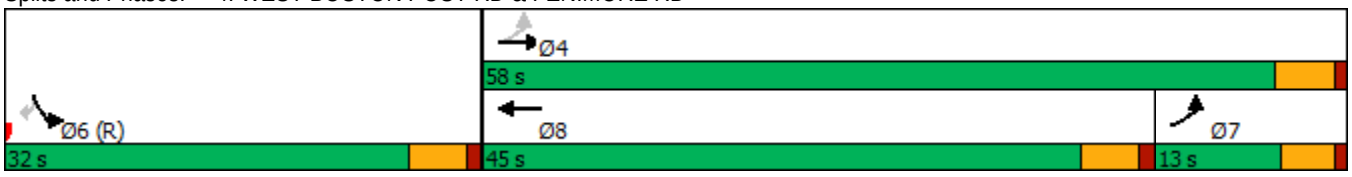
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	689	536	59	137	243
Future Volume (vph)	87	689	536	59	137	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00			
Frt			0.988			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3213	3154	0	1720	1458
Flt Permitted		0.699			0.950	
Satd. Flow (perm)	0	2258	3154	0	1720	1458
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			13			271
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	6			6		
Peak Hour Factor	0.85	0.93	0.70	0.88	0.84	0.72
Heavy Vehicles (%)	6%	4%	5%	8%	4%	6%
Parking (#/hr)				6		
Adj. Flow (vph)	102	741	766	67	163	338
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	843	833	0	163	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Minimum Split (s)	9.5	24.0	24.0		25.0	25.0
Total Split (s)	13.0	58.0	45.0		32.0	32.0
Total Split (%)	14.4%	64.4%	50.0%		35.6%	35.6%
Maximum Green (s)	8.5	53.0	40.0		27.0	27.0
Yellow Time (s)	3.5	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		8.0	8.0		6.0	6.0
Flash Dont Walk (s)		11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		53.0	40.0		27.0	27.0
Actuated g/C Ratio		0.59	0.44		0.30	0.30
v/c Ratio		0.60	0.59		0.32	0.54
Control Delay		14.4	20.7		26.5	9.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		14.4	20.7		26.5	9.6
LOS		B	C		C	A
Approach Delay		14.4	20.7		15.1	
Approach LOS		B	C		B	
Queue Length 50th (ft)		207	286		114	45
Queue Length 95th (ft)		275	267		184	75
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1414	1409		516	627
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.60	0.59		0.32	0.54

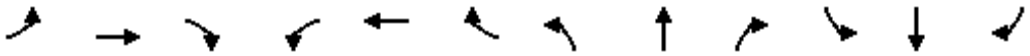
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 17.0		Intersection LOS: B	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	518	18	9	389	44	7	7	7	85	11	170
Future Volume (vph)	183	518	18	9	389	44	7	7	7	85	11	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.985				0.850			0.850
Flt Protected	0.950			0.950				0.970			0.958	
Satd. Flow (prot)	1562	3053	0	1516	2853	0	0	1659	1405	0	1633	1177
Flt Permitted	0.390			0.326				0.848			0.737	
Satd. Flow (perm)	641	3053	0	520	2853	0	0	1450	1405	0	1257	1177
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		3										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.84	0.88	0.80	0.29	0.85	0.87	0.50	0.75	0.30	0.73	0.63	0.66
Heavy Vehicles (%)	4%	6%	0%	0%	5%	2%	0%	0%	0%	8%	0%	5%
Parking (#/hr)			10									10
Adj. Flow (vph)	218	589	23	31	458	51	14	9	23	116	17	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	612	0	31	509	0	0	23	23	0	133	258
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	54.0		20.0	54.0		36.0	36.0	36.0	36.0	36.0	20.0
Total Split (%)	14.7%	39.7%		14.7%	39.7%		26.5%	26.5%	26.5%	26.5%	26.5%	14.7%
Maximum Green (s)	15.0	49.0		15.0	49.0		31.0	31.0	31.0	31.0	31.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	64.7	49.5		64.7	49.5			31.3	31.3		31.3	51.6
Actuated g/C Ratio	0.54	0.41		0.54	0.41			0.26	0.26		0.26	0.43
v/c Ratio	0.47	0.49		0.08	0.43			0.06	0.06		0.41	0.51
Control Delay	24.7	29.4		16.1	28.7			38.8	38.9		44.3	32.4
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	24.7	29.4		16.1	28.7			38.8	38.9		44.3	32.4
LOS	C	C		B	C			D	D		D	C
Approach Delay		28.2			28.0			38.8			36.4	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	99	245		12	199			19	19		121	195
Queue Length 95th (ft)	240	446		16	356			55	21		182	293
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	460	1257		404	1173			377	365		327	503
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.47	0.49		0.08	0.43			0.06	0.06		0.41	0.51

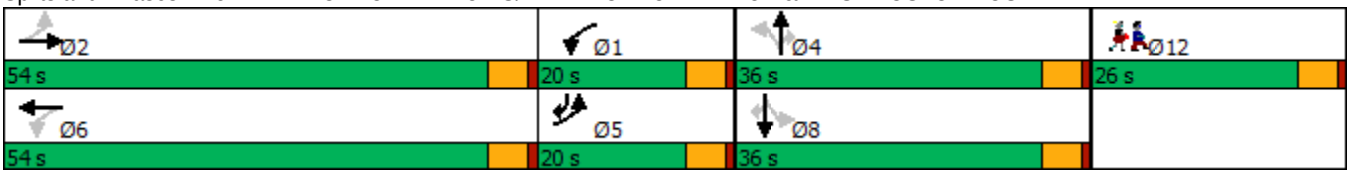
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	

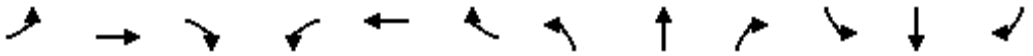
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

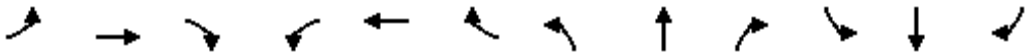
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	603	47	9	498	121	68	65	17	156	54	68
Future Volume (vph)	88	603	47	9	498	121	68	65	17	156	54	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	0		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.970			0.952			0.961	
Flt Protected		0.994			0.999		0.950				0.975	
Satd. Flow (prot)	0	3475	0	0	3559	0	1636	1688	0	0	1800	0
Flt Permitted		0.707			0.769		0.538				0.773	
Satd. Flow (perm)	0	2472	0	0	2740	0	926	1688	0	0	1427	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.80	0.91	0.69	0.56	0.85	0.82	0.77	0.77	0.43	0.94	0.84	0.74
Heavy Vehicles (%)	4%	6%	2%	0%	2%	0%	3%	0%	0%	3%	6%	6%
Adj. Flow (vph)	110	663	68	16	586	148	88	84	40	166	64	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	841	0	0	750	0	88	124	0	0	322	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	23.0	46.0		21.0	44.0		11.0	46.0		35.0	35.0	
Total Split (%)	17.8%	35.7%		16.3%	34.1%		8.5%	35.7%		27.1%	27.1%	
Maximum Green (s)	17.0	40.0		15.0	38.0		5.0	40.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		37.3			33.0		37.9	37.9			29.5	
Actuated g/C Ratio		0.36			0.32		0.37	0.37			0.29	
v/c Ratio		0.84			0.80		0.24	0.20			0.79	
Control Delay		41.4			39.9		25.9	25.2			52.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		41.4			39.9		25.9	25.2			52.2	
LOS		D			D		C	C			D	
Approach Delay		41.4			39.9			25.5			52.2	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)		382			364		61	88			324	
Queue Length 95th (ft)		#699			500		120	160			#611	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1082			1080		374	664			407	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.78			0.69		0.24	0.19			0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 103.3			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 40.9		Intersection LOS: D	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	12.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

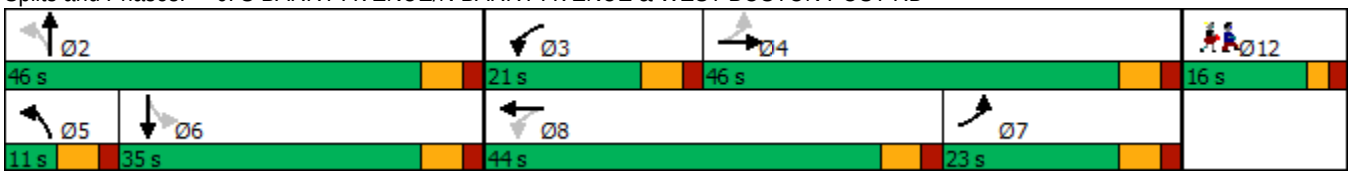
Intersection Summary

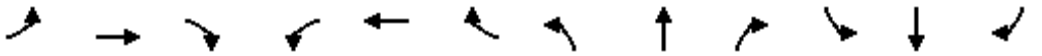
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & WEST BOSTON POST RD



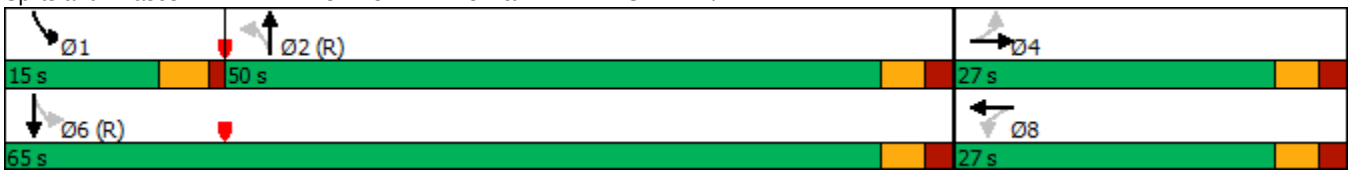


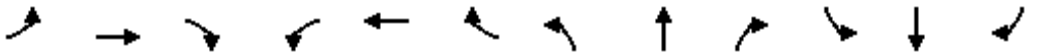
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	3	4	34	2	325	3	997	39	166	804	14
Future Volume (vph)	16	3	4	34	2	325	3	997	39	166	804	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00	0.98		1.00	1.00		1.00	1.00	
Frt		0.972			0.853			0.993			0.996	
Flt Protected		0.971		0.950			0.950			0.950		
Satd. Flow (prot)	0	1837	0	1604	1445	0	1685	3225	0	1711	3330	0
Flt Permitted		0.596		0.732			0.323			0.145		
Satd. Flow (perm)	0	1126	0	1233	1445	0	571	3225	0	261	3330	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			256			8			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)	4		2	2		4	9		2	2		9
Peak Hour Factor	0.71	0.38	0.50	0.77	0.25	0.94	0.50	0.95	0.73	0.82	0.94	0.54
Heavy Vehicles (%)	12%	0%	0%	5%	0%	3%	0%	7%	5%	2%	4%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	23	8	8	44	8	346	6	1049	53	202	855	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	44	354	0	6	1102	0	202	881	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.14		0.15	0.66		0.02	0.70		0.60	0.41	
Control Delay		24.8		29.3	15.8		12.7	21.0		15.8	8.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.8		29.3	15.8		12.7	21.0		15.8	8.2	
LOS		C		C	B		B	C		B	A	
Approach Delay		24.8			17.3			21.0			9.6	
Approach LOS		C			B			C			A	
Queue Length 50th (ft)		23		32	75		3	398		65	181	
Queue Length 95th (ft)		23		66	0		8	518		113	236	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		275		294	540		279	1581		337	2174	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.15	0.66		0.02	0.70		0.60	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.8		Intersection LOS: B	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



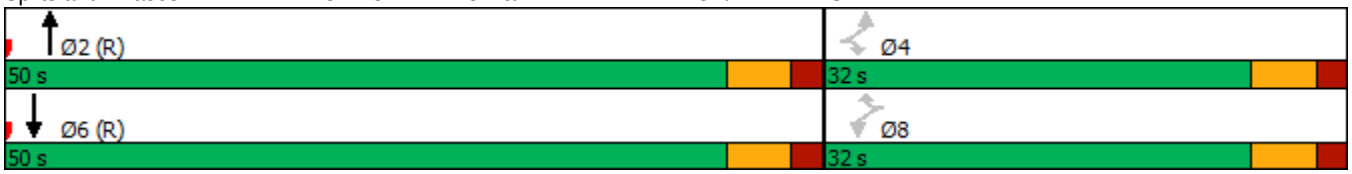


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	0	50	42	0	41	0	742	34	0	645	0
Future Volume (vph)	336	0	50	42	0	41	0	742	34	0	645	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.94	0.95				1.00				
Frt			0.850			0.850		0.992				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	714	1624	0	1247	0	2914	0	0	3094	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1501	0	672	1551	0	1247	0	2914	0	0	3094	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								10				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)			48	48					37			
Peak Hour Factor	0.87	0.25	0.75	0.53	0.25	0.79	0.92	0.92	0.77	0.92	0.93	0.92
Heavy Vehicles (%)	1%	0%	0%	0%	0%	2%	0%	7%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	386	0	67	79	0	52	0	807	44	0	694	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	386	0	67	79	0	52	0	851	0	0	694	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	32.0		32.0	32.0		32.0		50.0			50.0	
Total Split (%)	39.0%		39.0%	39.0%		39.0%		61.0%			61.0%	
Maximum Green (s)	26.0		26.0	26.0		26.0		44.0			44.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	26.0		26.0	26.0		26.0		44.0			44.0	
Actuated g/C Ratio	0.32		0.32	0.32		0.32		0.54			0.54	
v/c Ratio	0.81		0.31	0.16		0.13		0.54			0.42	
Control Delay	41.5		26.4	21.3		21.1		13.9			12.3	
Queue Delay	0.0		0.0	0.0		0.0		2.9			0.0	
Total Delay	41.5		26.4	21.3		21.1		16.8			12.3	
LOS	D		C	C		C		B			B	
Approach Delay		39.3			21.2			16.8			12.3	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	288		41	46		30		222			167	
Queue Length 95th (ft)	#493		79	55		62		304			231	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	475		213	491		395		1568			1660	
Starvation Cap Reductn	0		0	0		0		584			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.81		0.31	0.16		0.13		0.86			0.42	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	81	72	12	125	21	4	349	89	96	354	229	7
Future Volume (vph)	81	72	12	125	21	4	349	89	96	354	229	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92	0.97				0.98		0.97		0.91	
Frt			0.864				0.969				0.850	
Flt Protected		0.950					0.997		0.950			
Satd. Flow (prot)	0	1565	1111	0	0	0	3009	0	1496	1589	1373	0
Flt Permitted		0.950					0.869		0.367			
Satd. Flow (perm)	0	1445	1111	0	0	0	2612	0	559	1589	1244	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			140				40				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	35			18	39	51		50	50		39	51
Peak Hour Factor	0.88	0.71	0.83	0.89	0.75	0.50	0.89	0.79	0.82	0.88	0.89	0.58
Heavy Vehicles (%)	8%	3%	0%	5%	10%	25%	1%	3%	5%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	92	101	14	140	28	8	392	113	117	402	257	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	154	0	0	0	541	0	117	402	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		38.0	38.0	38.0		38.0	38.0	27.0	
Total Split (%)	29.3%	29.3%	29.3%		41.3%	41.3%	41.3%		41.3%	41.3%	29.3%	
Maximum Green (s)	22.0	22.0	22.0		33.0	33.0	33.0		33.0	33.0	22.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

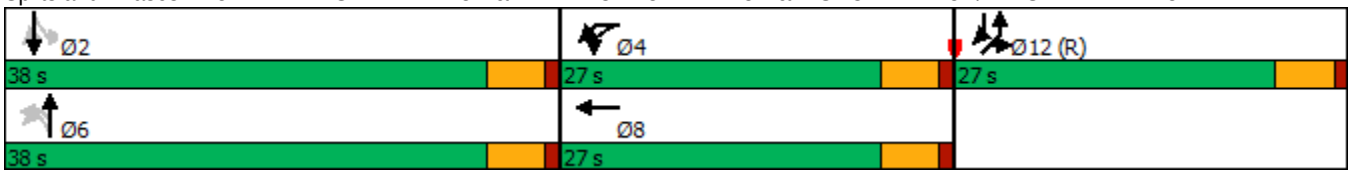


Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	266	115	54
Future Volume (vph)	266	115	54
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1562	1407	0
Flt Permitted	0.950		
Satd. Flow (perm)	1538	1407	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	18		35
Peak Hour Factor	0.87	0.87	0.71
Heavy Vehicles (%)	4%	4%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	306	132	76
Shared Lane Traffic (%)			
Lane Group Flow (vph)	306	208	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	27.0	27.0	
Total Split (%)	29.3%	29.3%	
Maximum Green (s)	22.0	22.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				33.0		33.0	33.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.36		0.36	0.36	0.60	
v/c Ratio		0.52	0.41				0.56		0.58	0.71	0.34	
Control Delay		36.1	10.3				24.5		25.9	21.5	5.1	
Queue Delay		0.0	0.0				0.0		1.1	0.1	0.9	
Total Delay		36.1	10.3				24.5		27.0	21.5	6.0	
LOS		D	B				C		C	C	A	
Approach Delay			24.7				24.5			17.1		
Approach LOS			C				C			B		
Queue Length 50th (ft)		157	10				194		33	113	49	
Queue Length 95th (ft)		201	73				274		170	487	75	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		374	372				962		200	569	784	
Starvation Cap Reductn		0	0				0		15	5	283	
Spillback Cap Reductn		0	0				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.52	0.41				0.56		0.63	0.71	0.54	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

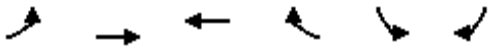
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



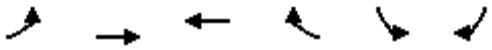


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	22.0	22.0	
Actuated g/C Ratio	0.24	0.24	
v/c Ratio	0.82	0.52	
Control Delay	52.6	23.3	
Queue Delay	0.0	0.0	
Total Delay	52.6	23.3	
LOS	D	C	
Approach Delay	40.8		
Approach LOS	D		
Queue Length 50th (ft)	271	98	
Queue Length 95th (ft)	#462	200	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	373	399	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.82	0.52	

Intersection Summary



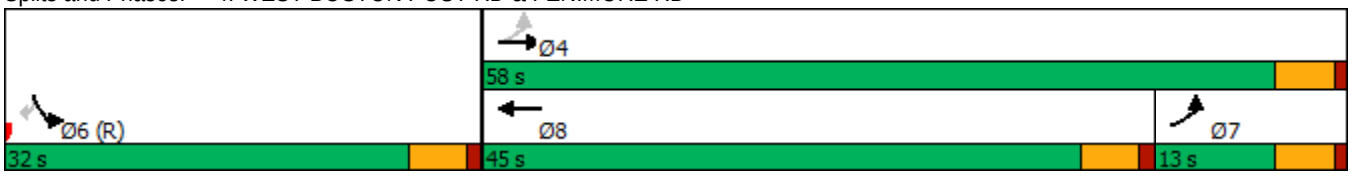
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	101	623	548	74	135	178
Future Volume (vph)	101	623	548	74	135	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	1.00		0.99	0.98
Frt			0.983			0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	3231	3137	0	1771	1515
Flt Permitted		0.676			0.950	
Satd. Flow (perm)	0	2200	3137	0	1752	1481
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			20			198
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	8			8	8	8
Peak Hour Factor	0.82	0.91	0.83	0.88	0.73	0.90
Heavy Vehicles (%)	6%	3%	5%	6%	1%	2%
Parking (#/hr)				6		
Adj. Flow (vph)	123	685	660	84	185	198
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	808	744	0	185	198
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Minimum Split (s)	10.0	24.0	24.0		25.0	25.0
Total Split (s)	13.0	58.0	45.0		32.0	32.0
Total Split (%)	14.4%	64.4%	50.0%		35.6%	35.6%
Maximum Green (s)	8.0	53.0	40.0		27.0	27.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			

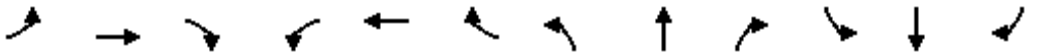


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		8.0	8.0		6.0	6.0
Flash Dont Walk (s)		11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		53.0	40.0		27.0	27.0
Actuated g/C Ratio		0.59	0.44		0.30	0.30
v/c Ratio		0.58	0.53		0.35	0.34
Control Delay		14.2	19.3		26.9	5.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		14.2	19.3		26.9	5.5
LOS		B	B		C	A
Approach Delay		14.2	19.3		15.8	
Approach LOS		B	B		B	
Queue Length 50th (ft)		195	243		131	0
Queue Length 95th (ft)		260	293		175	77
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1387	1405		531	582
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.58	0.53		0.35	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

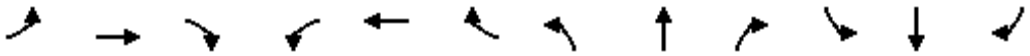
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	474	42	23	451	88	30	41	33	116	42	145
Future Volume (vph)	188	474	42	23	451	88	30	41	33	116	42	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.971				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.966	
Satd. Flow (prot)	1608	3116	0	1516	2825	0	0	1667	1364	0	1711	1199
Flt Permitted	0.299			0.331				0.685			0.686	
Satd. Flow (perm)	506	3116	0	528	2825	0	0	1171	1364	0	1215	1199
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		9										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.73	0.89	0.73	0.66	0.87	0.70	0.48	0.71	0.54	0.81	0.68	0.88
Heavy Vehicles (%)	1%	3%	0%	0%	5%	1%	0%	0%	3%	3%	3%	3%
Parking (#/hr)			10									10
Adj. Flow (vph)	258	533	58	35	518	126	63	58	61	143	62	165
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	591	0	35	644	0	0	121	61	0	205	165
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	52.0		20.0	52.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	52.0		20.0	52.0		38.0	38.0	38.0	38.0	38.0	20.0
Total Split (%)	14.7%	38.2%		14.7%	38.2%		27.9%	27.9%	27.9%	27.9%	27.9%	14.7%
Maximum Green (s)	15.0	47.0		15.0	47.0		33.0	33.0	33.0	33.0	33.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	62.7	47.5		62.7	47.5			33.4	33.4		33.4	53.6
Actuated g/C Ratio	0.52	0.39		0.52	0.39			0.28	0.28		0.28	0.45
v/c Ratio	0.64	0.48		0.09	0.58			0.37	0.16		0.61	0.31
Control Delay	36.4	30.2		17.2	33.1			42.2	38.1		49.5	26.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	36.4	30.2		17.2	33.1			42.2	38.1		49.5	26.2
LOS	D	C		B	C			D	D		D	C
Approach Delay		32.0			32.2			40.8			39.1	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	127	238		15	277			106	50		195	108
Queue Length 95th (ft)	246	439		41	493			188	78		293	258
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	402	1234		399	1115			324	377		336	533
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.64	0.48		0.09	0.58			0.37	0.16		0.61	0.31

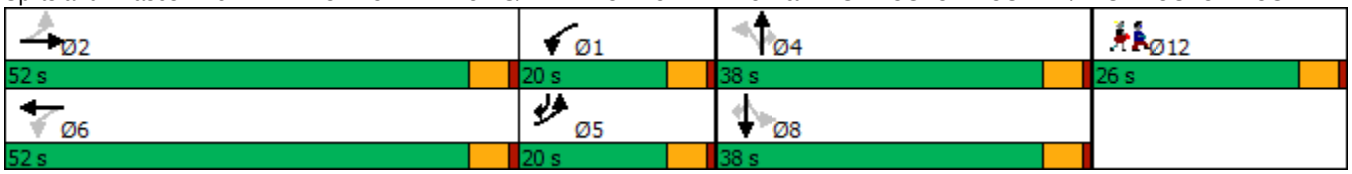
Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 120.4			
Natural Cycle: 135			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	

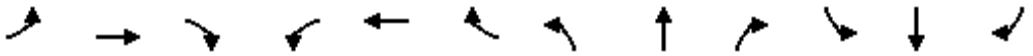
Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	16
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

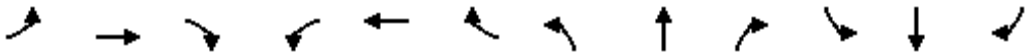
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	473	64	15	498	91	64	32	11	118	36	96
Future Volume (vph)	84	473	64	15	498	91	64	32	11	118	36	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	10	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	50		0	0		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.976			0.960			0.943	
Flt Protected		0.993			0.998		0.950				0.979	
Satd. Flow (prot)	0	3527	0	0	3523	0	1589	1624	0	0	1806	0
Flt Permitted		0.740			0.786		0.487				0.835	
Satd. Flow (perm)	0	2628	0	0	2775	0	815	1624	0	0	1541	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.86	0.89	0.76	0.63	0.90	0.83	0.76	0.73	0.69	0.89	0.75	0.73
Heavy Vehicles (%)	4%	3%	3%	7%	3%	3%	6%	0%	18%	3%	0%	3%
Adj. Flow (vph)	98	531	84	24	553	110	84	44	16	133	48	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	713	0	0	687	0	84	60	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.96	0.96	1.09	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		7.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		13.0	16.0		16.0	16.0	
Total Split (s)	23.0	46.0		21.0	44.0		11.0	46.0		35.0	35.0	
Total Split (%)	17.6%	35.1%		16.0%	33.6%		8.4%	35.1%		26.7%	26.7%	
Maximum Green (s)	17.0	40.0		15.0	38.0		5.0	40.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		33.1			32.8		35.0	35.0			26.7	
Actuated g/C Ratio		0.34			0.34		0.36	0.36			0.28	
v/c Ratio		0.74			0.69		0.25	0.10			0.74	
Control Delay		35.7			32.9		25.5	23.7			46.4	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		35.7			32.9		25.5	23.7			46.4	
LOS		D			C		C	C			D	
Approach Delay		35.7			32.9			24.7			46.4	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		308			294		53	37			281	
Queue Length 95th (ft)		501			500		117	85			448	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1195			1185		336	695			478	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.60			0.58		0.25	0.09			0.65	

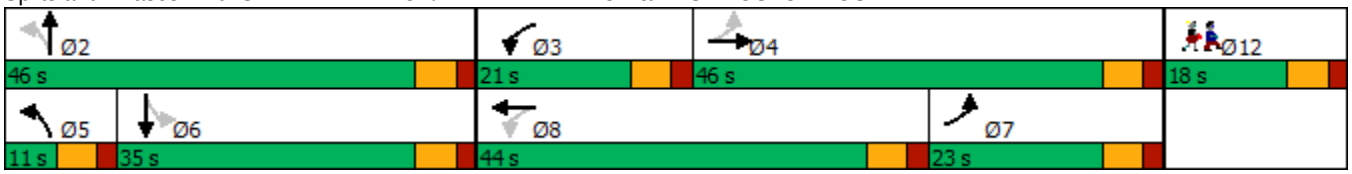
Intersection Summary			
Area Type:	Other		
Cycle Length: 131			
Actuated Cycle Length: 96.9			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	12.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	14%
Maximum Green (s)	12.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



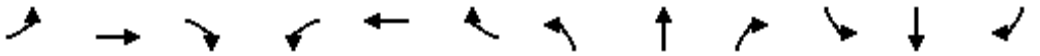
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	7	40	4	400	4	1104	34	251	1339	23
Future Volume (vph)	20	10	7	40	4	400	4	1104	34	251	1339	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99			1.00	1.00		1.00	1.00	
Frt		0.962			0.853			0.994			0.997	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	1958	0	1589	1498	0	1685	3352	0	1678	3436	0
Flt Permitted		0.420		0.720			0.181			0.090		
Satd. Flow (perm)	0	840	0	1198	1498	0	320	3352	0	159	3436	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			325			5			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			5	5			15		5	5		15
Peak Hour Factor	0.79	0.63	0.44	0.73	0.50	0.92	0.63	0.95	0.75	0.76	0.94	0.75
Heavy Vehicles (%)	0%	0%	0%	6%	0%	1%	0%	3%	2%	4%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	25	16	16	55	8	435	6	1162	45	330	1424	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	55	443	0	6	1207	0	330	1455	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		45.0	45.0		20.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		48.9%	48.9%		21.7%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		40.0	40.0		15.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		40.0	40.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.43	0.43		0.66	0.65	
v/c Ratio		0.27		0.19	0.73		0.04	0.83		0.92	0.65	
Control Delay		25.9		30.1	17.1		16.2	28.9		55.4	11.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		25.9		30.1	17.1		16.2	28.9		55.4	11.3	
LOS		C		C	B		B	C		E	B	
Approach Delay		25.9			18.6			28.8			19.5	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)		31		41	91		3	505		223	382	
Queue Length 95th (ft)		54		74	4		11	651		#338	488	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		213		286	605		139	1460		360	2242	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.27		0.19	0.73		0.04	0.83		0.92	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 22.6		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	446	0	60	38	0	61	0	841	41	0	889	0
Future Volume (vph)	446	0	60	38	0	61	0	841	41	0	889	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.94	0.96				1.00				
Frt			0.850			0.850		0.990				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1577	0	1272	0	2984	0	0	3124	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1501	0	659	1508	0	1272	0	2984	0	0	3124	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								13				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)			48	48					51			
Peak Hour Factor	0.94	0.25	0.83	0.68	0.25	0.80	0.92	0.88	0.60	0.92	0.98	0.92
Heavy Vehicles (%)	1%	0%	2%	3%	0%	0%	0%	4%	0%	0%	4%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	474	0	72	56	0	76	0	956	68	0	907	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	474	0	72	56	0	76	0	1024	0	0	907	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	23.0		23.0		23.0			37.0	
Total Split (s)	33.0		33.0	33.0		33.0		49.0			49.0	
Total Split (%)	40.2%		40.2%	40.2%		40.2%		59.8%			59.8%	
Maximum Green (s)	27.0		27.0	27.0		27.0		43.0			43.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	27.0		27.0	27.0		27.0		43.0			43.0	
Actuated g/C Ratio	0.33		0.33	0.33		0.33		0.52			0.52	
v/c Ratio	0.96		0.33	0.11		0.18		0.65			0.55	
Control Delay	61.0		26.1	20.0		21.1		16.4			14.7	
Queue Delay	0.0		0.0	0.0		0.0		13.4			0.0	
Total Delay	61.0		26.1	20.0		21.1		29.8			14.7	
LOS	E		C	C		C		C			B	
Approach Delay		56.4			20.7			29.8			14.7	
Approach LOS		E			C			C			B	
Queue Length 50th (ft)	377		44	32		44		296			246	
Queue Length 95th (ft)	#681		93	55		84		387			333	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	494		216	496		418		1570			1638	
Starvation Cap Reductn	0		0	0		0		540			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.96		0.33	0.11		0.18		0.99			0.55	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	72	143	21	182	16	1	348	54	164	390	322	6
Future Volume (vph)	72	143	21	182	16	1	348	54	164	390	322	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96				0.98		0.95		0.89	
Frt			0.874				0.979				0.850	
Flt Protected		0.950					0.997		0.950			
Satd. Flow (prot)	0	1606	1127	0	0	0	3047	0	1510	1637	1399	0
Flt Permitted		0.950					0.893		0.385			
Satd. Flow (perm)	0	1606	1127	0	0	0	2718	0	582	1637	1241	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			149				23				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)				28	48	70		72	72		48	70
Peak Hour Factor	0.92	0.83	0.57	0.94	0.57	0.50	0.82	0.72	0.83	0.89	0.86	0.38
Heavy Vehicles (%)	2%	3%	0%	4%	0%	0%	2%	4%	4%	1%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	78	172	37	194	28	2	424	75	198	438	374	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	231	0	0	0	529	0	198	438	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	25.0	25.0	25.0		40.0	40.0	40.0		40.0	40.0	27.0	
Total Split (%)	27.2%	27.2%	27.2%		43.5%	43.5%	43.5%		43.5%	43.5%	29.3%	
Maximum Green (s)	20.0	20.0	20.0		35.0	35.0	35.0		35.0	35.0	22.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

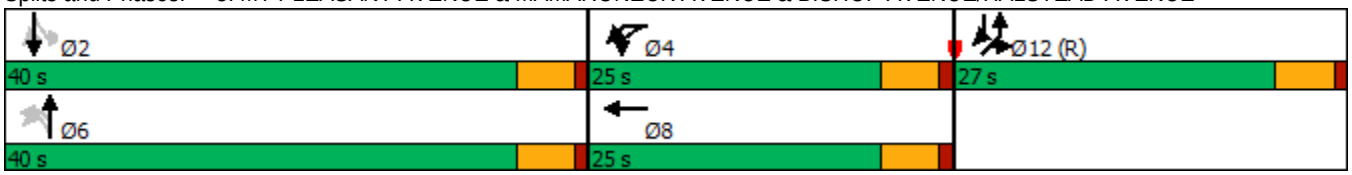
Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	302	153	48
Future Volume (vph)	302	153	48
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.98		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1415	0
Flt Permitted	0.950		
Satd. Flow (perm)	1576	1415	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	28		40
Peak Hour Factor	0.82	0.92	0.80
Heavy Vehicles (%)	1%	3%	2%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	368	166	60
Shared Lane Traffic (%)			
Lane Group Flow (vph)	368	226	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	27.0	27.0	
Total Split (%)	29.3%	29.3%	
Maximum Green (s)	22.0	22.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		20.0	20.0				35.0		35.0	35.0	57.0	
Actuated g/C Ratio		0.22	0.22				0.38		0.38	0.38	0.62	
v/c Ratio		0.72	0.64				0.50		0.90	0.70	0.48	
Control Delay		46.4	21.4				22.9		46.8	13.0	5.7	
Queue Delay		0.0	0.4				0.0		0.0	1.6	1.5	
Total Delay		46.4	21.8				22.9		46.8	14.5	7.2	
LOS		D	C				C		D	B	A	
Approach Delay			34.6				22.9			18.0		
Approach LOS			C				C			B		
Queue Length 50th (ft)		217	65				186		35	77	51	
Queue Length 95th (ft)		320	56				233		m#313	101	80	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		349	361				1048		221	622	815	
Starvation Cap Reductn		0	0				0		0	70	253	
Spillback Cap Reductn		0	12				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.72	0.66				0.50		0.90	0.79	0.69	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 100.6%		ICU Level of Service G	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

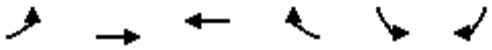
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



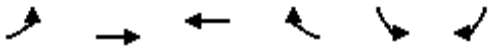


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	22.0	22.0	
Actuated g/C Ratio	0.24	0.24	
v/c Ratio	0.96	0.56	
Control Delay	73.1	25.4	
Queue Delay	0.0	0.0	
Total Delay	73.1	25.4	
LOS	E	C	
Approach Delay	54.9		
Approach LOS	D		
Queue Length 50th (ft)	339	115	
Queue Length 95th (ft)	#530	237	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	384	401	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.96	0.56	

Intersection Summary



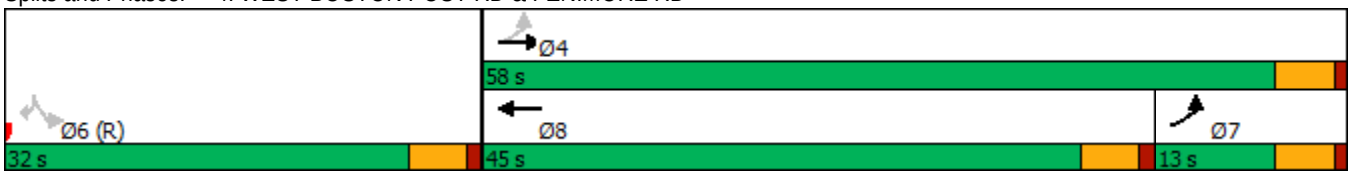
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	801	769	155	240	168
Future Volume (vph)	87	801	769	155	240	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00	0.99		0.98	0.98
Frt			0.972			0.850
Flt Protected		0.995			0.950	
Satd. Flow (prot)	0	3276	3193	0	1788	1530
Flt Permitted		0.626			0.950	
Satd. Flow (perm)	0	2061	3193	0	1750	1503
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			39			212
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	10			10	16	4
Peak Hour Factor	0.83	0.92	0.88	0.78	0.90	0.78
Heavy Vehicles (%)	5%	2%	1%	5%	0%	1%
Parking (#/hr)				6		
Adj. Flow (vph)	105	871	874	199	267	215
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	976	1073	0	267	215
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	7	4	8			
Permitted Phases	4				6	6
Minimum Split (s)	10.0	24.0	24.0		25.0	25.0
Total Split (s)	13.0	58.0	45.0		32.0	32.0
Total Split (%)	14.4%	64.4%	50.0%		35.6%	35.6%
Maximum Green (s)	8.0	53.0	40.0		27.0	27.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			

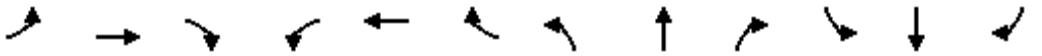


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		8.0	8.0		6.0	6.0
Flash Dont Walk (s)		11.0	11.0		14.0	14.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		53.0	40.0		27.0	27.0
Actuated g/C Ratio		0.59	0.44		0.30	0.30
v/c Ratio		0.74	0.75		0.51	0.36
Control Delay		18.9	23.9		30.1	5.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		18.9	23.9		30.1	5.6
LOS		B	C		C	A
Approach Delay		18.9	23.9		19.2	
Approach LOS		B	C		B	
Queue Length 50th (ft)		252	398		200	2
Queue Length 95th (ft)		330	506		321	50
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1321	1440		525	599
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.74	0.75		0.51	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.1		Intersection LOS: C	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			

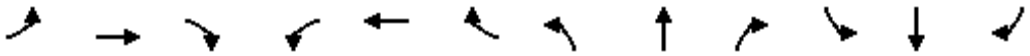
Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	634	91	40	612	116	102	34	60	114	36	191
Future Volume (vph)	186	634	91	40	612	116	102	34	60	114	36	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	12	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.974				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.964	
Satd. Flow (prot)	1593	3116	0	1516	2906	0	0	1636	1378	0	1732	1211
Flt Permitted	0.201			0.225				0.485			0.562	
Satd. Flow (perm)	337	3116	0	359	2906	0	0	823	1378	0	1010	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		19										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.90	0.97	0.71	0.82	0.89	0.80	0.80	0.80	0.80	0.71	0.69	0.71
Heavy Vehicles (%)	2%	2%	0%	0%	2%	0%	1%	0%	2%	2%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	207	654	128	49	688	145	128	43	75	161	52	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	782	0	49	833	0	0	171	75	0	213	269
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.14	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	20.0	54.0		20.0	54.0		36.0	36.0	36.0	36.0	36.0	20.0
Total Split (%)	14.7%	39.7%		14.7%	39.7%		26.5%	26.5%	26.5%	26.5%	26.5%	14.7%
Maximum Green (s)	15.0	49.0		15.0	49.0		31.0	31.0	31.0	31.0	31.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	64.7	49.5		64.7	49.5			31.3	31.3		31.3	51.6
Actuated g/C Ratio	0.52	0.39		0.52	0.39			0.25	0.25		0.25	0.41
v/c Ratio	0.64	0.63		0.15	0.73			0.83	0.22		0.85	0.54
Control Delay	43.7	34.5		20.6	38.8			79.6	43.0		76.0	35.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	43.7	34.5		20.6	38.8			79.6	43.0		76.0	35.7
LOS	D	C		C	D			E	D		E	D
Approach Delay		36.4			37.8			68.4			53.5	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	161	481		34	553			237	87		297	304
Queue Length 95th (ft)	247	602		64	678			#388	142		#339	335
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	325	1240		324	1146			205	344		252	497
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.64	0.63		0.15	0.73			0.83	0.22		0.85	0.54

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 43.1		Intersection LOS: D	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

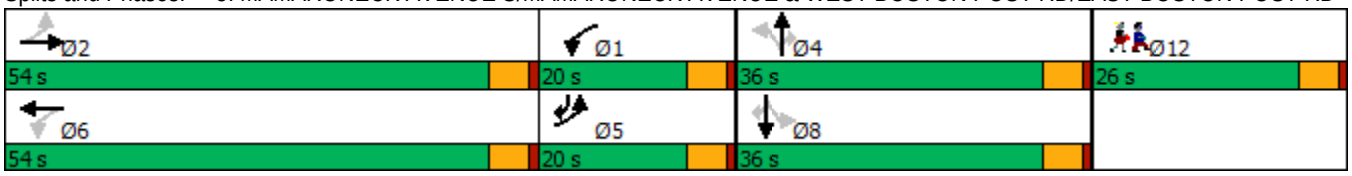
Intersection Summary

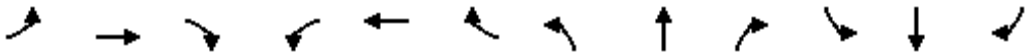
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

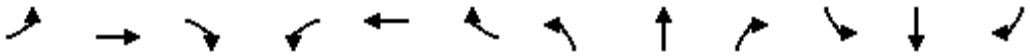
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	603	71	12	709	95	111	74	30	116	43	109
Future Volume (vph)	125	603	71	12	709	95	111	74	30	116	43	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	13	13	13	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	50		0	50		0	50		184	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.983			0.941			0.948	
Flt Protected		0.992			0.999		0.950				0.979	
Satd. Flow (prot)	0	3578	0	0	3615	0	1668	1611	0	0	1862	0
Flt Permitted		0.560			0.779		0.486				0.789	
Satd. Flow (perm)	0	2020	0	0	2819	0	853	1611	0	0	1501	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.79	0.90	0.71	0.75	0.83	0.84	0.82	0.80	0.50	0.82	0.72	0.88
Heavy Vehicles (%)	0%	2%	3%	0%	1%	4%	1%	4%	3%	0%	0%	0%
Adj. Flow (vph)	158	670	100	16	854	113	135	93	60	141	60	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	928	0	0	983	0	135	153	0	0	325	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	0.96	0.96	0.96	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		10.0	16.0		16.0	16.0	
Total Split (s)	23.0	46.0		21.0	44.0		11.0	46.0		35.0	35.0	
Total Split (%)	17.8%	35.7%		16.3%	34.1%		8.5%	35.7%		27.1%	27.1%	
Maximum Green (s)	17.0	40.0		15.0	38.0		6.0	40.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		5.0	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		40.1			38.1		40.3	39.3			28.3	
Actuated g/C Ratio		0.37			0.35		0.38	0.37			0.26	
v/c Ratio		1.05			0.93		0.37	0.26			0.82	
Control Delay		79.4			49.6		27.5	26.3			56.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		79.4			49.6		27.5	26.3			56.2	
LOS		E			D		C	C			E	
Approach Delay		79.4			49.6			26.9			56.2	
Approach LOS		E			D			C			E	
Queue Length 50th (ft)		~451			482		95	111			323	
Queue Length 95th (ft)		#943			#776		183	202			438	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)							50					
Base Capacity (vph)		886			1053		365	602			406	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		1.05			0.93		0.37	0.25			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 107.4			
Natural Cycle: 130			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 58.8		Intersection LOS: E	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	12
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

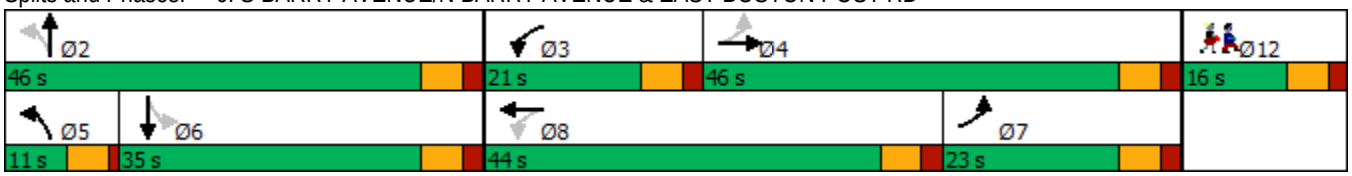
Intersection Summary

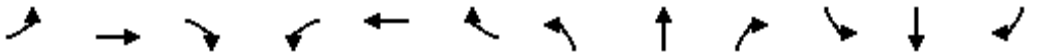
Analysis Period (min) 15

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

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

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD



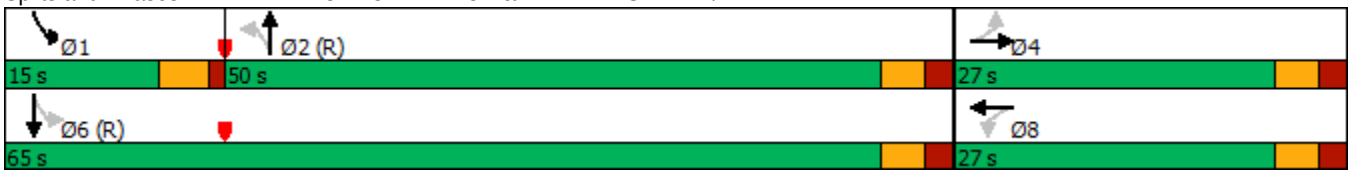


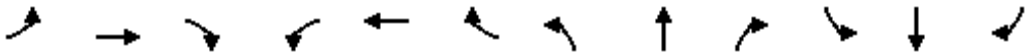
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	2	4	30	1	386	4	1010	36	184	873	12
Future Volume (vph)	16	2	4	30	1	386	4	1010	36	184	873	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	15	12	10	10	10	10	11	14	11	11	15
Storage Length (ft)	0		0	50		0	80		0	200		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		1.00		1.00			1.00	1.00		1.00	1.00	
Frt		0.967			0.851			0.994			0.997	
Flt Protected		0.969		0.950			0.950			0.950		
Satd. Flow (prot)	0	1776	0	1560	1494	0	1685	3384	0	1728	3399	0
Flt Permitted		0.520		0.736			0.286			0.139		
Satd. Flow (perm)	0	953	0	1206	1494	0	506	3384	0	253	3399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			253			6			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			447			2281			347	
Travel Time (s)		9.9			10.2			51.8			7.9	
Confl. Peds. (#/hr)			2	2			6		2	2		6
Peak Hour Factor	0.75	0.50	0.50	0.83	0.50	0.97	0.63	0.94	0.79	0.80	0.89	0.58
Heavy Vehicles (%)	6%	0%	25%	8%	0%	1%	0%	2%	2%	1%	2%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	2	0	1	1
Adj. Flow (vph)	21	4	8	36	2	398	6	1074	46	230	981	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	36	400	0	6	1120	0	230	1002	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	0.88	1.00	1.09	1.09	1.09	1.09	1.05	0.92	1.04	1.05	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.5	23.5		23.0	23.0		23.0	23.0		9.5	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		50.0	50.0		15.0	65.0	
Total Split (%)	29.3%	29.3%		29.3%	29.3%		54.3%	54.3%		16.3%	70.7%	
Maximum Green (s)	22.0	22.0		22.0	22.0		45.0	45.0		10.5	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0		5.0	5.0		4.5	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Act Effct Green (s)		22.0		22.0	22.0		45.0	45.0		60.5	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.24		0.24	0.24		0.49	0.49		0.66	0.65	
v/c Ratio		0.14		0.12	0.73		0.02	0.68		0.69	0.45	
Control Delay		24.4		28.9	20.5		12.8	20.4		21.5	8.6	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		24.4		28.9	20.5		12.8	20.4		21.5	8.6	
LOS		C		C	C		B	C		C	A	
Approach Delay		24.4			21.2			20.4			11.0	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		18		26	120		3	398		75	215	
Queue Length 95th (ft)		28		62	37		10	515		145	273	
Internal Link Dist (ft)		356			367			2201			267	
Turn Bay Length (ft)				50			80			200		
Base Capacity (vph)		233		288	549		247	1658		334	2218	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.13	0.73		0.02	0.68		0.69	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 65 (71%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: MAMARONECK AVENUE & ANDREW STREET/N BARRY EXTENDED



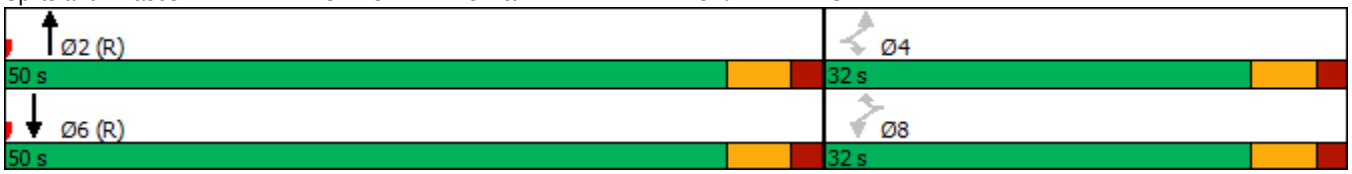


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	383	0	64	38	0	34	0	739	33	0	787	0
Future Volume (vph)	383	0	64	38	0	34	0	739	33	0	787	0
Ideal Flow (vphpl)	1900	1900	1000	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	12	11	16	12	12	12
Storage Length (ft)	130		0	0		0	0		60	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.93	0.94								
Frt			0.850			0.850		0.990				
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1501	0	700	1547	0	1272	0	3024	0	0	3185	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1501	0	648	1453	0	1272	0	3024	0	0	3185	0
Right Turn on Red			No			No			Yes			No
Satd. Flow (RTOR)								13				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		977			461			412			202	
Travel Time (s)		22.2			10.5			9.4			4.6	
Confl. Peds. (#/hr)			64	64								
Peak Hour Factor	0.97	0.25	0.73	0.59	0.25	0.65	0.92	0.91	0.60	0.92	0.89	0.92
Heavy Vehicles (%)	1%	0%	2%	5%	0%	0%	0%	3%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	1
Parking (#/hr)						5						
Adj. Flow (vph)	395	0	88	64	0	52	0	812	55	0	884	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	395	0	88	64	0	52	0	867	0	0	884	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.25	1.14	2.64	1.14	1.14	1.35	1.14	1.19	0.97	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm		Perm		NA			NA	
Protected Phases								2			6	
Permitted Phases	4		4	8		8						
Minimum Split (s)	31.0		31.0	31.0		31.0		23.0			37.0	
Total Split (s)	32.0		32.0	32.0		32.0		50.0			50.0	
Total Split (%)	39.0%		39.0%	39.0%		39.0%		61.0%			61.0%	
Maximum Green (s)	26.0		26.0	26.0		26.0		44.0			44.0	
Yellow Time (s)	4.0		4.0	4.0		4.0		4.0			4.0	
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0			2.0	
Lost Time Adjust (s)	0.0		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0	6.0		6.0		6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	10.0		10.0									
Flash Dont Walk (s)	15.0		15.0									
Pedestrian Calls (#/hr)	0		0									
Act Effct Green (s)	26.0		26.0	26.0		26.0		44.0			44.0	
Actuated g/C Ratio	0.32		0.32	0.32		0.32		0.54			0.54	
v/c Ratio	0.83		0.43	0.14		0.13		0.53			0.52	
Control Delay	43.3		30.1	21.1		21.1		13.6			13.5	
Queue Delay	0.0		0.0	0.0		0.0		3.0			0.0	
Total Delay	43.3		30.1	21.1		21.1		16.7			13.5	
LOS	D		C	C		C		B			B	
Approach Delay		40.9			21.1			16.7			13.5	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	298		57	37		30		223			228	
Queue Length 95th (ft)	#543		98	53		51		305			304	
Internal Link Dist (ft)		897			381			332			122	
Turn Bay Length (ft)	130											
Base Capacity (vph)	475		205	460		403		1628			1709	
Starvation Cap Reductn	0		0	0		0		631			0	
Spillback Cap Reductn	0		0	0		0		0			0	
Storage Cap Reductn	0		0	0		0		0			0	
Reduced v/c Ratio	0.83		0.43	0.14		0.13		0.87			0.52	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 82			
Actuated Cycle Length: 82			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MAMARONECK AVENUE & WAVERLY AVENUE/VAN RANST PL





Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	75	120	12	133	19	1	341	66	123	371	253	8
Future Volume (vph)	75	120	12	133	19	1	341	66	123	371	253	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	11	11	11	12
Grade (%)			-3%				0%			0%		
Storage Length (ft)		0		0		0		100	40		0	
Storage Lanes		1		0		0		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93	0.98				0.97		0.96		0.91	
Frt			0.868				0.973				0.850	
Flt Protected		0.950					0.996		0.950			
Satd. Flow (prot)	0	1607	1127	0	0	0	3036	0	1540	1637	1386	0
Flt Permitted		0.950					0.836		0.378			
Satd. Flow (perm)	0	1491	1127	0	0	0	2537	0	586	1637	1260	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			171				31				24	
Link Speed (mph)			30				30			30		
Link Distance (ft)			890				917			196		
Travel Time (s)			20.2				20.8			4.5		
Confl. Peds. (#/hr)	33			12	34	53		66	66		34	53
Peak Hour Factor	0.85	0.87	0.50	0.78	0.53	0.25	0.87	0.70	0.71	0.89	0.91	0.67
Heavy Vehicles (%)	2%	3%	0%	5%	0%	0%	2%	0%	2%	1%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	1	1
Parking (#/hr)			20					10				
Adj. Flow (vph)	88	138	24	171	36	4	392	94	173	417	278	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	195	0	0	0	526	0	173	417	290	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.48	1.12	1.14	1.14	1.14	0.97	1.19	1.19	1.20	1.14
Turning Speed (mph)	15	15		9	15	15		9	15		9	9
Turn Type	custom	custom	NA		Perm	Perm	NA		Perm	NA	pm+ov	
Protected Phases	4	4	8				6			2	12	
Permitted Phases	4	4			6	6	6		2	2	2	
Minimum Split (s)	26.0	26.0	26.0		35.0	35.0	35.0		23.0	23.0	23.0	
Total Split (s)	27.0	27.0	27.0		38.0	38.0	38.0		38.0	38.0	27.0	
Total Split (%)	29.3%	29.3%	29.3%		41.3%	41.3%	41.3%		41.3%	41.3%	29.3%	
Maximum Green (s)	22.0	22.0	22.0		33.0	33.0	33.0		33.0	33.0	22.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0				0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0				5.0		5.0	5.0	5.0	
Lead/Lag												

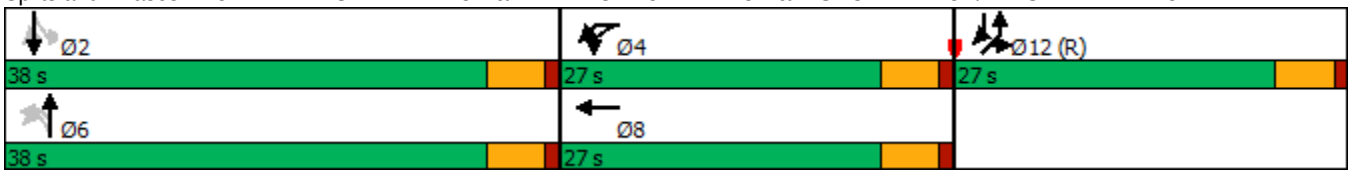


Lane Group	NEL	NER	NER2
Lane Configurations			
Traffic Volume (vph)	262	136	31
Future Volume (vph)	262	136	31
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	16
Grade (%)	0%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	0.99		
Frt		0.850	
Flt Protected	0.950		
Satd. Flow (prot)	1608	1454	0
Flt Permitted	0.950		
Satd. Flow (perm)	1592	1454	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		83	
Link Speed (mph)	30		
Link Distance (ft)	603		
Travel Time (s)	13.7		
Confl. Peds. (#/hr)	12		33
Peak Hour Factor	0.84	0.90	0.70
Heavy Vehicles (%)	1%	0%	0%
Bus Blockages (#/hr)	0	0	0
Parking (#/hr)			
Adj. Flow (vph)	312	151	44
Shared Lane Traffic (%)			
Lane Group Flow (vph)	312	195	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	12		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.14	1.14	0.97
Turning Speed (mph)	15	9	9
Turn Type	Prot	Prot	
Protected Phases	12	12	
Permitted Phases			
Minimum Split (s)	23.0	23.0	
Total Split (s)	27.0	27.0	
Total Split (%)	29.3%	29.3%	
Maximum Green (s)	22.0	22.0	
Yellow Time (s)	4.0	4.0	
All-Red Time (s)	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	5.0	5.0	
Lead/Lag			

Lane Group	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		15.0	15.0	15.0					
Flash Dont Walk (s)	14.0	14.0	14.0		15.0	15.0	15.0					
Pedestrian Calls (#/hr)	0	0	0		0	0	0					
Act Effct Green (s)		22.0	22.0				33.0		33.0	33.0	55.0	
Actuated g/C Ratio		0.24	0.24				0.36		0.36	0.36	0.60	
v/c Ratio		0.59	0.49				0.57		0.82	0.71	0.37	
Control Delay		38.2	11.3				25.1		42.1	17.2	4.5	
Queue Delay		0.0	0.1				0.0		0.9	0.7	1.2	
Total Delay		38.2	11.4				25.1		43.0	17.9	5.7	
LOS		D	B				C		D	B	A	
Approach Delay			25.8				25.1			18.8		
Approach LOS			C				C			B		
Queue Length 50th (ft)		187	17				192		56	91	30	
Queue Length 95th (ft)		297	0				263		#87	512	45	
Internal Link Dist (ft)			810				837			116		
Turn Bay Length (ft)									40			
Base Capacity (vph)		384	399				929		210	587	793	
Starvation Cap Reductn		0	0				0		3	35	301	
Spillback Cap Reductn		0	13				0		0	0	0	
Storage Cap Reductn		0	0				0		0	0	0	
Reduced v/c Ratio		0.59	0.51				0.57		0.84	0.76	0.59	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 92			
Actuated Cycle Length: 92			
Offset: 0 (0%), Referenced to phase 12:NEL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Pretimed			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 97.0%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

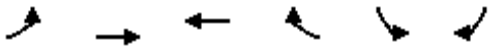
Splits and Phases: 3: MT PLEASANT AVENUE & MAMARONECK AVENUE & BISHOP AVENUE/HALSTEAD AVENUE



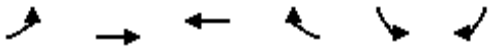


Lane Group	NEL	NER	NER2
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	22.0	22.0	
Actuated g/C Ratio	0.24	0.24	
v/c Ratio	0.81	0.48	
Control Delay	51.4	21.3	
Queue Delay	0.0	0.0	
Total Delay	51.4	21.3	
LOS	D	C	
Approach Delay	39.8		
Approach LOS	D		
Queue Length 50th (ft)	275	86	
Queue Length 95th (ft)	#436	193	
Internal Link Dist (ft)	523		
Turn Bay Length (ft)			
Base Capacity (vph)	384	410	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.81	0.48	

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	754	719	106	188	248
Future Volume (vph)	125	754	719	106	188	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	11	10
Grade (%)		0%	0%		-5%	
Storage Length (ft)	0			0	0	144
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor			0.98		0.99	0.99
Frt			0.949			0.850
Flt Protected		0.994			0.950	
Satd. Flow (prot)	0	3115	3117	0	1771	1530
Flt Permitted		0.539			0.950	
Satd. Flow (perm)	0	1689	3117	0	1747	1509
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			133			89
Link Speed (mph)		30	30		30	
Link Distance (ft)		790	1540		1358	
Travel Time (s)		18.0	35.0		30.9	
Confl. Peds. (#/hr)	11			11	10	1
Peak Hour Factor	0.97	0.88	0.88	0.25	0.90	0.84
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%
Parking (#/hr)		1		6		
Adj. Flow (vph)	129	857	817	424	209	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	1241	0	209	295
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		11	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.09	1.17	1.09	1.09	1.01	1.06
Turning Speed (mph)	15			9	15	9
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	7	4	8			7
Permitted Phases	4				6	6
Minimum Split (s)	10.0	24.0	24.0		25.0	10.0
Total Split (s)	13.0	58.0	45.0		32.0	13.0
Total Split (%)	14.4%	64.4%	50.0%		35.6%	14.4%
Maximum Green (s)	8.0	53.0	40.0		27.0	8.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag	Lag		Lead			Lag
Lead-Lag Optimize?	Yes		Yes			Yes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Walk Time (s)		8.0	8.0		6.0	
Flash Dont Walk (s)		11.0	11.0		14.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)		53.0	40.0		27.0	35.0
Actuated g/C Ratio		0.59	0.44		0.30	0.39
v/c Ratio		0.88	0.85		0.40	0.46
Control Delay		29.1	26.9		27.9	14.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		29.1	26.9		27.9	14.9
LOS		C	C		C	B
Approach Delay		29.1	26.9		20.3	
Approach LOS		C	C		C	
Queue Length 50th (ft)		261	466		150	118
Queue Length 95th (ft)		#356	596		251	196
Internal Link Dist (ft)		710	1460		1278	
Turn Bay Length (ft)						144
Base Capacity (vph)		1121	1459		524	643
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.88	0.85		0.40	0.46

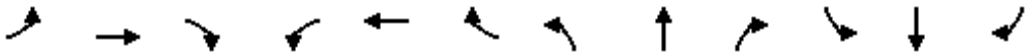
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 4: WEST BOSTON POST RD & FENIMORE RD



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	592	105	25	509	115	115	40	54	117	62	166
Future Volume (vph)	177	592	105	25	509	115	115	40	54	117	62	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	10	10	12	13	12	11	13	14	12
Storage Length (ft)	50		0	80		0	0		0	0		130
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.970				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.972	
Satd. Flow (prot)	1593	3091	0	1516	2895	0	0	1648	1405	0	1763	1211
Flt Permitted	0.245			0.130				0.494			0.584	
Satd. Flow (perm)	411	3091	0	207	2895	0	0	845	1405	0	1059	1211
Right Turn on Red			Yes			No			No			No
Satd. Flow (RTOR)		31										
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1540			2113			399			959	
Travel Time (s)		35.0			48.0			9.1			21.8	
Peak Hour Factor	0.95	0.79	0.48	0.44	0.88	0.79	0.80	0.80	0.80	0.91	0.67	0.89
Heavy Vehicles (%)	2%	2%	0%	0%	1%	4%	0%	0%	0%	1%	0%	2%
Parking (#/hr)			10									10
Adj. Flow (vph)	186	749	219	57	578	146	144	50	68	129	93	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	968	0	57	724	0	0	194	68	0	222	187
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.19	1.25	1.25	1.14	1.10	1.14	1.19	1.10	1.05	1.40
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4			8	5
Permitted Phases	2	2		6	6		4	4	4	8	8	8
Detector Phase	5	2		1	6		4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	55.0		20.0	55.0		35.0	35.0	35.0	35.0	35.0	20.0
Total Split (s)	19.0	52.0		19.0	52.0		39.0	39.0	39.0	39.0	39.0	19.0
Total Split (%)	14.0%	38.2%		14.0%	38.2%		28.7%	28.7%	28.7%	28.7%	28.7%	14.0%
Maximum Green (s)	14.0	47.0		14.0	47.0		34.0	34.0	34.0	34.0	34.0	14.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	61.7	47.5		61.7	47.5			34.4	34.4		34.4	53.6
Actuated g/C Ratio	0.49	0.38		0.49	0.38			0.27	0.27		0.27	0.43
v/c Ratio	0.56	0.81		0.23	0.66			0.84	0.18		0.77	0.36
Control Delay	38.2	42.3		30.5	37.9			75.6	39.9		63.1	29.6
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	38.2	42.3		30.5	37.9			75.6	39.9		63.1	29.6
LOS	D	D		C	D			E	D		E	C
Approach Delay		41.7			37.3			66.4			47.8	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	150	660		42	468			269	76		300	189
Queue Length 95th (ft)	232	665		39	572			#424	127		319	298
Internal Link Dist (ft)		1460			2033			319			879	
Turn Bay Length (ft)	50			80								130
Base Capacity (vph)	335	1188		249	1094			231	384		289	516
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.56	0.81		0.23	0.66			0.84	0.18		0.77	0.36

Intersection Summary			
Area Type:	CBD		
Cycle Length: 136			
Actuated Cycle Length: 125.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 43.8		Intersection LOS: D	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	26.0
Total Split (s)	26.0
Total Split (%)	19%
Maximum Green (s)	21.0
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	6.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

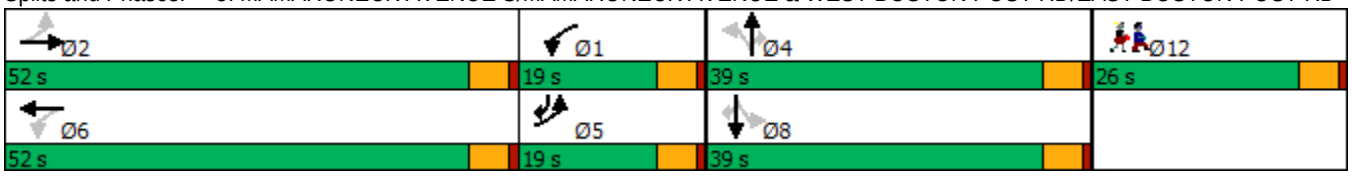
Intersection Summary

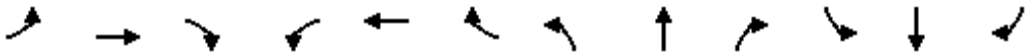
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

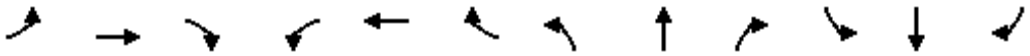
Splits and Phases: 5: MAMARONECK AVENUE S/MAMARONECK AVENUE & WEST BOSTON POST RD/EAST BOSTON POST RD





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	533	83	18	572	85	88	38	19	72	49	83
Future Volume (vph)	104	533	83	18	572	85	88	38	19	72	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	13	13	13	10	10	15	14	14	14
Grade (%)		0%			0%			0%			2%	
Storage Length (ft)	50		0	50		0	0		184	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.980			0.952			0.945	
Flt Protected		0.992			0.998		0.950				0.983	
Satd. Flow (prot)	0	3551	0	0	3583	0	1652	1608	0	0	1836	0
Flt Permitted		0.700			0.764		0.464				0.850	
Satd. Flow (perm)	0	2506	0	0	2743	0	807	1608	0	0	1587	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		182			446			853			1110	
Travel Time (s)		4.1			10.1			19.4			25.2	
Peak Hour Factor	0.79	0.90	0.80	0.75	0.89	0.83	0.85	0.63	0.68	0.92	0.88	0.90
Heavy Vehicles (%)	1%	2%	5%	6%	1%	6%	2%	5%	5%	3%	2%	0%
Adj. Flow (vph)	132	592	104	24	643	102	104	60	28	78	56	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	828	0	0	769	0	104	88	0	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	0.96	0.96	0.96	0.96	0.96	1.09	1.09	0.88	0.93	0.93	0.93
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	23.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	16.0	26.0		13.0	29.0		11.0	16.0		16.0	16.0	
Total Split (s)	23.0	46.0		21.0	44.0		11.0	46.0		35.0	35.0	
Total Split (%)	17.8%	35.7%		16.3%	34.1%		8.5%	35.7%		27.1%	27.1%	
Maximum Green (s)	17.0	40.0		15.0	38.0		6.5	40.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0			6.0	
Lead/Lag	Lag	Lag		Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		35.2			34.0		32.4	30.9			19.5	
Actuated g/C Ratio		0.36			0.35		0.33	0.32			0.20	
v/c Ratio		0.83			0.75		0.32	0.17			0.71	
Control Delay		39.6			34.6		28.6	27.7			51.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		39.6			34.6		28.6	27.7			51.3	
LOS		D			C		C	C			D	
Approach Delay		39.6			34.6			28.2			51.3	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		306			280		68	59			198	
Queue Length 95th (ft)		#655			545		152	97			380	
Internal Link Dist (ft)		102			366			773			1030	
Turn Bay Length (ft)												
Base Capacity (vph)		1159			1173		327	685			490	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.71			0.66		0.32	0.13			0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129			
Actuated Cycle Length: 97.3			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	

Lane Group	Ø12
Turn Type	
Protected Phases	12
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	16.0
Total Split (s)	16.0
Total Split (%)	12%
Maximum Green (s)	10.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	4.0
Flash Dont Walk (s)	6.0
Pedestrian Calls (#/hr)	20
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: S BARRY AVENUE/N BARRY AVENUE & EAST BOSTON POST RD

