Expanded Environmental Assessment: Coastal Conservation District – Woodmere Club

Town of Hempstead
Village of Lawrence
Village of Woodsburgh

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MAY 2020

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1. Introduction

1.1. Proposed Action and Project Description

The Proposed Action consists of the adoption of the Coastal Conservation District – Woodmere Club (CC-WC) within the Town of Hempstead and the contiguous Villages of Lawrence and Woodsburgh. This action is authorized by General Municipal Law, 239-NN, Town Law 284 and Village Law 7-741 and is further enabled through an Intermunicipal Cooperation Agreement (IMA), which was passed on November 13, 2019 by the Village of Woodsburgh, December 10, 2019 by the Town of Hempstead and January 9, 2020 by the Village of Lawrence. This cooperative agreement recognizes the regional significance of the Woodmere Club property, including its unique environmental attributes and functions and its contribution to local community character. While each municipality would adopt its own Coastal Conservation District – Woodmere Club code, the distinct characteristics and vulnerabilities of this property in relation to the existing and surrounding community highlighted the need to coordinate regulation of this environmentally-sensitive coastal property. With the Woodmere Club spanning these three jurisdictions, it became clear that a coordinated approach was the best method to preserve the natural mitigative function of this shared coastal area.

The Coastal Conservation District – Woodmere Club (CC-WC) establishes zoning regulations creating three Sub-Districts: the Open Space/Recreation Sub-District (±83.3 acres/70% of the subject property), the Single-Family Residential Sub-District (±29.4 acres/24% of the subject property), and the Clubhouse/Hospitality Sub-District (±5.7 acres/5% of the subject property). While the Open Space/Recreation Sub-District and Single-Family Residential Sub-District span all three jurisdictions, the Clubhouse/Hospitality Sub-District is located entirely within the Village of Woodsburgh. A copy of the proposed Coastal Conservation District – Woodmere Club (CC-WC) is provided in Appendix A.

Also, in furtherance of the authority provided in the General Municipal Law, Town Law and Village Law, each municipality is to consider authorizing its legislative board to adopt its form of the District, in the form contained in Appendix A, and thus agree to provide for intergovernmental planning and zoning as effectuated thereby.

1.2. Project Location

The Proposed Action affects land comprising the privately-owned golf club commonly known as The Woodmere Club, and referred to herein as the Woodmere Club Property (Nassau County Land & Tax Map Section 41, Block F, Lots 37, 40, 48, 310, 123/3024 (Lot Grouping), 3028, 3030A/3030B (Lot Grouping), and 3032; Section 41, Block D, Lots 53 and 55; and Section 41, Block 72, Lot 1/3/4/5A/5B/6-9/11-12 (Lot Grouping)). Based on the Nassau County Geographic

Information System (GIS) Tax Parcel database (Roll Year 2018-2019)[1], the Woodmere Club property is approximately 118 acres in size, located partially in the Town of Hempstead (±55 acres), and partially in the adjacent contiguous Village of Lawrence (±22.9 acres), and partially in the adjacent contiguous Village of Woodsburgh (±40.5 acres). It is generally bounded by Broadway to the north, Atlantic Avenue to the south, Meadow Drive to the east, and several small local roads to the west, including Iris Street, Tulip Street, Rose Street and Sherwood Lane. A significant portion of the property, primarily within the Village of Woodsburgh, is located directly on the waterfront of the Woodmere Channel. See Project Location Map below (Figure 1-1).

[1] Nassau County Geographic Information System (GIS). *Tax Parcels: Roll Year 2018-2019.*

Figure 1-1: Project Location Map – the Woodmere Club

1.3. Project History, Purpose and Need

Over the past decade, golf participation has dropped nearly 17 percent nationally and more than 800 golf courses have closed across the U.S., with many courses being redeveloped with alternative land uses such as housing. Within the State of New York, 34 golf courses have been closed within the last five years (ranking ninth by state in the nation), with several planning to close in the next few years. In response to shrinking golf club membership, particularly at 18-hole private golf clubs, and with the potential conversion of the golf courses to residential use, both the Town of Hempstead (beginning in 2016) and Village of Woodsburgh (in 2018) enacted independent development moratoriums to study the potential impacts of development under existing zoning and subdivision regulations.

While the Town and contiguous Villages are not seeking or actively encouraging redevelopment of its golf courses, they are cognizant of the financial pressures facing these courses and the potential for conversion to other land uses. According to the National Golf Foundation's Chief Business Officer, "This gradual reduction is indicative of the market's healthy self-balancing of supply and demand, and a trend we expect to continue for several more years."

On November 15, 2016, the Hempstead Town Board adopted Resolution No. 1541-2016, which amended Section 302 of Article XXXI of the Building Zone Ordinance of the Town of Hempstead (§302 (R)) to enact a Temporary Moratorium on Residential Development of Certain Golf Course Properties (hereinafter 'TOH Moratorium'). The TOH Moratorium was subsequently extended, pursuant to §302 (R) 3, on May 9, 2017 (Resolution No.726-2017), August 8, 2017 (Resolution No. 1169-2017), November 14, 2017 (Resolution No. 1649-2017) and February 6, 2018 (Resolution No. 198-2018). A copy of Resolution No. 1541-2016, which contains the full TOH Moratorium language, is provided in Appendix D.

The Moratorium was enacted to give the Town the opportunity to fully analyze the potential for conversion of golf courses to residential developments within the Town, and to assess the impacts related to these potential conversions – with a particular focus on achieving consistency with existing federal and state environmental regulations, as well as consistency between the Town's zoning regulations and the surrounding residential villages. Specifically, the Moratorium states:

> *…The Town Board has noted that these villages have zoning regulations which include minimum lot sizes and other area requirements for single family dwellings which are far in excess of the Town's existing zoning district regulations which allow for development of detached single or two-family dwellings.*
>
> *As such, the Town Board believes that as a matter of sound land-use planning, it is a prudent action to impose a moratorium at this time on issuing of building permits for residential development of existing golf course properties if any portion of such golf*

course property is adjacent to or fairly proximate to one or more incorporated villages that are primarily developed with single family residences

Pursuant to the Moratorium, the overall goal is to ensure that "area character and property values be preserved, enhanced, and protected for the benefit of Town residents, both within incorporated villages and in the unincorporated areas of the Town." This study includes existing zoning build-out analysis and recommendations for proposed amendments to the Town Code that would preserve the residential nature of the Town's existing communities, complement the character of the surrounding residential villages and protect sensitive environmental and cultural resources.

In February 2016, the Village of Woodsburgh retained a planning consultant to advise the Village Board of Trustees regarding potential impacts relating to development of a portion of the waterfront area of the Woodmere Club with 22 townhomes. Impacts with potentially significant magnitude were identified by the consultant, including: (a) location of the townhomes in relation to surface waters and the abutting shoreline; (b) location in a significant ecological habitat; (c) increased flooding caused by increases in stormwater runoff and altered drainage patterns; (d) changes in traffic and parking demand; and (e) inconsistency with the existing community character.

In February 2018, the Village of Woodsburgh retained a planning consultant to conduct an assessment of potential buildout of properties throughout the Village and to include those properties partially within the Village given existing land use regulations and conduct a review of the Village Zoning Code and Village Code sections affecting redevelopment, subdivision regulation and environmental protections.

On October 29, 2018, the Village of Woodsburgh passed a moratorium (hereinafter 'Village Moratorium') on subdivisions within the Village, primarily concerned with potential impacts to drainage, infrastructure, traffic and local aesthetic impacts. The Village retained a planning and engineering consulting firm to further study these potential impacts and provide recommendations for management of Village's properties having the potential to subdivide. A copy of the Village Moratorium is provided in Appendix D.

Thereafter, the Village of Woodsburgh initiated a comprehensive planning analysis. The analysis identified existing conditions, defined community character and captured the vision of residents through surveys and public meetings. Woodsburgh then adopted a comprehensive planning document entitled the "Village of Woodsburgh Vision Plan". A copy is provided in Appendix F.

As it exists today, the Woodmere Club is a private country club that was sold in 2018, and according to publicly known information the current property owner now has proposed to redevelop the entire project site with 285 single-family homes in or after 2022. This redevelopment plan is known as the Willow View Estates Subdivision Plan and is currently undergoing environmental review by the Nassau County Planning Commission. A copy of this subdivision plan is provided in Appendix E.

As a result of the owner's intent to redevelopment, and a review of the pending application which maximizes the redevelopment of the Woodmere Club under the current zoning regulations, and in light of the potentially significant environmental and community character impacts that redevelopment would have, the communities surrounding the Woodmere Club called for a coordinated response to ensure the responsible future development of the subject property. The existing zoning regulations affecting this property, particularly within the Town of Hempstead, are inadequate to effectively manage such a significant and valuable coastal open space. These outdated zoning codes did not contemplate the wholesale redevelopment of these critical open space areas, nor did they recognize the rapidly evolving environmental conditions of the 21st century (i.e., sea-level rise, storm severity and frequency). In addition, the proposed CC-WC district addresses long-standing incompatibilities between the Town of Hempstead Residence B District (minimum lot area of 6,000 square feet) and the adjacent contiguous Villages of Lawrence (minimum lot area of 40,000 square feet) and Woodsburgh (minimum lot area of one-acre/43,560 square feet) and is consistent with planning analyses performed by the Village of Woodsburgh and Town of Hempstead.

1.4. Approach and Methodology

As envisioned by the proposed zoning codes for the three municipalities, the majority of the property would be preserved as open space (either as passive parkland or through the operation of a nine-hole golf course), the existing Clubhouse (entirely within the Village of Woodsburgh) would remain for catering and have a small added hospitality use, and two clusters of single-family homes concentrated within two distinct residential Sub-Districts would be permitted (see Figure 1-2 below, which illustrates the three proposed Sub-Districts within the Coastal Conservation District).

Figure 1-2: Proposed Coastal Conservation District – Woodmere Club Sub-Districts

Given the sensitive environmental and cultural resources located at the Woodmere Club, the use of cluster or conservation subdivision layouts serves as an alternative to standard residential subdivision layouts. A cluster or conservation subdivision approach aims to preserve open space and protect environmentally-sensitive areas by grouping (or siting) development away from the most vulnerable areas. It is particularly useful in areas prone to natural hazards (such as low-lying, flood-prone, coastal areas).

This Expanded Environmental Assessment (EEA) has been prepared to document potential environmental impacts associated with residential conversion at the Woodmere Club. Overall, this EEA provides a description of the proposed action (including project history and coordinated municipal agreement), potential impact analysis of residential conversion under existing zoning, and potential impact analysis under the proposed Coastal Conservation District – Woodmere Club (CC-WC). This level of analysis allows for comparison between the existing zoning and the proposed zoning districts, which have been developed as a mitigative measure to reduce impacts from redevelopment for the impacts associated with residential build-out under existing zoning. To aid in this assessment, a potential development layout was prepared following the provisions of the proposed Coastal Conservation District – Woodmere Club (see Figure 1-3 below) and includes a general golf course concept permitted within the Open Space/Recreation Sub-District.

Figure 1-3: Conceptual Development Layout under the Proposed Coastal Conservation District – Woodmere Club

It is important to note that neither this assessment, nor the adoption of any related zoning amendments, would preclude the requirement for any future application for land subdivision/development to perform a full environmental review in accordance with the State Environmental Quality Review Act (SEQRA). In addition, any changes to Town or Village zoning regulations would not supersede any existing federal or state regulations. The recognition of these existing environmental regulations was critical in the formulation of the proposed zoning district, as the proposed district has been designed to align with existing New York State Department of Environmental Conservation (NYS DEC) Tidal Wetlands (Part 661) and Sea-Level Rise planning regulations (Part 490) and allow for conformance with Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) requirements. A summary of the approach, process and methodology behind this assessment and the mitigation development is provided below.

<u>Development of An Intermunicipal Coordinated Agreement</u>

Initial analysis of the Woodmere Club development potential was initiated by the Town of Hempstead. This analysis began with an initial screening of the Town's private golf courses that are adjacent or "fairly proximate to one or more incorporated villages", which includes The Woodmere Club, Rockville Links Club and Hempstead Golf and Country Club. Existing zoning and lot sizes of these courses were reviewed to develop a potential residential yield for each course. Initially, the analysis focused on typical residential development, which, at any of these courses could have the potential to impact local traffic and increase demand for community services (including schools, police, fire/EMS and local utilities).

However, during this initial screening, it became evident that The Woodmere Club, in addition to its proximity to the Villages of Woodsburgh and Lawrence, featured an increased number of environmental and cultural resources that have the potential to be impacted by residential build-out. The Rockville Links Club and Hempstead Golf and Country Club are not affected by these resources (and associated regulations). Due to its low-lying coastal location, The Woodmere Club is located adjacent to NYS DEC mapped tidal wetlands and is subject to coastal flooding (both from storm surge and heavy rain events). Due to the presence of these tidal wetlands, NYS DEC identifies The Woodmere Club and surrounding area as 'Natural Communities Vicinity' – which identifies areas within one-half mile of a Significant Natural Community. Looking towards the future, this low-lying area would also be significantly impacted by even modest amounts of sea-level rise (projections based on New York State's science-based projections of sea-level rise - 6 NYCRR Part 490, Projected Sea-level Rise). In addition, the majority of The Woodmere Club features a very shallow depth to groundwater[2] – as low as one foot in several areas. NYS DEC also indicates the potential for Rare Plants and Animals on certain portions of The Woodmere Club.

[2] United States Geological Survey (USGS) Hydrologic Conditions Maps for Long Island, NY, 2013.

Finally, the New York State Office of Parks, Recreation and Historic Preservation has identified the potential for archaeological sensitive areas within the area.

The Woodmere Club is also located within the New York State Coastal Area Boundary, which was established by the New York State Coastal Management Program in accordance with the requirements of the Coastal Zone Management Act of 1972. This is an important regulatory designation, as the New York State Coastal Management Program not only seeks to regulate coastal activities within its purview; it also works to coordinate existing programs and regulations associated with the coastal area.

These factors, along with its location spanning three municipal boundaries, necessitated a coordinated and comprehensive approach to land use regulation.

1.5. Previous Planning Efforts

The proposed Coastal Conservation District – Woodmere Club was developed to better protect the area's critical environmental resources, align with existing federal and state priorities and regulations, and provide greater zoning consistency across all three municipalities.

However, prior to the development of the IMA and CC-WC district, several related planning initiatives were implemented by the Town of Hempstead and the Village of Woodsburgh, which largely stemmed from local residents concerned with the potentially significant impacts identified under the existing zoning redevelopment scenario. Ultimately, these initiatives helped to inform the provisions of both the IMA and CC-WC district, providing both public feedback and additional opportunities to analyze critical land use regulations.

Town of Hempstead

2018 Zoning Study

In 2018, the Town of Hempstead initiated a comprehensive zoning analysis of the Town's portion of the Woodmere Club property (approximately 55 acres of the ±118-acre site) to examine existing environmental conditions, assess potential significant adverse impacts associated with buildout under existing zoning and update the Town's zoning code to minimize adverse impacts of this sensitive coastal property. The analysis found that a reduction in overall yield, achieved through increased lot sizes (20,000 and 40,000 square foot lots), would help to minimize potential impacts, improve consistency with neighboring Village land use regulations and better align Town land use regulations with existing State and Federal regulations (i.e., tidal wetlands regulations, National Flood Insurance Program regulations). Ultimately, feedback from the public requested that the Town perform additional studies related to the future of the Woodmere Club, including an in-depth study of the feasibility of a local park district, which is explained below.

Creation of a Municipal Park or Local Park District

One of the initial options analyzed by the Town of Hempstead was the potential conversion of the golf course to municipal parkland. Given the overall acreage and waterfront locations of the golf course, as well as the permissible uses within the Residence B District (a municipal park is an allowable use), this alternative was initially considered, however, based on the following factors, it was determined infeasible. As overall acreage of the Woodmere Club is quite large, (approximately 118 acres), a municipal park located at this site would be regional in nature and feature a full spectrum of activities and facilities. Such a park would be open to all residents in the Town (approximately 770,367 residents) and would require significant programming and events (i.e., athletic fields, youth leagues, regional events etc.).

Based on these parameters, the overall cost of acquisition, development, debt service, operations/maintenance and periodic facility improvements would be very significant expenses for the Town. Such a facility would also not produce tax revenues.

Therefore, the overall cost of developing a new regional municipal park, along with the elimination of tax revenues from these properties, would likely result in a significant adverse fiscal impact to the Town. Such a use would significantly increase some of the more localized potential impacts, such as traffic, noise, visual impacts (i.e., lighting/equipment for athletic fields) and significant site disturbances associated with athletic fields.

As the regional municipal park was determined to be infeasible for the Town of Hempstead, at the request of local residents, also explored the feasibility of the creation of local park district. The establishment of such a district requires a significant amount of feasibility analysis, comprising a multi-step process involving both local residents (residing in both the Town, as well as neighboring Villages), property owners, the Town of Hempstead and the adjacent contiguous Villages of Lawrence and Woodsburgh. Following this process, a public referendum would have to pass to allow the formation of the park district. However, this initial feasibility study never reached the public referendum process, as feedback from community residents who would fall within the local park district radius rejected the large annual tax increase projected with the establishment of such a district.

Senior/Assisted Living Development

The Town also explored potential alternate land uses at the subject property – including a potential senior/assisted living facility. While such land uses are often classified as lower intensity uses with reduced impacts to community services (particularly to schools), there are several potential impacts that could be significant under this development scenario. Compared to single-family homes, senior/assisted living facilities typically require a higher level of density - and as a result, generally feature increased building height and bulk. In addition, the daily operations of these facilities, which would include both dedicated staff and visiting services, could potentially increase local traffic levels. Finally, while any new development would be required to comply with federal flood regulations, it is generally considered poor planning to purposefully place vulnerable populations in a hazard-prone area. By nature, senior or assisted living facilities in this location would be directing a vulnerable population to an area that not only experiences extreme weather events (i.e. Superstorm Sandy) but also experiences frequent nuisance flooding. In either scenario, these populations are less able to effectively prepare, cope and respond to such events, thereby increasing risks to a vulnerable population. Based on these potential impacts, it was determined that dedicated senior/assisted living facilities would not be appropriate at these coastal locations.

Village of Woodsburgh

Planning Analysis and Vision Plan 2018-2019

The Village of Woodsburgh Village Board began discussions in 2017 related to comprehensive planning and initiated a contract with the environmental planning firm Nelson, Pope & Voorhis ("NPV") in January 2018 to prepare an analysis of potential development buildout given existing land use regulations and other factors and assess the potential impact on environmental resources and community character. NPV conducted a preliminary review of the existing Village Zoning Districts and relevant code sections affecting redevelopment, as well as an inventory and analysis of existing conditions and environmental protections. The potential buildout of the Village included all oversized and potentially developable parcels, which included the entirety of the Village as well as portions of the two (2) golf courses which are not wholly within the geographical boundaries of the Village, but which have portions in and abutting the Village.

NPV analyzed resource impact considerations with a specific assessment of parks and recreation, traffic, groundwater and surface water quality (relating to flooding, storm-water runoff, fertilizer and pesticide use), community character, aesthetics/visual character, historic and cultural resources and community services. The planning analysis concluded that a full buildout would create a significant change in the character of the community and recommended that the Village consider implementing measures appropriate to retaining neighborhood character and enhanced protections of environmental and recreational resources.

Thereafter, the Village Board authorized NPV to prepare a comprehensive plan at its March 2019 meeting. The planning analysis completed during 2018 provided the foundation for the Woodsburgh Vision Plan. The Vision Plan was prepared with additional analysis and public input from residents of the Village of Woodsburgh through an online resident survey and a public open house. Following a public hearing, the Vision Plan was adopted by the Village Board in December 2019. A copy of the Vision Plan is provided in Appendix F.

Other Community Planning Initiatives

Five Towns New York Rising Community Reconstruction Program

As part of a statewide community planning initiative focusing on resiliency in the wake of Superstorm Sandy, both the Village of Lawrence and the hamlet of Woodmere (Town of Hempstead) participated in the Five Towns New York Rising Community Reconstruction Program (NYRCR). As described in the NYRCR Plan, the community developed a series of projects identified as having the greatest benefit in increasing the Five Towns Community's resilience to future climate related events. These projects will be implemented with up to $27,600,000 in Community Development Block Grant-Disaster Recovery (CDBG-DR) funds allocated to the Community through the NYRCR Program.

As part of the process the community developed a vision that prioritized community resilience and preparedness, as well as improved coordination among the various Villages and hamlets in the area. The community vision is provided below:

The vision for the Five Towns is for a future in which these eight distinct communities will be better prepared, no matter the disaster, and for an improved system of cooperation and collaboration between the Villages and Hamlets to build upon their shared resources.

The NYRCR Plan further outlined the critical role of this coastal area, both in terms of everyday stormwater management, as well as severe storm surge and inundation. Ultimately, the Plan developed three key strategies to guide this planning effort. The first community strategy focused on the importance of coastal protection and the area's functional role related to flooding. Strategy 1 is provided below:

> *1. Increase the resilience to extreme weather in high risk coastal areas by addressing coastal protections and stormwater infrastructure.*
>
> *The coastline is the first and most critical line of defense in protecting the NYRCR Community from inundation associated with Sandy-like storms. Though Superstorm Sandy was an unprecedented event, the sources and causes of flooding that occurred during Superstorm Sandy are regularly reflected on a smaller scale during high tide events, rainstorms, and nor'easters. Flooding overwhelms stormwater infrastructure systems not only in the Five Towns Community, but in other communities along the South Shore as well. The shoreline of Hempstead Bay provides incomplete protection against tidal inundation above seven to eight feet.*

Implementation of these strategies and associated projects is currently underway, with several projects having already been completed.

2. Environmental Conditions

There are numerous environmental conditions that could affect the both future development as well as the natural attributes and functions of the subject property. In sensitive and vulnerable low-lying communities, the impact of climate change is the most critical environmental issue. As discussed below, the changing climate has already taken shape and continues to evolve, in the form of rising sea levels, more frequent and intense storms and extreme flooding.[3]

Development regulations and land use laws must address future conditions, including great risks of coastal flooding presented by sea level rise and enhanced storm surge, inland flooding expected to result from increasingly frequent extreme precipitation events and the risk of compound flooding, resulting from simultaneous storm surge and heavy precipitation.

2.1. Sea-Level Rise

The golf course at the Woodmere Club is located on low-lying coastal areas, principally built upon filled marshland. A topographic map using United States Geological Service (USGS) Light Detection and Ranging (LiDAR, 2014) shows that the land elevations on the course are quite low, ranging from 0-14 feet (see Figure 2-1 below).

[3] NYS DEC Draft NYS Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act, Page. iv.

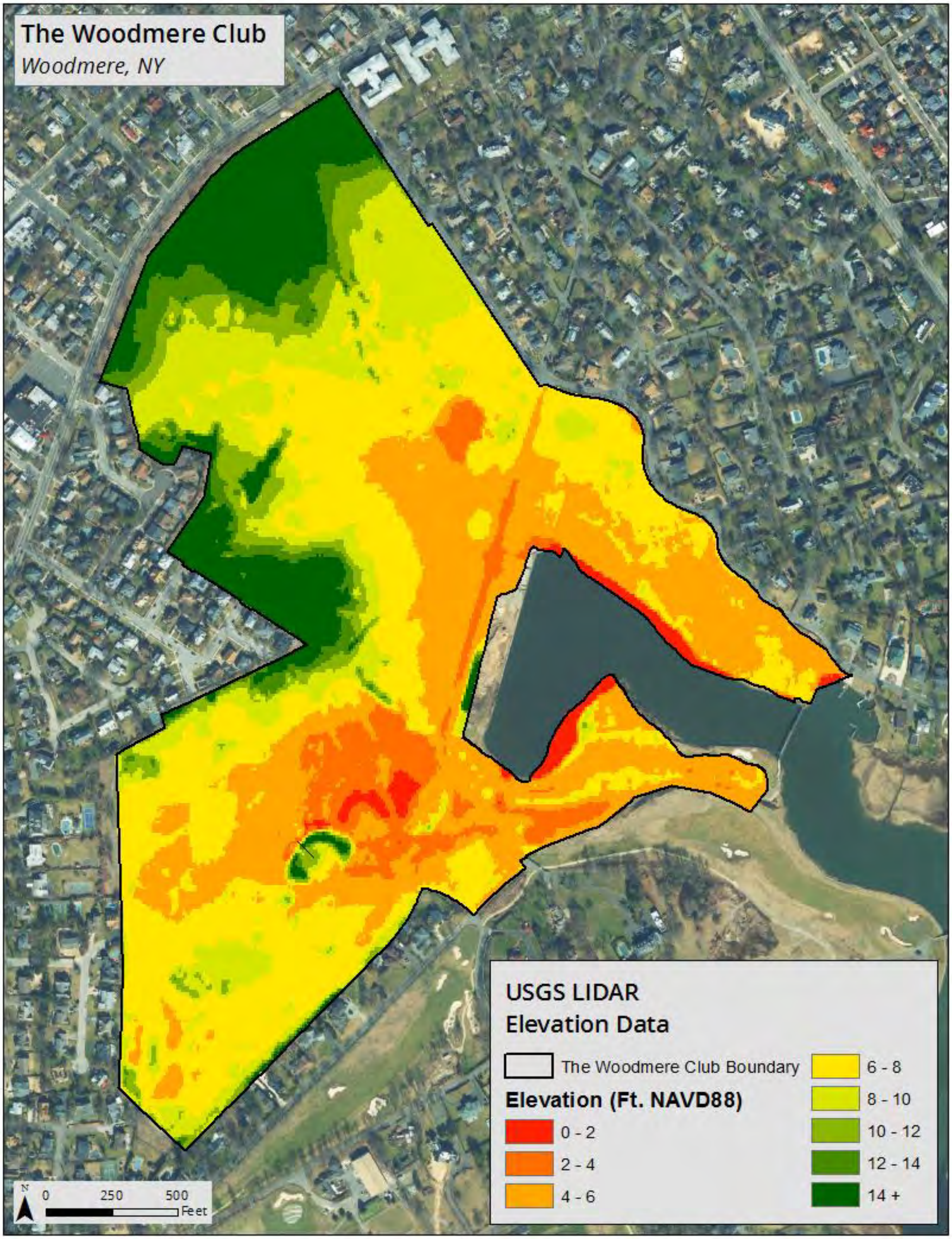


Figure 2-1: USGS LIDAR Elevation Data

These areas would be particularly vulnerable to any impacts associated with sea-level rise. Sea-level rise has begun to permanently affect communities and critical infrastructure in New York, which has experienced at least a foot of sea-level rise since 1900, mostly due to the expansion of warming ocean water. Local sea levels are affected by ocean currents, gravitational forces, prevailing winds, and rise and fall of the land mass. Within the coastal regions of New York State, the land mass is sinking as a result of geological forces and impacts of human activity and development. Perhaps the most significant impact associated with sea-level rise is an increased exposure to flooding – both from storm surge events (see Section 2.2 below) as well as typical rain events and high tides. Looking toward the future, even utilizing the most conservative/modest estimate for Long Island's projected sea-level rise, coastal areas would be impacted by rising seas. New York State's adopted, science-based projections of sea-level rise are presented in Table 2-1 below. Five (5) projections are provided for four (4) different time periods, which are qualitative terms referring to the rate of rise and not to ultimate water level itself.

Table 2-1: NYS DEC Long Island Region Sea-Level Rise Projections[4]

Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	21 inches	34 inches	47 inches	72 inches

To illustrate the impacts of relatively modest sea-level rise, a typical 10-year rainfall event (see Figure 2-2) and a stronger 100-year storm (see Figure 2-3) was modeled using the New York State Energy Research & Development Authority (NYSERDA) Sea Level Rise Scenario Tool. Under both scenarios, 12 inches of sea-level rise was modeled, which roughly correlates to the Low-Medium Projection scenario for the 2050s.

[4] 6 NYCRR Part 490, Projected Sea-level Rise. *(based on New York State's science-based projections of sea-level rise)*

Figure 2-2: Sea-Level Rise Model – 12 inches/10-year storm

Figure 2-3: Sea-Level Rise Model – 12 inches/100-year storm

The lighter shade of blue shows the additional flooding to be expected under this sea-level rise scenario. Interestingly, as shown in the model results above the largest delta between current conditions and future sea-level rise conditions came with the more common 10-year storm, as opposed to the larger 100- and 500-year storms (under these scenarios, anticipated flood levels would be relatively similar to current conditions). This indicates that tangible impacts from sea-level rise (with just typical rainfall events) will continue to be experienced at increasing frequencies for the local community. While this model serves as a useful tool for assessing these types and extent of potential impacts, planning for this area must also consider that such events, regardless of intensity, will be occurring at more frequent intervals in the future, further exacerbating sea-level rise impacts.

Sea level rise has major consequences for New York's low-lying coastal communities, including magnification of dangerous storm surges caused by high winds and tides, which increase the risk of flooding, erosion and damage to private property and infrastructure, increased areas of coastal inundation during regular tide cycles and regular inundation of coastal wastewater infrastructure and the consequent impacts on the area’s coastal waters and ecology. These impacts are already occurring in this community.

Sea-level rise is not addressed within the existing Town or Village regulations. To that end, the proposed CC-WC district addresses sea-level rise in terms of both an increase in flooding associated with typical rainfall events, as well as storm surge flooding and severe storm events. Coastal land use regulation must provide effective measures to address both of these potential sea-level rise impacts. A detailed analysis of these potential flood impacts, under existing and proposed zoning, is provided in Section 2.3, with key sea-level rise provisions highlighted below.

To improve daily stormwater management, the proposed CC-WC district provides additional regulations related to stormwater storage and recharge, effectively requiring a volumetric design for an eight-inch rainfall event for the entire subject property/subdivision, as well as a volumetric design of a three-inch rainfall event per building lot. Green infrastructure, such as rain gardens and bioswales are incentivized through a stormwater credit that reduces the per lot volumetric design requirement to a one and one-half-inch rainfall event. In addition, the proposed CC-WC district encourages the use of permeable pavement surfaces while further limiting impervious coverage on each lot.

To address severe storms and coastal storm surges, the proposed CC-WC district layout provides for a continuous perimeter coastal buffer area around the subject property. Whether this portion of the property is used as open space, passive parkland or maintained as a nine-hole golf course, the Open Space/Recreational Sub-District plays a critical role in providing flood storage and protecting existing development. Recognizing the importance of this area, this Sub-District accounts for approximately 70% of the subject property. A maximum-yield subdivision under existing zoning, such as the Willow View Estates Subdivision Plan (Appendix E), does not account for any of these critical concerns related to sea-level rise. As development is maximized throughout the property, there is a near total loss of coastal open space and as a result, minimal space to allow for flood storage.

In addition, a maximum-yield subdivision, with minimal open space and flood storage, is more susceptible to flood impacts associated with high groundwater. As groundwater levels are extremely high in this area, stormwater design and efficacy are further limited by depth to groundwater. The use of traditional techniques, such as piped stormwater detention basins, can be easily impacted by such high groundwater conditions. As such, the preservation of approximately 70% of the subject property, as regulated by the CC-WC Open Space/Recreational Sub-District, plays an extremely significant role in flood storage and recharge at the subject property.

The proposed CC-WC district represents an intermunicipal plan that addresses future physical climate risk changes due to sea level rise, storm surge and flooding. The risks to both private and public existing and future development from flooding in this location under current and anticipated future conditions necessitate multi-jurisdictional regulation guided by preservation and protection. The CC-WC district incorporates climate change considerations, while preserving both existing development and infrastructure, as well as protecting future development from the virtual certainty of increasing flood risks as time progresses.

2.2. Storm Surge and Coastal Flooding

The Woodmere Club clubhouse and the property was substantially inundated by Superstorm Sandy. Both the location of the course and the existing topography of the coastal area makes storm surge a major concern for any future residential development. Storm surge is a dramatic elevation of the sea surface that leads to rapid flooding and is caused by the combined effects of sea water pushed landward during a storm, low pressure at the sea surface, and high tides. With higher baseline sea levels, the effects of storm surge will be felt further inland. Further, the frequency of surge events of a given intensity is expected to increase with increased sea level. The location of the Woodmere Club clubhouse is particularly vulnerable, as it falls within the Category 1 Hurricane Storm Surge Zone. Category 1 hurricanes cause damage under sustained winds of 74-95 mph. This means that the Woodmere Club clubhouse is susceptible to damage from any named hurricane, not just the most severe storms. The remainder of the project site falls within the Category 1-3 Storm Surge Zones. The extent of storm surge from Superstorm Sandy is provided in Figure 2-4 below. The only area of the club that was spared severe inundation during the Superstorm Sandy was the higher lying (10-14 feet) area along Broadway.

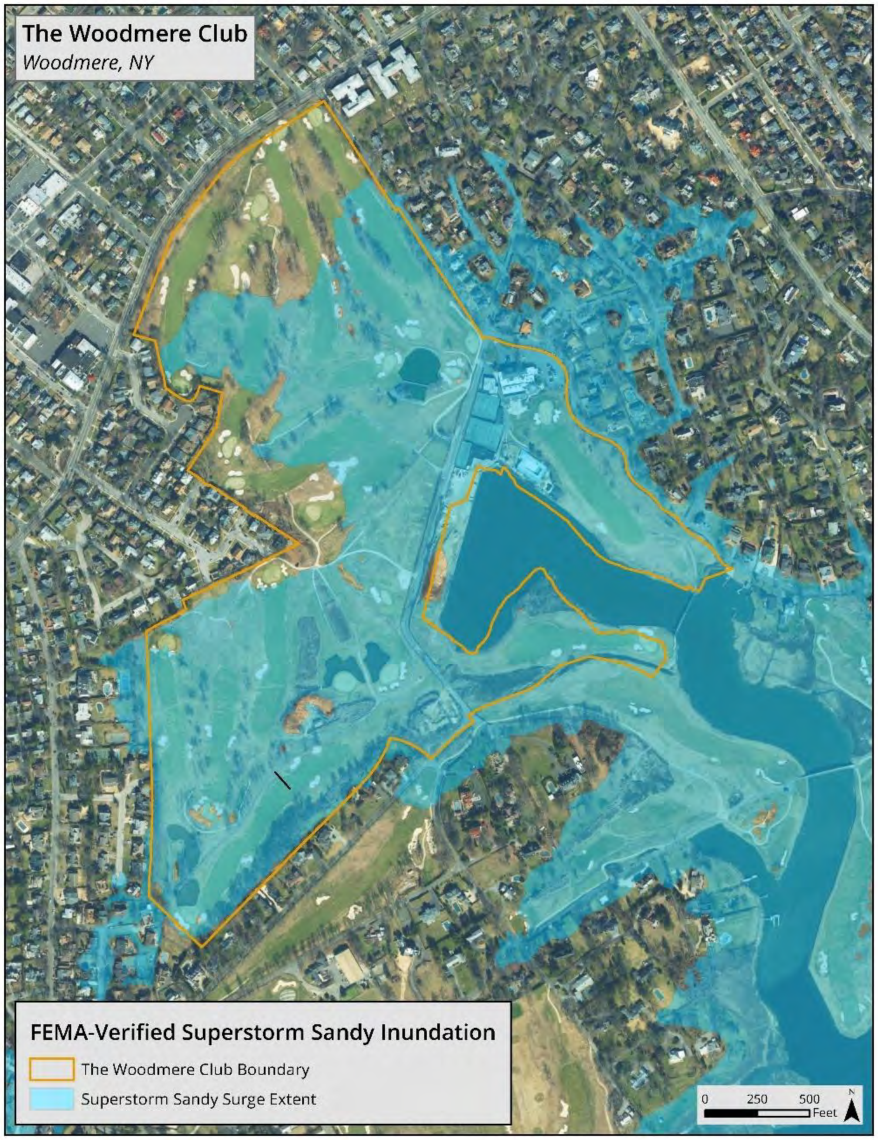


Figure 2-4: Superstorm Sandy Inundation at the Woodmere Club

In response to persistent flooding along the back bays of the south shore of Long Island, an interagency agreement between the United States Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (NYS DEC), and Nassau County was signed in October 2016 to begin the *Nassau County Back Bays* coastal storm risk management feasibility study. The Woodmere Club is within the study area for this project. Rising sea levels will expand the areas experiencing all types of inundation and flooding and push their boundaries further inland.

As noted in Section 2.1 above, severe flooding will become more frequent as the sea rises. To address severe coastal storm surges, the proposed CC-WC district layout provides a critical coastal buffer area that is absent from existing zoning and subdivision regulations. Particularly with the area's low-lying elevations, this continuous perimeter coastal buffer area around the subject property is the greater community's primary coastal defense. Whether this portion of the property is used as open space, passive parkland or maintained as a nine-hole golf course, the Open Space/Recreational Sub-District (approximately 70% of the subject property) plays a critical role in providing flood storage and protecting existing development.

2.3. Floodplain Management

The majority of the land area of the Woodmere Club is located within the National Flood Insurance Program (NFIP) Special Flood Hazard Area (SFHA), which is commonly-referred to as the 100-year floodplain (Zone AE in this area). A map showing the extent of the 100 year floodplain at the Woodmere Club Property, as well as associated base flood elevations (BFE), are provided in Figure 2-5. The locations of both residential sub-districts are in areas that generally have a BFE of nine (9) feet or ten (10) feet.

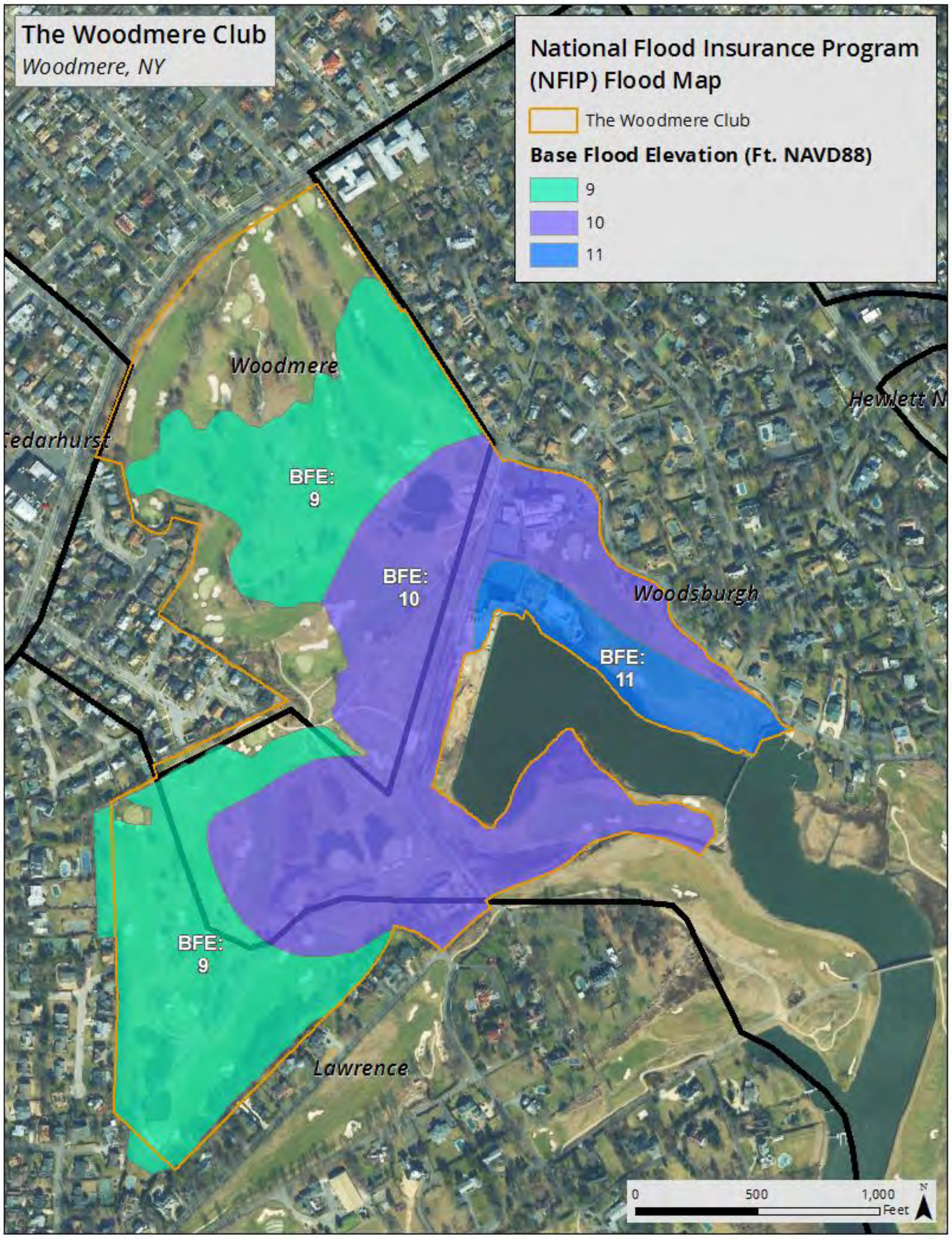


Figure 2-5: National Flood Insurance Program Base Flood Elevations

While the Federal Emergency Management Agency (FEMA) regulates the construction provisions associated with the NFIP, it also provides regulatory authority for municipalities to adopt community-wide floodplain management practices.

According to the *National Flood Insurance Program (NFIP) Regulations: Floodplain Management Criteria [44 CFR Part 60.3(c)(10)]* communities with designated special flood hazard areas (including the Town of Hempstead, Village of Lawrence and Village of Woodsburgh), shall:

> *Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.*

Notably, the federal regulation provided above specifically addresses potential flood impacts not only on the subject and adjacent properties, but also at any location within the community.

Within New York State, communities are granted local floodplain regulatory authority through Article 36 of the Environmental Conservation Law (ECL). The Town of Hempstead and the Villages of Lawrence and Woodsburgh have adopted such requirements for development within the floodplain. Local flood damage prevention laws are based on FEMA standards and require technical evaluations to minimize any potential adverse effects. According to NYS DEC guidance[5], detailed hydraulic analyses are not typically required for all developments but should be required for large developments with a large quantity of fill.

Additionally, one of the key principles of local flood regulation is the concept of compensatory storage.[6] FEMA explains compensatory storage as follows:

> *Especially in flat areas, the floodplain provides a valuable function by storing floodwaters. When fill or buildings are placed in the flood fringe, the flood storage areas are lost and flood heights will go up because there is less room for the floodwaters. This is particularly important in smaller watersheds which respond sooner to changes in the topography. One approach that may be used to address this issue is to require compensatory storage to offset any loss of flood storage capacity.*

Compensatory storage preserves the ability of the floodplain to store water. Compensatory storage means that loss of flood storage due to buildings or fill dirt in the floodplain is compensated for by providing an equal volume of storage to replace what is lost.

[5] New York State Department of Environmental Conservation. *Floodplain Development And Floodway Guidance.* Accessed February 12, 2020 <https://www.dec.ny.gov/lands/24281.html>
[6] Federal Emergency Management Agency. *Compensatory* Storage. Accessed February 12, 2020 <https://www.fema.gov/compensatory-storage>

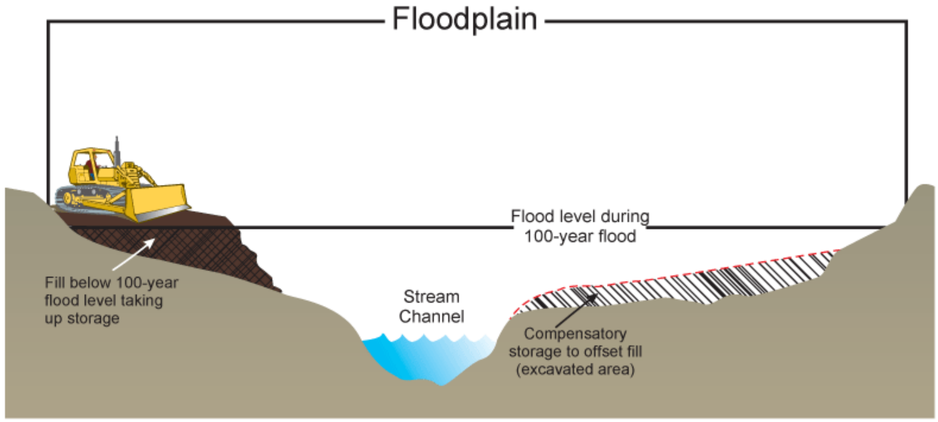


Figure 2-6: Visual Representation of Compensatory Storage

While all three municipalities generally have similar floodplain regulations (derived from the FEMA/NYS regulations cited above), the Village of Lawrence (*Article V Construction Standards: §94-13 General Standards)* and Village of Woodsburgh (*Article V Construction Standards. §77-15 General Standards*) have adopted provisions for compensatory storage while the Town of Hempstead (*Article XXXIV Flood Hazard Zones: §352 Construction Standards)* does not have a compensatory storage provision. However, the intent of the Intermunicipal Agreement, along with the proposed CC-WC district, is to provide coordinated land use regulation, including floodplain regulation among all three municipalities, particularly where impacts span across municipal boundaries. In this instance, while the Town of Hempstead does not have a codified compensatory storage regulation, effective floodplain management at the subject property requires a coordinated approach for the entire property. The proposed CC-WC district provides an opportunity to regulate the entire subject property as a whole, thereby reducing this potential for fill-induced local flood impacts.

Understanding floodplain management guidance from FEMA and NYS DEC, along with the existing floodplain regulations adopted by each municipality, the proposed CC-WC district recognizes that flood prevention and mitigation is not limited to site-specific elevation, as it is currently regulated through the NFIP, or to the limits of a municipal boundary. By implementing a coordinated, site-wide approach to flood mitigation (e.g., clustered residential development areas with expansive and continuous perimeter open space area with restrictions on the use of fill and tree removals in this area), potential flood impacts are addressed in a coordinated manner across the whole property, including the provision of compensatory storage, with particular concern for impacts to surrounding areas.

In addition, the geographical configuration and position of the Woodmere Channel exacerbates flood impacts at the subject property, with this neck of water acting similar to a riverine environment. While flood waters would typically be expected to disperse over a wide, straight coastal floodplain, at the Woodmere Club, flood waters tend to be directed to/from this relatively narrow channel. As shown in Figure 2-4 above, flooding during Superstorm Sandy was heavily concentrated around Woodmere Channel and did not evenly disperse along the coastline. The proposed CC-WC district recognizes the unique geographical setting of the subject property at the terminus of Woodmere Channel and the flood impacts associated with this location.

In contrast, a traditional subdivision layout that seeks to maximize yield would likely attempt to raise the grade of the majority of the site to comply with NFIP regulations. With existing grades falling significantly below NFIP Base Flood Elevations throughout much of the site, many areas would require six feet of fill or more to meet the required BFE plus freeboard elevation. As such, the proposed CC-WC regulations for use of fill within the Open Space/Recreational Sub-District are consistent with FEMA's explanation of the effects of earthen fill within a Special Flood Hazard Area. As stated by FEMA:[7]

> *Earthen fill is sometimes placed in a Special Flood Hazard Area (SFHA) to reduce flood risk to the filled area. The placement of fill is considered development and will require a permit under applicable Federal, state and local laws, ordinances, and regulations. Fill is prohibited within the floodway unless it has been demonstrated that it will not result in any increase in flood levels. Some communities limit the use of fill in the flood fringe to protect storage capacity or require compensatory storage.*

A maximum yield subdivision would also not allow for adequate compensatory storage, resulting in potential significant adverse impacts on the surrounding community. This could result in significant adverse flood impacts for neighboring properties and limit the ability for the subject property to provide the flood mitigation it currently provides to the general area.

To assess the magnitude of these potential flood impacts, Cameron Engineering & Associates performed a preliminary engineering analysis of the potential impacts associated with the proposed raising of existing ground elevations for the proposed Willow View Estates Subdivision Plan.

The analysis modeled existing ground elevations and the FEMA Flood Insurance Rate Map 100-year flood elevations to calculate the approximate flood water storage volume that exists today on the Woodmere Club Property and compared that to the flood water volumes that would be displaced by the ground elevations proposed in the Willow View Estates Subdivision Plan (representative of a traditional, maximum-yield subdivision).

When comparing existing ground elevations, floodplain elevations, and the proposed grading conditions, the proposed maximum-yield subdivision design would displace approximately 6,048,000 cubic feet (224,000 cubic yards) of flood waters as calculated from the limits of

[7] Federal Emergency Management Agency. *Fill.* Accessed February 12, 2020 <https://www.fema.gov/fill>

proposed grading disturbance shown on the Willow View Estates Subdivision engineering plans. Table 2-2, Figure 2-7 and Figure 2-8 show the loss of flood storage volume under full build-out compared to existing conditions.

For comparison purposes, this volume of floodwater equates to 45,239,040 gallons of floodwater that would be displaced, most likely into the immediate surrounding communities, potentially impacting homeowners and businesses with new flooding patterns and more significant flooding depths than have been experienced in past storm events.

Table 2-2: Approximate Flood Volume Storage Under Existing Conditions and as Proposed on the Willow View Estates Subdivision Plan[8]

SITE CONDITION	CUBIC YARDS	CUBIC FEET (CY x 27)	GALLONS (CF x 7.48)
EXISTING	328,000	8,856,000	66,242,880
PROPOSED	104,000	2,808,000	21,003,840
VOLUME DISPLACED	224,000	6,048,000	45,239,040

[8] Notes:
1. Existing site condition sourced from GIS data.
2. Proposed condition sourced from VHB plans dated Nov. 15, 2018 with digitized contours.
3. Floodplain data sourced from FEMA base flood elevations.

Figure 2-7: Approximate Flood Storage Volume (Existing Conditions)

Figure 2-8: Approximate Flood Storage Volume (Willow View Estates Subdivision Plan)

Along the coast, and particularly in low-lying coastal areas, it is imperative that local governments, as stewards or the environment and protectors of their community safety, health and welfare, assure that flood risk mitigation measures effectively preserve the floodplain and surrounding areas. The goal of managing a floodplain is not only to ensure that new development is reasonably safe from flooding but to address existing risks, to avoid increasing risk to others and to sustain natural capacities to slow and diffuse flood flows. Reducing development in a flood-prone area allows the natural landscape to absorb more floodwaters, reduce flooding to adjacent areas, recharging groundwater and sustaining healthy ecosystems.

2.4. Tidal Wetlands

The Woodmere Club is contiguous to a larger tidal wetland complex and contains a small portion of wetlands/surface waters (identified as Low Salt Marsh and High Salt Marsh communities). In general, the boundaries of the proposed residential Sub-Districts, which utilize a clustered, conservation subdivision approach, are located at least 600 feet from the edge of the marine channel that is contiguous to the subject property. The Woodmere Channel is a wetland with federal jurisdiction that has bulkheads installed along the western shoreline and the northern shoreline that is closest to the clubhouse area. As such, these residential Sub-Districts are located outside of NYS DEC's tidal wetland jurisdictional zone. However, given the sensitivity of this land and proximity to such sensitive coastal resources, such regulations should inform future development in this area. Development restrictions set forth by NYS DEC for development within adjacent areas to tidal wetlands provide useful context for the development of the proposed CC-WC district.

A summary of the NYS DEC policy on clustering (*6 CRR-NY 661.6 Subsection 6*) in wetland-adjacent areas is provided below:

(6) Notwithstanding the minimum lot size provisions contained in paragraph (5) of this subdivision, the clustering of principal buildings utilized for residential purposes, including multiple family dwellings, shall be permitted at the request of an applicant for a permit under this Part in order to encourage the maintenance of undeveloped areas in or adjoining tidal wetlands. Provided, such clustering procedure shall in no case result in more principal buildings on the area regulated by this Part than would be permitted by the application of the minimum lot size criteria in paragraph (5) of this subdivision.

Again, while the Woodmere Club is not subject to such regulations, the intent of this clustering provision is advanced through the proposed CC-WC district. Most notably, the proposed CC-WC district preserves approximately 70% of the property as open space/recreational space, ensuring that development is located as far as possible from nearby coastal resources. The clustering approach used in the CC-WC also preserves this open space in the form of a contiguous buffer surrounding the entire property, rather than the piecemeal provision of yard areas and small swaths of common space, as would occur with development under existing zoning regulations.

2.5. Ecology

The Woodmere Club is entirely within an area that is identified as having natural communities within one-half mile of the location (indicating the presence of a nearby Significant Natural Community) on the NYS DEC Environmental Resource Mapper (ERM). The nearest area located adjacent to the Woodmere Club property that is identified as a Significant Natural Community is a narrow strip along the north side of the channel, southeast of the existing clubhouse. There is also a larger Significant Natural Community area located further along the shoreline but is not located adjacent to the Woodmere Club property. This Community is designated as such due to the presence of tidal wetlands, which can serve as a critical habitat to many coastal species.

The NYS DEC ERM also indicated that portions of the Woodmere Club have the potential for Rare Plants and/or Animals. The NYS DEC New York Nature Explorer indicates that within the past 10 years there had been a sighting of a Yellow-crowned Night-Heron, which is a protected bird species, in this area. However, this area is currently encompassed by a golf course and is adjacent to existing residential neighborhoods, which limits access for individuals that share information on sightings which are indicators of local biodiversity. The Nature Explorer also listed four (4) flowering plants that are designated endangered or threatened that have historically been seen in this area but have not been spotted in at least 70 years.

Village of Woodsburgh Ecological Analysis

As part of the Village of Woodsburgh Vision Plan (prepared by Nelson, Pope & Voorhis), a Village-wide ecological survey of potential habitats was performed. As much of Village (and surrounding area) is developed with residential uses, the Village's golf courses (the Woodmere Club and the Rockaway Hunting Club), are the only areas serving as open space in the immediate vicinity. Vegetation is mainly comprised of landscaping and manicured lawn areas within residential properties and the golf course properties. Site inspections of the Village conducted on May 7, 2019 and January 28, 2020 indicated a prevalence of non-native and highly invasive species along much of the Woodmere Club waterfront (see Figure 2-9). These species include Common Reed (*Phragmites australis*), Asiatic Bittersweet (*Celastrus orbiculatus*) and Mugwort (*Artemisia vulgaris*).

Figure 2-9: Ecological Resources Map (Village of Woodsburgh)

While the golf course areas are considered open space, their overall ecological value is lessened by the presence of the turf grasses associated with the fairways, greens and roughs. Diminished breeding habitats may be present for some species of typical passerine birds and small mammals tolerant of human activity (e.g., Robins, Wrens, Mice). The open areas of the golf course offer grazing areas for species of geese such as Brant (*Branta bernicla*) and Canada Goose (*Branta canadensis*), especially in winter when the course is utilized less.

In contrast to the terrestrial landscape, the tidal waters of West Hempstead Bay and associated islands offer an undeveloped, open ecosystem that is of significant conservation concern. According to the Significant Habitats and Habitat Complexes of the New York Bight Watershed, this area, in conjunction with the Middle and East Hempstead Bays and South Oyster Bay, is identified as the Hempstead Bays – South Oyster Bay Complex, and is an area of particular ecological importance due to the presence of multiple species of nesting shorebirds of various state and federal protected levels. Sea turtle habitats are also present, which likely occur on an infrequent manner. Additionally, the Northern Diamondback Terrapin (*Malaclemys t. terrapin*) is known to nest within the Hempstead Bays – South Oyster Bay Complex and sightings have been reported in the area by residents of the Village.

The majority of the shoreline within the Village, including Woodmere Channel, is hardened. There is a small high marsh area is present within the middle portions of Woodmere Channel. Although limited, this area represents one of the most ecologically viable areas within the boundaries of the Village. The high marsh area is approximately two acres and may include potential habitat and nesting areas for certain protected shorebird species.

Based on these initial assessments, any future development of the golf course would require further, site-specific ecological investigations to determine if there would be development constraints associated with these habitats and potential rare plants and/or animals. Therefore, the impact of these potential issues on the development of the subject property is unknown at this time. At such time when an application is put forth, a site-specific ecological analysis would be done to determine any impacts.

2.6. Cultural Resources

The Woodmere Club is located within an area mapped by the New York State Office of Park, Recreation, and Historic Preservation (OPRHP) as a potential archaeological sensitive area. This does not indicate definite archeological resources, but rather, that this resource should be investigated during subsequent SEQRA review. Prior to any development at this golf course, further consultation with OPRHP would be required. The OPRHP environmental review process[9] is described below:

> *"The Environmental Review program is an interdisciplinary process that involves all SHPO [State Historic Preservation Office] program areas. Project review is conducted in two stages. First, the Survey and Evaluation assesses a property to determine whether or not it is listed in the New York State or National Registers of Historic Places. If not, it is evaluated to determine whether or not it meets the criteria to be included in the registers. If listed or determined eligible for listing, then the second stage of the review is undertaken. This portion of the review involves the staff of the Technical Services Unit who determine whether or not the proposed action/project will have an impact/effect on the qualities of the property that make it eligible. For projects that involve new construction or the significant expansion of existing buildings, the project will also be reviewed by the staff of the Archaeology Unit who determine whether or not the project site falls within a known area of archeological sensitivity. If so, they will request phased surveys to determine the extent of the potential impact."*

[9] https://parks.ny.gov/shpo/environmental-review/

The overall impact and magnitude of these potential issues on the development of the golf course is generally unknown at this time. As such, at the time an application is put forth, further analysis would be required to determine any potential impacts. These analyses could include archeological investigations, ecological surveys and site-specific flood/sea-level rise modeling.

3. Comparative Impact Analysis

Overall analysis was initiated with a review of existing land uses as well as residential zoning in both the Town of Hempstead and the adjacent contiguous Village of Lawrence and Woodsburgh. For each municipality, the existing zoning uses, density, and dimensional regulations were identified. Known environmental constraints that could limit future development such as tidal wetlands, flood zones, sea-level rise, stormwater management, archaeological sensitivity, and natural habitats were researched. A development utilization factor was then developed (see Section 3.3) by performing a prototype residential yield analysis together with identified environmental constraints to determine the potential residential development at the subject property.

3.1. Land Use

Land uses within the boundary of the approximately 118-acre Woodmere Club are limited to (i) Open Space (an 18-hole golf course), and (ii) Recreation, including a clubhouse, outdoor tennis courts, and an outdoor swimming pool. The Project Site also contains a surface parking lot. There are no residential or commercial uses on the Project Site.

Land uses within the quarter-mile Study Area surrounding the Project Site generally include single-family residential within the unincorporated Town of Hempstead, and within the Villages of Cedarhurst, Lawrence, and Woodsburgh. Commercial (retail and office) and Community Facilities uses are largely concentrated in the western portion of the Study Area, along and adjacent to Central Avenue within the Village of Cedarhurst. The Study Area also contains 2-3 family homes and a limited number of multi-family (4+ units) homes and condominium/co-op buildings. The Rockway Branch of the Long Island Rail Road (LIRR) runs through the northern and western portion of the Study Area and the Cedarhurst LIRR train station is west of the Project Site, adjacent to the Central Avenue business district.

3.2. Zoning Analysis

The Woodmere Club is located in three municipalities: the unincorporated portion of the Town of Hempstead, the Village of Lawrence, and the Village of Woodsburgh.

3.2.1. Town of Hempstead Zoning Districts

Within the unincorporated portion of the Town of Hempstead, the Woodmere Club is mapped as Residential B District. Allowable uses in the Residential B District include single-family detached homes or senior residences, agricultural or nursery uses that do not display for commercial purpose or advertisement on the premises, municipal recreational use, and railway passenger stations. The maximum building area is 27.5 percent of the lot area, with some allowances for additional coverage. The minimum lot size of the Residence

B district is 6,000 square feet, and the minimum lot width is 55 feet at the front setback line.

Town of Hempstead zoning districts within a quarter mile of the Woodmere Club include A Residence, B Residence, and C Residence districts. These districts are mapped north of the Woodmere Club along Central Avenue, Cedar Lane and Broadway.

3.2.2. Village of Lawrence Zoning Districts

Within the Village of Lawrence portion of the Woodmere Club, zoning is regulated entirely by the Residence AA zoning district. Allowable uses in the Residence AA District include single family homes; pre-existing clubs; social clubs (when authorized as special exceptions by the Board of Appeals); public parks and recreational areas; municipal golf courses, docks, and landings; and private catering facilities. Dimensional regulations of the Residence AA District generally include a minimum 40,000 square foot lot area; 150-foot frontage; and 5,425 square foot building area coverage.

Village of Lawrence zoning districts mapped within a quarter mile of the Woodmere Club include Residence AA, Residence BB, and Residence C1 districts.

3.2.3. Village of Woodsburgh Zoning Districts

Within the Village of Woodsburgh, the Project Site is mapped Residence 1A and Residence 2A. Residence 1A District regulations include 43,560-square foot lot area, 150-foot frontage, and a maximum floor area of 3,000 square feet, plus 0.18 times any lot area over 12,000 square feet. Residence 2A District regulations include 87,120-square foot lot area, 200-foot frontage, and a maximum floor area of 3,000 square feet, plus 0.18 times any lot area over 12,000 square feet. Village of Woodsburgh zoning districts mapped within a quarter mile of the Woodmere Club include Residence A, Residence 1A, Residence 2A, Residence B, Residence C, and Residence D districts.

3.3. Conversion Analysis

To determine the approximate number of lots that could be developed under existing zoning, a multi-step analysis was performed, as follows:

1. Determine the overall acreage.
2. Determine the acreage of existing wetlands, if applicable.
3. Deduct the wetlands area to determine a net developable acreage.
4. Estimate the area required for stormwater management, using 8 inches of stormwater storage (the standard Nassau County requirement) and an average runoff coefficient of

50% surface runoff. The required area for stormwater basins reflects the storage volume. The capacity of a basin is equal to its effective volume: overall surface area multiplied by effective depth. Stormwater basins would likely vary in size, as their effective depths are site-specific to keep the bottom of the basin at least two feet above groundwater. The subject property was analyzed with an effective depth of 3 feet due to the presence of shallow groundwater.

It is noted that a developer could apply for a waiver for less storage (typically for 5 inches rather than 8) and/or could utilize creative stormwater management options (e.g. permeable pavement, rain gardens). These would be site-specific conditions that would have to be analyzed at the time of development.

5. The acres needed for stormwater management were deducted from the net developable acres.

Based on these steps, a conceptual layout of the Woodmere Club was developed using the AutoCAD Civil3D parcel tool. These utilization factors were applied to all three municipalities to estimate the number of lots that could potentially be developed based on lot size alone, before other features are considered. Actual lot layout and yield will depend on many additional factors that would be determined and analyzed during the subdivision development phase, such as road layout, drainage design, topography, etc. This analysis also did not deduct any areas that could potentially have archaeological or ecological constraints, as these are unknown without detailed studies and would be addressed on a site-specific basis at the time of development. Therefore, these utilization factors indicate estimated potential yield and they are intended to be approximate or order of magnitude values.

3.3.1. Conversion Under Existing Zoning

Using the methodology outlined above, the following development yields were calculated for the Woodmere Club. Wetland areas and drainage areas were subtracted from total acreage to develop the overall lot acreages and yields. Overall, the Woodmere Club could yield up to 244 single-family lots on the Town of Hempstead portion of the site.[10] The remaining land of the Woodmere Club falls within the Villages of Lawrence and Woodsburgh and could yield up to 41 additional single-family one-acre lots under existing zoning regulations.[11]

[10] In accordance with Ordinance 46-2009, the Nassau County Planning Commission may require, at their discretion, a parkland reservation requirement of up to 3% of the total land area of the project site.
[11] In accordance with Village of Woodsburgh Code §131-25, the Woodsburgh Planning Board may require a parkland reservation of up to 10% of the total upland area of the project site.

The potential addition of up to 285 homes at the Woodmere Club (244 within the unincorporated area of the Town of Hempstead and 41 within the adjacent contiguous Villages of Woodsburgh and Lawrence) could result in the potential for significant adverse environmental impacts associated with the subject property, as well as potential impacts on adjacent communities. The following is a high-level review of several of the more important environmental and cultural resources and likely potential adverse impacts. It is anticipated that any future golf course conversion to residential use would require a separate and more detailed SEQRA review for the development of the subject property.

Each of these categories is based on the conversion to a single-family home subdivision.

The foregoing analysis indicated that conversion of the subject property under existing zoning could have the potential for significant adverse impacts in many areas, including environmental and cultural resources, community character, schools, traffic, and economics. In addition, further impacts can be anticipated from a maximum buildout of the Woodmere Club property, such as the use of imported fill to meet required Base Flood Elevations. While a general grade change throughout the property would allow each individual lot to meet National Flood Insurance Program elevation requirements, such an approach would strip the property of its current flood mitigation functions, likely worsen flooding on surrounding area roadways and private properties and introduce significant visual impacts with increased building heights and minimal buffer areas.

3.3.2. Conversion Under Proposed Zoning

In order to mitigate the aforesaid impacts resulting from development under existing zoning regulations, the Town of Hempstead and the adjacent contiguous Villages of Lawrence and Woodsburgh propose the adoption of the Coastal Conservation District – Woodmere Club (CC-WC) (provided in Appendix A). Principally, the proposed CC-WC district has been developed to protect natural and community resources, protect existing development, preserve important ecological and environmental conditions, preserve open space, maintain community character and better align Town and Village zoning and land development regulations with existing federal and state environmental regulations, particularly those that recognize the sensitivity of low-lying coastal areas (i.e., sea-level rise). As such, the proposed CC-WC district introduces several requirements that build upon these existing regulations, but rather than solely regulate development at the lot level (as most regulations still do), the intermunicipal collective approach allows the three municipalities to address the coastal area from a broader perspective, recognizing that environmental attributes and constraints are not limited to municipal boundaries. As an example, this coordinated approach allows for the preservation of approximately 70% of the property as unfragmented open space, providing far better flood mitigation capabilities, preservation of existing development, protection from additional and new topographical changes that could otherwise overwhelm the surrounding community and private property, and preservation of existing views for the surrounding community.

A full copy of the proposed Coastal Conservation District – Woodmere Club (CC-WC) is provided in Appendix A, with key site and dimensional regulations provided below:

- Establish the Open Space/Recreation Sub-District, which preserves approximately 83.3 acres of the ±118.4-acre Woodmere Club property as open space. Locating this Open Space/Recreation Sub-District along the perimeter of the property allows the property to retain as much of its natural drainage and flood mitigation function as possible and reduces potential visual impacts associated with residential development. Whether this area is maintained as a natural open area or as a nine-hole golf course, additional regulations on tree removals, grading and fill are included within this Sub-District, to further protect community character, maintain and potentially enhance the existing drainage associated with the property and reduce potential adverse consequences on abutting and surrounding properties.
- Establish the Clubhouse/Hospitality Sub-District, allowing for the continued use of the Woodmere Club clubhouse in a manner consistent with its current use (no net change in the intensity of use), with the potential for expansion within the footprint of existing impervious surfaces.
- Establish the Single-Family Residential Sub-District, which restricts residential development to two distinct development clusters, accounting for approximately 29.4 acres of the ±118.4-acre property. ±19.3 acres of this Sub-District are located within the Town of Hempstead (northern residential cluster) and the remaining ±10.1 acres are located within the Villages of Lawrence and Woodsburgh (southern residential cluster).
- Adjust bulk regulations: Utilizing a conservation subdivision approach allows for the preservation of unfragmented open space but requires amendments to existing bulk regulations in both the Town and Villages.
    - Within the Town of Hempstead, increase maximum gross floor area from 3,300 square feet (maximum height: 30 feet/2 ½-stories, 27.5% building area) on 6,000 square foot lots to:

        - 7,500[12] (up to 10,000) square feet (max. height: 34 feet/2 ½-stories, 30% building area) with a minimum lot area of 12,500 square feet within the Town of Hempstead portion of the property.
            - Note that height within a Special Flood Hazard Area (100-year floodplain) is regulated by §352(H) of the Town of Hempstead Building Zone Ordinance, except that the maximum height restriction of §352(H)(3) shall be superseded by the maximum heights set forth in §76.29 of the proposed Coastal Conservation District – Woodmere Club (CC-WC).
    - Within the Villages of Lawrence and Woodsburgh, set maximum gross square footage at 11,200[13] (up to 14,000) square feet (max. height 34 feet/2 ½-stories, 37% building area) with a minimum lot area of 15,000 square feet. This reduction in minimum lot area from 40,000 square feet in the Village of Lawrence and 43,560 square feet (one-acre) in the Village of Woodsburgh, allows for implementation of the cluster-style approach and preserves the maximum amount of open space.
- Implement Low Impact Development (LID) principles. LID principles provide for enhanced stormwater management by addressing stormwater from multiple scales – including both community-wide floodplain management as well as lot-by-lot solutions. Rather than just setting requirements for overall subdivision stormwater management, the implementation of LID would also require stormwater management solutions on each individual building lot (in addition to stormwater management for the overall property development). This approach will reduce large point source discharges, thereby reducing strain on public infrastructure, reducing localized flood impacts and allowing the remaining areas of the property to drain properly. LID principles are incorporated in the Coastal Conservation District – Woodmere Club (CC-WC) through the inclusion of the following requirements:

[12],[5] Within the CC-WC, height within a Special Flood Hazard Area shall be measured from the official FEMA-mapped base flood elevation plus two feet (freeboard requirement). In such instances, overall gross square footage could increase as non-habitable spaces can be constructed below the base flood elevation. However, as this additional space does not permit additional bedrooms, bathrooms or other living space, this additional square footage is not anticipated to result in any additional impacts.

[13] Within the CC-WC, height within a Special Flood Hazard Area shall be measured from the official FEMA-mapped base flood elevation plus two feet (freeboard requirement). In such instances, overall gross square footage could increase as non-habitable spaces can be constructed below the base flood elevation. However, as this additional space does not permit additional bedrooms, bathrooms or other living space, this additional square footage is not anticipated to result in any additional impacts.

- Set maximum lot coverages for impervious surfaces at 60%. While both the Village of Lawrence and Village of Woodsburgh regulate impervious surface coverage, it is currently unregulated by the Town of Hempstead.
- Require that a minimum of 50% of any additional lot coverage beyond the building area comprise permeable pavement systems.
- Require that each building lot will provide for the collection, storage and recharge of stormwater on-site, with no surface or roof runoff being directed off of each individual lot. This system shall be sized, at a minimum, for the volumetric design of a three-inch rainfall event, based on the one-year, 24-hour storm event in New York State.

Overall residential density for CC-WC conservation subdivision approach has been designed to complement existing area zoning, which includes Residence AA District within the Village of Lawrence (40,000 square foot minimum lot area) and the Residence 1A District within the Village of Woodsburgh (43,560 square foot minimum lot area). As such, a conceptual minimum lot size of one-acre was applied across the subject property. A traditional subdivision layout with a minimum lot size of one acre (43,560 square feet) within the 55-acre Town of Hempstead portion of the course would yield approximately 41 lots with no preservation of open space. As such, the proposed residential density within the Town of Hempstead's portion of the Woodmere Club Property (proposed 12,500 square foot minimum lot area) is equivalent to the density permitted by the adjacent one-acre zoning within the Villages of Woodsburgh and Lawrence. Within the Village of Lawrence and Village of Woodsburgh portions of the property (proposed 15,000 square foot minimum lot area), approximately 18 lots could be created within the Single-Family Residential Sub-District and the Clubhouse can be utilized as a clubhouse and hospitality area. This is a change from the 35-42 homes with no hospitality component that could be developed under existing Village zoning regulations. This change in yield and design provides for a cluster-style development approach and maintenance of the existing clubhouse in its historical context. The proposed cluster-style development for the Woodmere Club Property will allow for the preservation of approximately 83 acres/70% open space throughout the Woodmere Club Property and allow for required compensatory storage areas. Sustainable design elements will be required in all residential development applications, incorporating a sustainable approach and low-impact development principles.

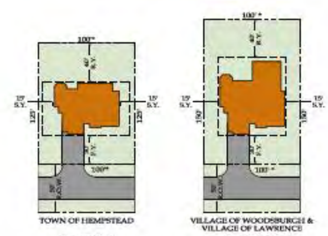
As an illustrative aid, a conceptual conservation subdivision layout under the proposed CC-WC district is provided below (Figure 3-1). Based on the development of 12,500 square foot lots (minimum lot area) within the Town of Hempstead and the development of 15,000 square foot lots (minimum lot area) with the adjacent contiguous Villages of Lawrence and

Woodsburgh, this potential layout results in a total of 59 single-family homes (41 lots within the Town of Hempstead and 18 lots split between the two Villages) and maintenance of the clubhouse with hospitality or associated uses. At the same time, it preserves approximately 70% of the property as open space/recreational space.

SITE DATA:

SITE AREA IN TOWN OF HEMPSTEAD:	55.0 ± ACRES
PROPOSED SINGLE FAMILY LOTS : MIN. 12,500 SF LOTS	= 41
SITE AREA IN VILLAGE OF WOODSBURGH:	40.5 ± ACRES
SITE AREA IN LAWRENCE:	22.9± ACRES
PROPOSED SINGLE FAMILY LOTS IN VILLAGE OF WOODSBURGH & LAWRENCE : MIN. 15,000 SF LOTS	= 18

118.4 ± ACRES - 59 SINGLE FAMILY LOTS



TYPICAL PLOT PLANS

*MINIMUM STREET FRONTAGE REQUIREMENTS AND LOT WIDTH AND DEPTH REQUIREMENTS VARY ON CUL-DE-SACS AS SPECIFIED IN THE COASTAL CONSERVATION DISTRICT WOODMERE CLUB.

Figure 3-1: Conceptual Development Layout under the Proposed Coastal Conservation District – Woodmere Club

As shown in Table 3-1 below, with the proposed Coastal Conservation District – Woodmere Club the residential yields would be reduced, while allowing relatively larger homes, as follows:

Table 3-1: Potential Residential Yield (Current and Proposed Zoning)

	Potential Lots Under Current Zoning	12,500 sf Lots Under Proposed Zoning	15,000 sf Lots Under Proposed Zoning	Total Lots Under Proposed Zoning	GSF Under Current Zoning	GSF Under Proposed Zoning
Woodmere Club (TOH)	244	41	0	41	805,200	307,500
Woodmere Club (Villages)	41	0	18	18	393,600	201,600
Total	285	41	18	59	1,198,800	509,100

This coordinated zoning approach, enabled by the intermunicipal collective approach, provides for greater consistency with the community's overall vision for the area. This vision has been outlined both by area residents and the participating municipalities, with regulation of future development patterns and environmental protection serving as the unifying messages. Applying consistent regulations across all three municipalities would improve protection of the course's sensitive environmental resources, while also improving zoning and land use consistency between the Town of Hempstead and the Villages of Lawrence and Woodsburgh. The reduction in the potential number of lots and impervious surface coverage would significantly lessen potential adverse significant impacts. The increase in gross square feet allowable on each lot would allow for larger homes, however, these homes will be buffered from the existing community. The following sections provide additional analysis related to open space, visual resources, stormwater, community services and traffic.

3.4. Open Space & Visual Resources

As discussed throughout this Expanded Environmental Assessment, the Coastal Conservation District – Woodmere Club (CC-WC) establishes the Open Space/Recreational Sub-District, which effectively preserves approximately 83.3 acres or 70% of the subject property. This is achieved through clustering within the smaller Single-Family Residential Sub-District, in line with the general planning concept of a conservation subdivision. In addition, as noted in Section 2.4, the conservation subdivision approach aligns closely with NYS DEC regulations for tidal wetlands, particularly *6 CRR-NY 661.6 Subsection 6*, which provides for the clustering of residential uses as to allow enhanced buffering of sensitive coastal resources. In the case of the Woodmere Club, the Open Space/Recreational Sub-District would allow for either general open space or the continuation of golf operations as a nine-hole course. Under either scenario, the significant drainage and flood absorption capabilities associated with the existing golf course and natural areas would be retained. Regulations within the CC-WC district further restrict tree removals and the use of fill/significant grading to preserve this area to the maximum extent practicable.

A maximum subdivision buildout would result in nearly a complete loss of open space, any remaining green spaces would generally be limited to individual lots and common infrastructure areas on the interior of the subdivision. This is also validated on the Willow View Estates Preliminary Subdivision Plan (Appendix E), which proposes a maximum buildout scenario of 285 single-family homes with minimal open space. As noted in the *Woodsburgh Vision Plan*, although private, the Woodmere Club and the Rockaway Hunting Club have served as part of the last remaining piece of open space in the area. Even with restricted public access, the surrounding community receives numerous benefits from the preservation of the perimeter open space of these properties. As the largest contiguous pervious surface in this low-lying coastal area, the subject property plays a critical role in both area drainage and buffering from impacts associated with severe storms. This function will become more important as sea-level rise continues to progress, with the frequency and severity of storms forecasted to impact coastal areas. In addition, this area serves as a defining element of local community character. As the last remaining open space in the area, the coastal views and existing tree cover on the subject property serves as one of the area's most important neighborhood resources.

The loss of such benefits would be deemed a significant adverse impact for the both the surrounding community, as well as the area's overall resilience and ability to manage storm events.

3.5. Stormwater

The following table indicates the estimated impervious area projected from golf course conversion to single-family homes under existing and proposed zoning. The proposed zoning would comprise modified subdivision regulations designed to further reduce impervious cover associated with roads and sidewalks. While there is some variability in road layout options (primarily due to site size, shape and other encumbrances), on average the proposed zoning would result in an overall reduction in roadway and sidewalk area by approximately 60%, compared to development under existing zoning. The proposed roadways and sidewalks are included the impervious area coverages shown below in Table 3-2. Perhaps most significantly, is the preservation of approximately 70% of the subject property as largely unfragmented open space, which also significantly reduces sitewide impervious coverage compared to a maximum yield subdivision scenario.

Table 3-2: Impervious Surface Coverage (Current and Proposed Zoning)

	Lots Under Current Zoning	Total Lots Under Proposed Zoning	Total Impervious Area (sf): Current Zoning*	Total Impervious Area (sf): Proposed Zoning**	Percent Change in Impervious Area
Woodmere Club	285	59	1,758,428	708,280	60%

*Assumes 30-foot road width and two four-foot sidewalks.
** Assumes 30-foot road width and no sidewalks.

3.6. Community Services

3.6.1. Schools

The subject property falls almost entirely within the Lawrence Union Free School District (UFSD), with a very small portion falling within the Hewlett-Woodmere UFSD. For the purposes of this analysis, since all building lots would be located within Lawrence UFSD, it was assumed that development would only affect the Lawrence UFSD (under any development plan, only a small portion of one lot within the Village of Woodsburgh would fall partially within the Hewlett-Woodmere UFSD).

The following table compares the number of new school children that would be projected to be generated from the golf course conversion to a single-family home subdivision under existing and proposed zoning. It should be noted that the Rutgers demographic multipliers used to make these projections assume that approximately 20% of school age children will attend private schools. However, the exact percentage of school-aged children who attend private schools can vary significantly between school districts. While this level of data is generally not publicly available, several sources, including local community newspapers, have indicated that the Lawrence Union Free School District (UFSD) has a much higher rate (greater than 50%) of school-aged children attending private school.[14] It is estimated that over 7,000 school-aged children live in the district, with only 2,612 enrolled in the Lawrence UFSD in 2018-2019. As such, the projections presented in this Expanded Environmental Assessment represent a conservative (or worst-case) scenario for number of public-school children generated by new residential development.

Under the existing zoning redevelopment scenario, this analysis indicates a significant increase of 248 public school-aged children, an average of 20 students per grade level (K-12) or a 9.5% increase in school enrollment. The proposed CC-WC district would reduce this number of potential public-school children by over 76%.

[14] http://jewishweek.timesofisrael.com/five-towns-see-renewed-tensions-due-to-school-sale/

Table 3-3: Comparison of Potential School Children

School District	Potential New Public-School Children Under Existing Zoning	Potential New Public-School Children Under Proposed Zoning	Current Enrollment	Percent Increase in Enrollment Under Current Zoning	Percent Increase in Enrollment Under Proposed Zoning
Lawrence UFSD	248	59	2,612	9.5%	2.3%

Source: Projections: Residential Demographic Multipliers (New York). Rutgers University, Center for Urban Policy Research for New York. 2006; Enrollment: https://data.nysed.gov/lists.php?type=district

3.6.2. Police, Fire, and EMS

The following table indicates the community service providers for the potential new single-family home subdivisions under current and proposed zoning scenarios.

Table 3-4: Community Service Providers at the Woodmere Club

Police	Nassau County 4th Precinct
Fire and EMS	Woodmere Fire Department
Current Homes Served (Fire & EMS)	3,364
Potential New Homes (Current Zoning)	285
Percent Increase (Current Zoning)	8.5%
Potential New Homes (Projected Zoning)	59
Percent Increase (Potential Zoning)	1.75%

3.6.3. Water and Wastewater

Table 3-5 indicates the existing and estimated water demand (exclusive of irrigation) and wastewater generation projected under existing and proposed zoning and wetlands constraints.

Table 3-5: Water and Wastewater (Current and Proposed Zoning)

Course	Projected Water Use/Wastewater Flow (gpd) Under Current Zoning	Projected Water Use/Wastewater Flow (gpd) Under Proposed Zoning	Percent Decrease in Water Use/Wastewater Flow (gpd) From Current to Proposed Zoning
Woodmere Club (TOH)	73,200	12,300	-83.2%
Woodmere Club (Villages)	12,300	5,400	-56.1%
Total	85,500	17,700	-79.3%

Source: Nassau County Department of Public Works. Minimum Design Sewage Flow Rates. 2008

3.6.4. Solid Waste

The following table indicates the estimated solid generation projected from golf course conversion to single-family homes under both current and proposed zoning.

Table 3-6: Solid Waste (Current and Proposed Zoning)

Course	Proposed Solid Waste Generation (pounds/day) Under Current Zoning	Proposed Solid Waste Generation (pounds/day) Under Proposed Zoning	Percent Decrease in Solid Waste Generation From Current to Proposed Zoning
Woodmere Club (TOH)	3,134	527	-83.2%
Woodmere Club (Villages)	527	231	-56.2%
Total	3,661	758	-79.3%

Based on residential rate of 3.5 lbs/capita/day
Source: Environmental Engineering. Salvato, Nemerow, Agardy. 2003.

3.7. Traffic

As part of this SEQRA analysis, a detailed Traffic Impact Study (TIS) was performed to provide a detailed investigation of the potential traffic impacts of the proposed zoning on the adjacent street system.

A full copy of the TIS is provided in Appendix C with the study methodology, scope, and conclusions summarized below.

The TIS considers three scenarios combining 59 single-family homes, hospitality, and golf (Scenarios A, B, and C) and compares them to an As-of-Right scenario as represented on the Willow View Estates Subdivision Plan.

1. The Woodmere Club is on the southwest corner of Broadway and Meadow Drive on ±118 acres comprising sections of Woodmere (in the Town of Hempstead) and the Villages of Lawrence and Woodsburgh.
2. The three scenarios are as follows:
   - **Scenario A:** 59 single-family homes
   - **Scenario B:** 59 single-family homes, and the Clubhouse with added hospitality use
   - **Scenario C:** 59 single-family homes, the Clubhouse, and a 9-hole golf course
3. The following key intersections were included in this report:
   a. Broadway at Meadow Drive
   b. Broadway at Pine Street
   c. Broadway at Woodmere Boulevard
   d. Broadway at Prospect Avenue
   e. Albro Lane at Atlantic Avenue
4. The peak hour periods for this study are the weekday AM period (between 7:00 and 9:00 a.m.), weekday PM period (between 4:00 and 6:00 p.m.), and the Sunday midday period (between

11:00 a.m. and 2:00 p.m.). In the Five Towns, Sunday is the busier weekend day. Future weekend conditions are described as the Weekend peak hour to reflect Sunday or Saturday.

5. The existing volumes were counted in November 2019 and adjusted to June (peak month) conditions based on New York State Department of Transportation data for similar Long Island suburban roadways.
6. The No Action condition is called the As-of-Right condition in this report because without the Proposed Action, the property owner intends to apply to subdivide and redevelop the site with 285 residences. The As-of-Right condition was projected by applying a 0.5% per year ambient growth rate, accounting for other planned projects in the area that may come online by 2022, and adding in the anticipated traffic from the Willow View Estates Subdivision Plan.
7. Scenarios A, B, and C (59 residences/hospitality/golf) were projected by applying the 0.5% per year ambient growth rate, accounting for other planned projects in the area, and adding in the anticipated traffic from each scenario.
8. The As-of-Right scenario (285 residences) would generate 45% to 78% more traffic during peak hours on a day-to-day basis, compared to any of the With-Action scenarios (59 residences with Clubhouse/golf use). Of note, Scenarios B and C reflect periodic peak activity that does not persist each day or throughout the year. The Clubhouse does not have events every day, and golf season is only about 6 months a year, of which 2 months have limited activity gearing up or down for the season.

	As-of-Right			Scenario A			Scenario B			Scenario C		
	285 single-family homes			59 single-family homes			59 single-family homes/Clubhouse			59 single-family homes/Clubhouse/golf		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
Enter	53	178	143	11	38	36	34	41	63	52	57	86
Exit	158	104	122	35	23	32	37	25	36	45	44	60
Total	211	282	265	46	61	68	71	66	99	97	101	146

9. The As-of-Right analysis considers the potential for Willow View Estates to have a new driveway on Broadway opposite Prospect Avenue, as well as no new driveway.
10. Scenarios A, B, and C do not require mitigation at any of the study intersections.
11. The Broadway/Prospect Avenue intersection would experience a noticeable difference in delay for southbound Prospect Avenue, and with a new driveway the northbound delays would be unacceptably high (over 360 seconds per vehicle, well within LOS F). As-of-Right development might require a traffic signal or other expansive traffic mitigation. Potential mitigation options would themselves impact existing traffic, e.g. a signal that introduces new stops on Broadway and/or street widening that removes existing on-street parking.
12. If 285 residences are built under the As-of-Right scenario with no new driveway opposite Prospect Avenue, this would increase Meadow Drive delay by ±8 seconds during the weekday AM peak hour.

13. On a 24-hour basis, the As-of-Right existing zoning scenario (285 residences) would generate traffic every day, throughout the day, and significantly more traffic at every time of day compared to development under the proposed Coastal Conservation District, which includes the Clubhouse and golf which often generate little to no traffic for extended periods of time. The 285 residences would generate almost five times as much traffic, or up to more than 2,000 additional vehicles per day compared to the proposed Coastal Conservation District (59 residences, Clubhouse/golf). The 285 residences under the As-of-Right scenario would increase daily traffic volume on Broadway by almost 20%.

Based on the analyses and the conclusions herein, it is our professional opinion that the Proposed Action (full buildout under the proposed zoning, Scenarios A, B, or C) will not create off-site traffic impacts, whereas the As-of-Right scenario (existing zoning, 285 residences) will create significant adverse impacts at Broadway/Prospect Avenue and almost 80% more traffic during peak and off-peak hours. In fact, the anticipated 24-hour volume under As-of-Right Residence B zoning would increase traffic on Broadway by almost 20%.

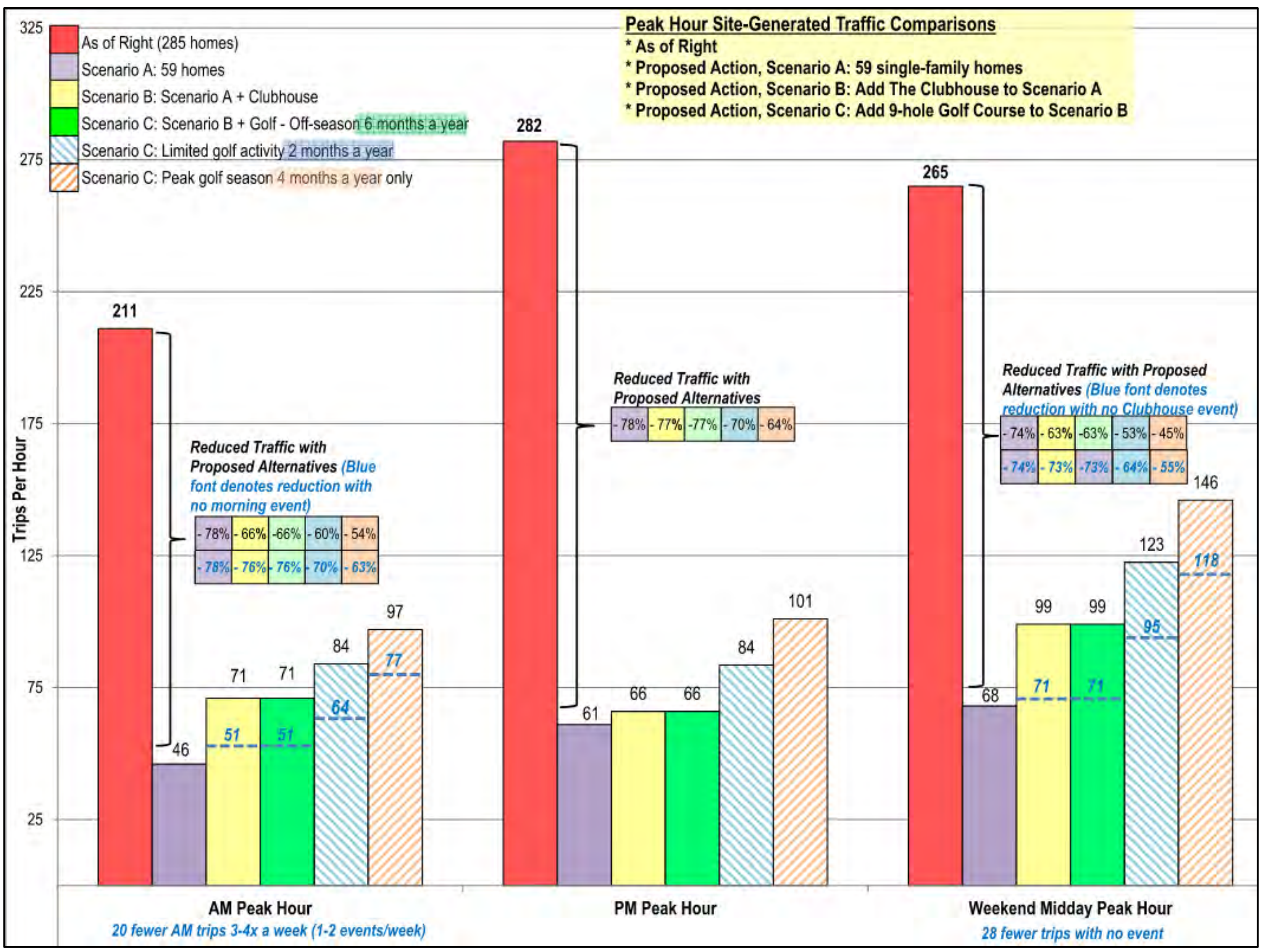


Figure 3-2: Peak Hour Trip Generation Comparison Chart

In addition to peak hour differences, there could be vastly different *daily (24-hour)* traffic volumes associated with the property, based on the land uses and density of new development.

The following chart depicts the differences in daily (24-hour) site-generated traffic. Figure 3-3 represents total daily volumes, which would be up to ±78% higher with the As-of-Right Residence B zoning (285 residences) than the Coastal Conservation District's 59 single-family homes and Clubhouse/golf uses. The difference is significant: the existing Residence B zoning (285 residences) would generate up to more than 2,000 additional vehicles per day compared to the full buildout with the Coastal Conservation District (59 residences, Clubhouse/golf). This increase in daily traffic represents almost 20% of the existing daily volume on Broadway, a two-lane road.

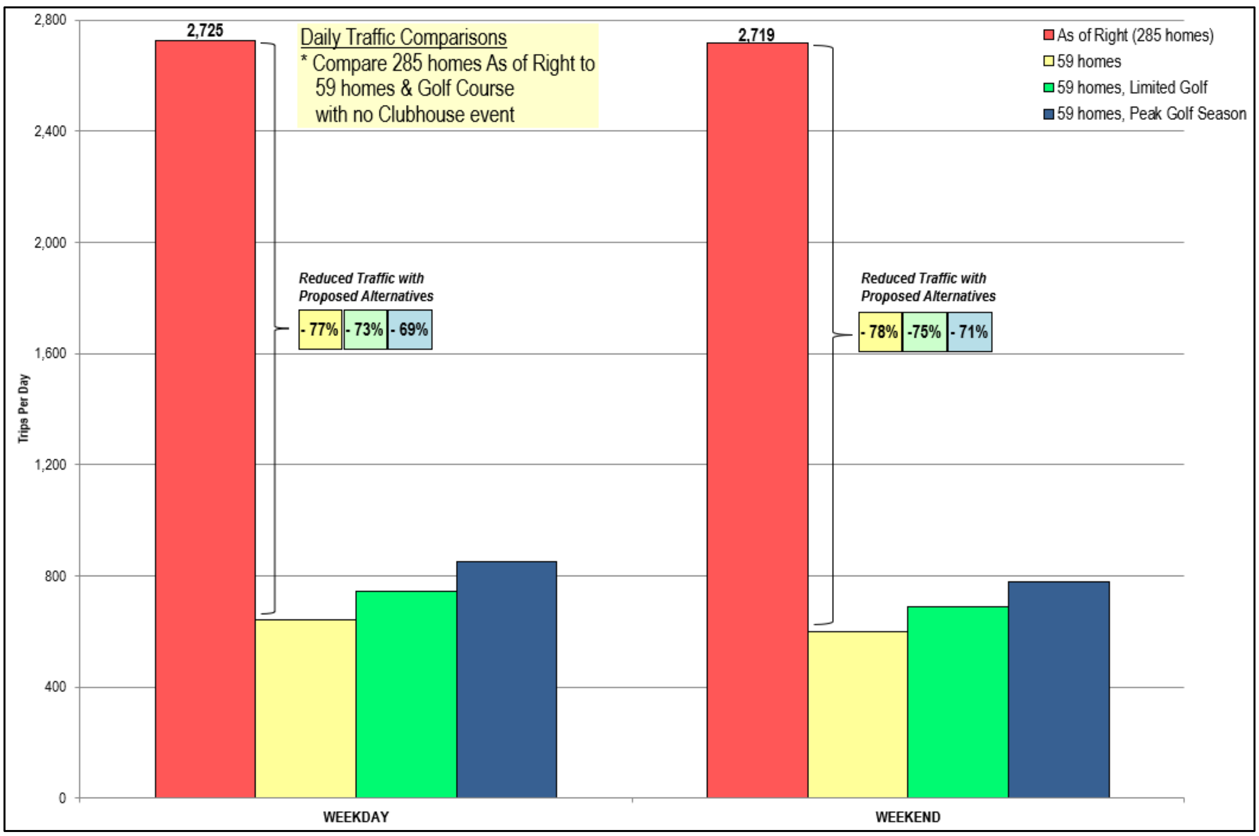


Figure 3-3: Daily Trip Generation

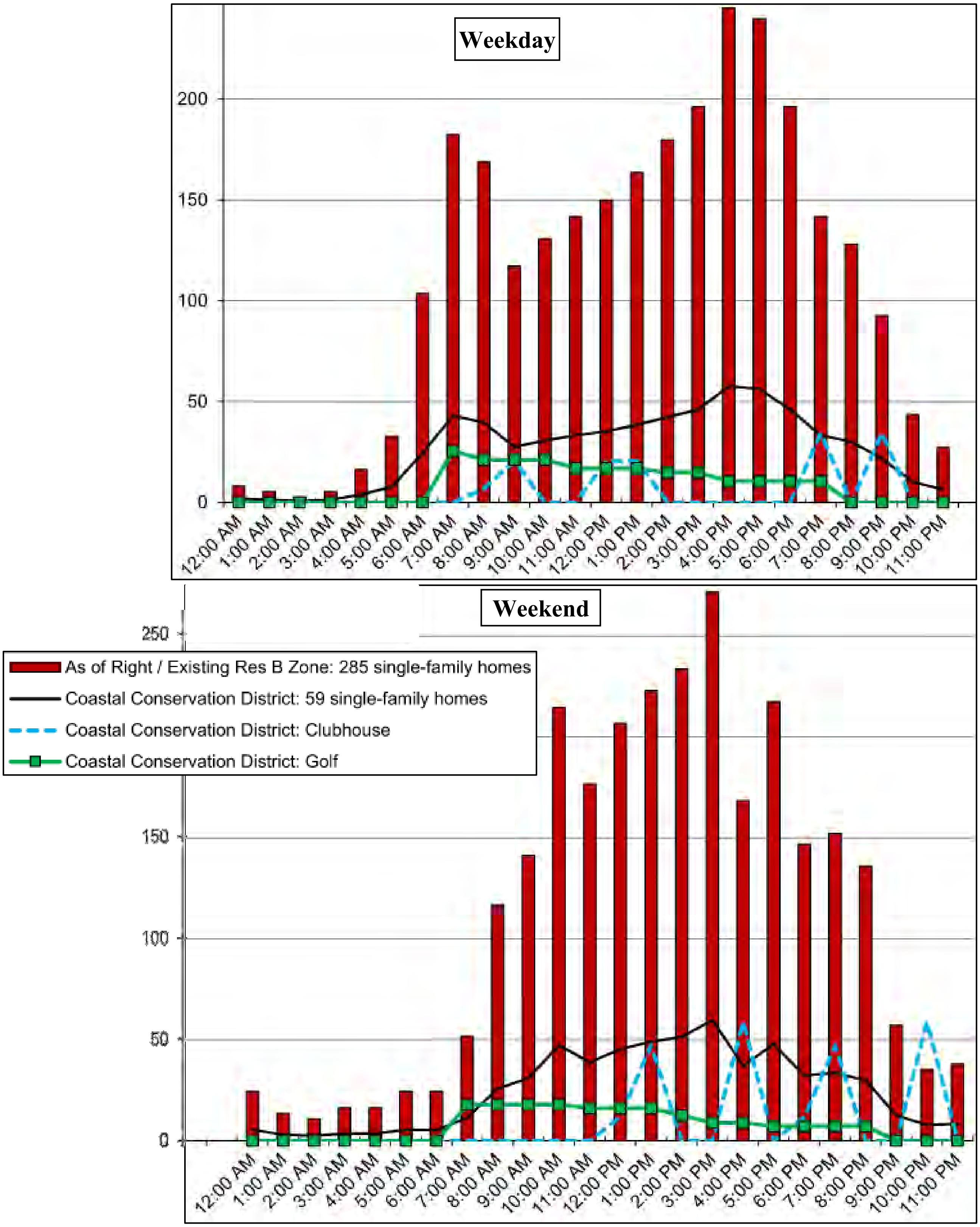


Figure 3-4: Hourly Traffic Variations during Golf Season

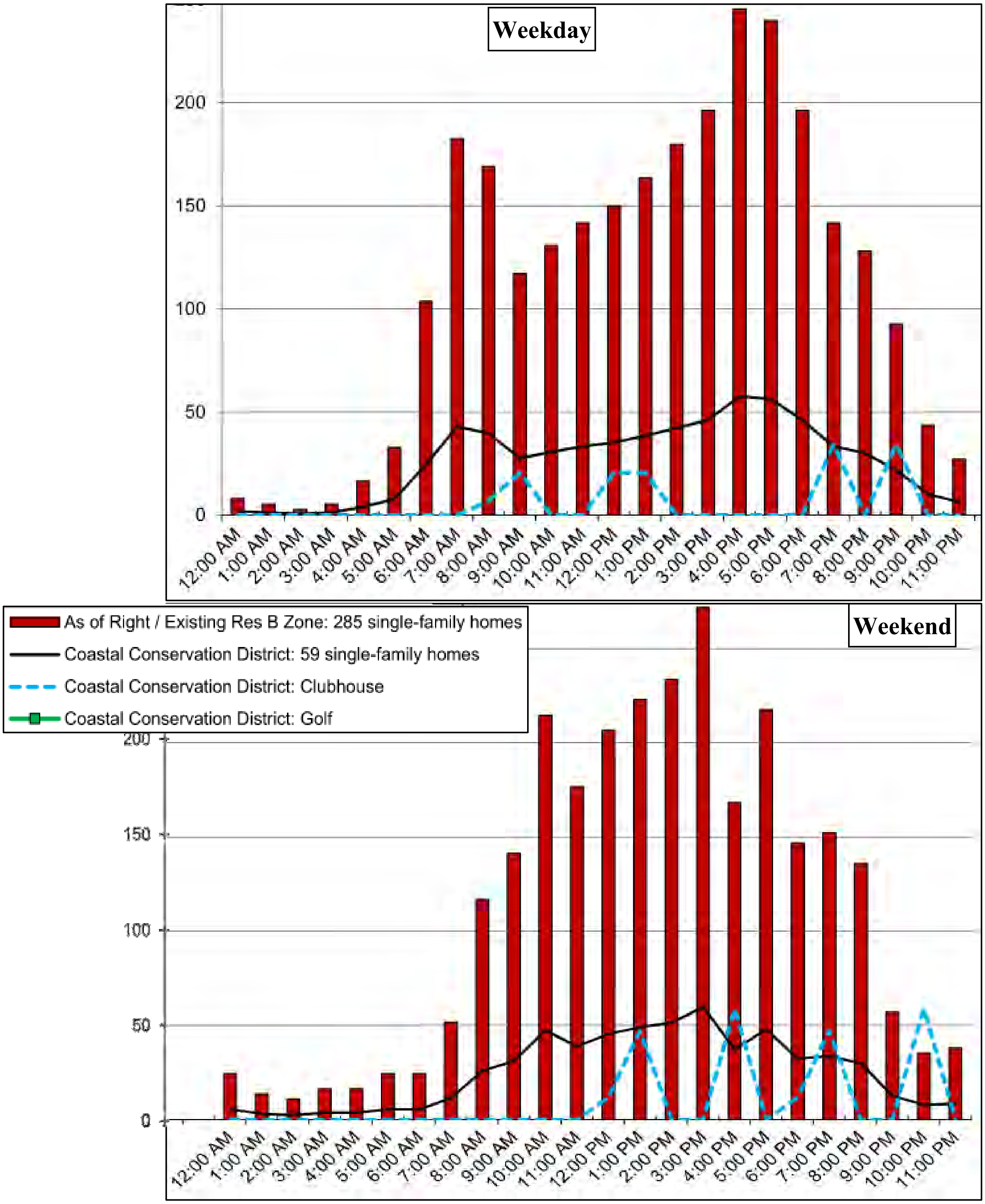


Figure 3-5: Hourly Traffic Variations during Golf Off-Season (6 Months a Year)

3.8. Construction Impacts

3.8.1. Construction Traffic

The number of construction-related vehicles will vary over the course of construction, especially with a high density of residential development on ±118.4-acre property. Typically, the most labor-intensive (highest concentration of truck trips) phase is the earthwork phase when large trucks enter and leave the site on a continuous rotating basis to transport excess material off-site or to bring imported fill. The number of trucks required for the earthwork phase is based on the truck size and the volume of material to be imported or exported.

As discussed in Sections 2.1 and 2.3, much of the property is low-lying and near or below the FEMA Base Flood Elevation (BFE). The expectation is that much of the site would need imported fill to address FEMA, NYSDEC, and local building code requirements for new single-family homes.

Existing Zoning/As-of-Right Scenario

Below is a high-level, order-of-magnitude estimate of the number of construction trucks associated with earthwork activity for the existing zoning/As-of-Right scenario, considering an average of 2 feet of fill being necessary for portions of the site (not the entire ±118.4 acres). Several areas are shown remaining undeveloped on the Willow View Estates Subdivision Plan, comprising ±18.9 acres for bioretention basins and shoreline areas. To be conservative, it was also considered that 70% of the remaining area might require fill, with the other 30% requiring little or no fill. Of note, the portions of the site closest to Broadway are higher than the Base Flood Elevation.

This results in the following calculation:

- 118.4 acres – 18.9 acres undeveloped = 99.5 acres x 70% = 69.7 acres requiring fill
- 69.7 acres x 43,560 s.f./acre x 2 feet of fill = 6,072,264 cubic feet
- 6,072,264 cubic feet x 1 cubic yard/27 cubic feet = 224,899 cubic yards of fill

The total number of truck trips is controlled by the volume of material to be transported, adjusted by a 5% "fluff" factor to account for the fact that the material will not all be completely packed down. Moving the material introduces air voids, and the trucks may not be filled exactly to their full capacity.

With 224,899 cubic yards of material to import, the overall needed number of truck trips will be:

- 224,899 cubic yards + 5% fluff = 236,144 cubic yards of space needed
- The total haul will take roughly 9,445 trips: 236,144/ 25 cubic yards per truck

A project development with the density of 285 dwelling units would likely be phased. The As-of-Right construction duration is unknown; below are two potential options.

Option A: 2 years of construction

For the earthwork to be complete within two years (24 months) would require the following number of trucks per day on a continual basis:

- There are generally 240 working days per year (20 per month)
- Decrease the annual work day count by 10% to account for individual days when conditions may not permit work (holidays, inclement weather, potential truck breakdowns). This leaves 216 working days per year or 432 working days in two years.
- 9,445 total truck trips over 432 working days corresponds to 22 trucks per day

This number is in addition to construction workers arriving on-site for other operations.

Option B: 4 years of construction

For the earthwork to be complete within four years (48 months) would require the following number of trucks per day on a continual basis:

- With 216 working days per year, there are 864 working days in four years.
- 9,445 10,110total truck trips over 864 working days corresponds to 11 trucks per day

This number is in addition to construction workers arriving on-site for other operations.

Daily Operations

Construction activity would need to abide by local noise ordinances, which generally restrict exterior construction to weekday hours:

- Town of Hempstead permits construction 7:00 a.m. to 6:00 p.m. on weekdays (§144-3.G)
- Village of Lawrence permits construction 8:00 a.m. to 6:00 p.m. on weekdays, and 9:00 a.m. to 6:00 p.m. on weekends if noise can be limited to the property (§144-5)
- Village of Woodsburgh permits construction 8:00 a.m. to 6:00 p.m. Monday to Saturday (§55-11).

To satisfy all three municipalities' regulations will leave ten working hours per day, five days a week.

With Option A (two-year duration and ±22 truck trips per day) there would be an average of 2-3 truck trips per hour, every hour, for ten hours a day to carry out the earthwork.

With Option B (four-year duration and ±11 truck trips per day) there would be an average of 1-2 truck trips per hour, every hour, for ten hours a day to carry out the earthwork.

Actual hourly truck trip generation will depend on duration, the number of trucks that can be loaded/unloaded simultaneously, and the travel time to/from the material supply yard (all of which are unknown). Of note, a 25-yard truck can be loaded in approximately 15 minutes, so loading/unloading time is not expected to artificially limit the number of hourly trucks.

Coastal Conservation District's 59 Single-family homes and Clubhouse/Golf

The same stipulations for working hours, days, and truck size would apply to these three Scenarios A, B, and C with 59 single-family homes and Clubhouse/golf uses. However, there would be significantly fewer truck trips required because the area to be built/disturbed would be notably smaller.

Whereas the As-of-Right scenario is considered to need fill over 74.6 acres, the three Coastal Conservation District scenarios would only need to fill approximately 18.75 acres. This corresponds to 75% of the ±25.0 acres surrounding the 59 single-family homes with the Coastal Conservation District. Of note, each of these scenarios limits or prohibits disturbance and fill operations around The Clubhouse and the perimeter of the site.

Compared to the As-of-Right scenario, the three Coastal Conservation District scenarios would require 75% less material to be imported, 75% fewer construction truck trips during the earthwork phase, and ±75% less time to complete and/or fewer hourly trucks at a time.

Compared to Option A or Option B above with As-of-Right Residence B zoning (285 single-family homes), the scenarios with the Coastal Conservation District save months or years of construction activity.

4. Conclusion

This Expanded Environmental Assessment documents significant environmental impacts associated with residential conversion under current zoning at the Woodmere Club. Overall, this EEA provides conversion analysis (residential conversion under existing zoning), potential impact analysis of residential conversion, identification of mitigation strategies and the formulation of the proposed Coastal Conservation District – Woodmere Club (CC-WC). This level of analysis allows for comparison between the existing zoning (no-action alternative) and the proposed zoning district, which was developed under an Intermunicipal Cooperative Agreement (IMA) between the Town of Hempstead, Village of Lawrence and Village of Woodsburgh, as a coordinated, comprehensive measure for the impacts associated with maximum residential build-out under existing zoning.

Overall, the proposed CC-WC district aims to better align with existing state and federal environmental principles, provide coordinated floodplain management regulations, preserve area character, and protect the critical environmental resources spanning the Town of Hempstead and the adjacent contiguous Villages of Lawrence and Woodsburgh. The result is a more sustainable residential zoning district that will provide for contextual single-family development that is responsive to environmental, ecological, cultural and physical conditions.

Cluster-style development will ensure that residential density remains consistent between the Town and neighboring Village regulations while also ensuring that much of the existing open space in the Woodmere Club Property is properly conserved. The proposed cluster-style development for the Woodmere Club Property will allow for the preservation of approximately 83 acres/70% open space throughout the Woodmere Club Property. Sustainable design elements will be required in all residential development applications, incorporating a sustainable approach and low-impact development principles.

Similarly, construction phase impacts with respect to construction truck traffic, noise, and air quality are expected to be reduced by ±75% with the proposed CC-WC district compared to the As-of-Right scenario.

It is important to note that neither this assessment, nor the adoption of any related zoning amendments, would preclude the requirement for any future land subdivision/development to perform a full environmental review in accordance with the State Environmental Quality Review Act (SEQRA). In addition, any changes to Town or Village zoning regulations would not supersede any existing federal or state regulations. The recognition of these existing environmental regulations was critical in the formulation of the proposed zoning district, as the proposed district has been designed to align with existing New York State Department of Environmental Conservation (NYS DEC) Tidal Wetlands protection principles and allow for conformance with Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) requirements. It also seeks to provide additional protection to this sensitive coastal area, by identifying the resiliency functions associated with this large swatch of pervious coastal landscape. Furthermore, the analysis and proposed mitigation contained herein should be considered preliminary steps in addressing any future development at the subject property. As noted above, any development application would be subject to an additional, detailed SEQRA review and conformance with all other applicable regulations. It is likely that such applications would be required to perform additional studies and develop more advanced mitigation beyond compliance with the proposed regulations of the Coastal Conservation District – Woodmere Club (CC-WC).

Appendix A – Proposed Zoning

Town of Hempstead Article VIIB: Coastal Conservation District – Woodmere Club (CC-WC)

Article VIIB
Coastal Conservation District - Woodmere Club (CC-WC)

§ 76.17. Title.

This Article shall be known and cited as the "Coastal Conservation District - Woodmere Club (CC-WC)".

§ 76.18. Purpose.

A. The purpose of this Article, in coordination with the contiguous neighboring Villages of Lawrence and Woodsburgh, is to regulate development in the environmentally sensitive coastal areas that span the municipal boundaries of the Town and the contiguous Villages of Lawrence and Woodsburgh, including the area occupied by the former Woodmere Club - allowing for the enhanced preservation and protection of the Town's and neighboring Villages' environmental, coastal, open space and cultural resources and the preservation of the residential neighborhoods - both within the unincorporated areas of the Town and neighboring incorporated Villages of Lawrence and Woodsburgh, in and about the former Woodmere Club.

In the low lying southern coastal areas of the Town and adjacent contiguous Villages there are located golf courses that have been in place for more than a century, which open spaces provide not only recreation but a natural mitigation against adverse impacts on the environment and, therefore, the well-being and safety of the entire region.

Climate change is becoming the defining environmental issue of our time, particularly for vulnerable, low-lying coastal areas. This change has taken shape already, in the form of more frequent and intense storms, sea level rise and extreme flooding. It is no longer a future endeavor, but rather a sound planning imperative that the Town and the Villages of Woodsburgh and Lawrence, immediately address ongoing and future conditions, including greater risks of flooding presented by sea level rise and enhanced storm surge, inland flooding expected to result from increasingly frequent extreme precipitation events and the increased risk of compound flooding, resulting from simultaneous storm surge and heavy precipitation.

Through proper and coordinated regulation, the Town intends to do its part in preserving the health, safety and well-being of residents in the area of the Woodmere Club and the surrounding community.

Along the coast, and particularly in low-lying coastal areas, it is imperative that the Town and the Villages, as stewards of the environment and protectors of their community safety, health and welfare, assure that flood risk mitigation measures effectively preserve the floodplain and surrounding areas. As the Department of Environmental Conservation has expressed, the goal of managing the floodplain is not only to ensure that new development is reasonably safe from flooding, but to address existing risks, to avoid increasing risk to others and to sustain natural capacities to slow and diffuse flood flows. Reducing development in flood-prone areas allows the natural landscape to absorb more floodwaters, reduce flooding to adjacent areas, recharge groundwater and sustain a healthy ecosystem.

As a result of declining golf participation and membership at 18-hole golf clubs, golf courses are closing, including The Woodmere Club. The land of The Woodmere Club ("The Woodmere Club Property") is approximately 118.4 acres in size and is located partially in the Town of Hempstead (approximately 55 acres) and partially in the adjacent contiguous Villages of Woodsburgh (approximately 40.5 acres) and Lawrence (approximately 22.9 acres).

As a result, this large and mostly open coastal area, spanning the boundaries of these three contiguous municipalities, is vulnerable to residential and commercial development, seriously threatening both this environmentally-sensitive coastal area, and the well-being of the Town and Villages and the region as a whole, and which potential adverse impacts and loss of existing open space will not be adequately mitigated by existing and inconsistent zoning regulations in both the contiguous Town and Villages with respect to permissible development, lot size, lot coverage, density, building height and site-specific development regulations.

It is the belief of the Town, in coordination with the contiguous Villages, that, unless addressed, the loss of this existing open space to over-development in the Town's environmentally sensitive coastal areas presents an immediate threat to the public health and safety of the Town, the adjacent Villages, and the region as a whole, and can best be mitigated, and the additional benefits accomplished, with the coordinated creation of matching complimentary Coastal Conservation District[s] in each municipality in conjunction with the adjacent contiguous Villages of Woodsburgh and Lawrence.

The Woodmere Club Property is located in a relatively vulnerable, low-lying coastal area, well within Special Flood Hazard Area (100-year floodplain) and the New York State Coastal Boundary Area. The Woodmere Club Property is also impacted by shallow groundwater conditions. The New York State Department of Environmental Conservation (N.Y.S. D.E.C.) has identified the presence of Significant Natural Communities and Rare Plants and Animals at The Woodmere Club Property. The Woodmere Club Property has also been identified by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) as a potentially-archeologically sensitive area. Given the presence of these environmental and cultural resources, the Town intends to preserve a maximum amount of open space while regulating residential development to a lower level of density than that previously permitted within the Residence B district of the Town.

Additionally, it is the belief of the Town that this Article will be beneficial in protecting the character of nearby residential areas (as the Woodmere Club Property course extends into the Villages of Woodsburgh and Lawrence), by regulating overall residential density to ensure substantial consistency with the existing, and newly adopted, Town and Village zoning regulations. Cluster-style development will ensure that residential density remains consistent with neighboring Village regulations while also ensuring that much of the existing and protective open space in the Woodmere Club Property remains.

A traditional subdivision layout with a minimum lot size of one acre (43,560 square feet) within the 55-acre Town of Hempstead portion of the course would yield approximately 41 lots with no preservation of open space. As such, residential density within the Town's portion of the Woodmere Club Property would be equivalent to the density permitted by the adjacent one-acre zoning within the Villages of Woodsburgh and Lawrence. At the same time, the proposed cluster-style development for the Woodmere Club Property will allow for the preservation of approximately 83 acres/70% open space throughout the Woodmere Club Property. Sustainable design elements will be required in all residential development applications, incorporating a sustainable approach and low-impact development principles.

While the Town recognizes its responsibility to provide for a properly balanced and well-ordered plan of development and land uses within its community, it also recognizes that, in enacting local zoning, consideration must be given to regional needs and requirements, and that there must be a balancing of the local desire to maintain the status quo within the community and the greater public interest that regional needs be met.

The New York State General Municipal Law, Section 239-NN, indicates the intent and purpose of State of New York to encourage the coordination of land use development and regulation among adjacent municipalities in order that each adjacent municipality may recognize the goals and objectives of neighboring municipalities, and as a result development occurs in a manner which is supportive of the goals and objectives of the general area, and neighboring municipalities.

Pursuant to Article 8, Sections 1 and 2-a of the New York State Constitution, as effectuated by General Municipal Law Article 5-J, Section 119-u, Village Law Section 7-741, and Town Law Section 284, the Town, the Village of Lawrence, and the Village of Woodsburgh agreed to coordinate regulation and entered into an Intermunicipal Cooperation Planning and Land Use Regulation Agreement (the "Intermunicipal Cooperation Agreement"} with the purpose of undertaking mutually beneficial, shared and coordinated comprehensive planning and land use regulation for the Woodmere Club Property in order to promote intergovernmental cooperation, increase coordination and effectiveness of comprehensive planning and land use regulation, make more efficient use of infrastructure and municipal revenues and resources, as to enhance the protection of community resources which span municipal boundaries.

It is in that spirit, and pursuant to agreement of all three municipalities to work together and the Intermunicipal Cooperation Agreement, that the Town, in conjunction and coordination with the adjacent contiguous Villages of Woodsburgh and Lawrence, adopts and creates the Coastal Conservation District - Woodmere Club (CC-WC), for the Town of Hempstead.

The proposed Coastal Conservation District- Woodmere Club (CC-WC) district represents an intermunicipal plan that addresses current and future physical climate risk changes due to sea level rise, storm surge and flooding. The district recognizes these impacts in relation to the unique geographical setting of the property at the Woodmere Channel terminus, its historical and environmentally and ecologically sensitive setting, and the anticipated flood impacts associated with this location. The risks to both private and public, and existing and future development, from flooding in this location under current and anticipated future conditions, necessitates multi-jurisdictional regulation guided by preservation and protection. The CC-WC district incorporates climate change considerations, while preserving both existing development and infrastructure, as well as protecting future development, including development on the Club property, from the virtual certainty of increasing flood risks as time progresses.

The Coastal Conservation District - Woodmere Club establishes three Sub-Districts to ensure the preservation of existing open space and regulate development in a manner that's compatible with area zoning and development patterns. The Open Space/Recreation Sub-District and the Single-Family Residential Sub-District both include portions of the Town of Hempstead and the contiguous Villages of Woodsburgh and Lawrence, while the Clubhouse/Hospitality Sub-District is located wholly within the Village of Woodsburgh. The three Sub-Districts are described in §76.25 of this Article.

B. The Town Board finds that the creation of this zoning district, in harmony with the coordinated creation of a similar zoning district in the contiguous Villages of Woodsburgh and Lawrence, is in the public interest and that the provisions of these coordinated contiguous complimentary zoning districts in each municipality are in the interest of the protection and promotion of the public health, general welfare and safety of both the residents of the Town of Hempstead and contiguous Villages of Lawrence and Woodsburgh.

The creation of this district, in coordination with the contiguous municipalities is intended to preserve the Town's natural resources and environmental features, while also preserving community character and the economic value of other properties in the neighborhood in and about the former Woodmere Club. Special consideration is provided for sustainable design elements, which will help to mitigate flood impacts, preserve open space, decrease stormwater runoff, improve local water quality and reduce traffic impacts. The regulations contained within this Article have been designed to be compatible and complementary with other permitted land uses in the area and contiguous municipalities and protect the character of their existing and developed residential communities.

§ 76.19. Applicability.

The intermunicipal Coastal Conservation District - Woodmere Club (CC-WC) shall apply to the land that comprises the privately-owned golf course commonly known as The Woodmere Club, and referred to herein as the Woodmere Club Property (Nassau County Land & Tax Map Section 41, Block F, Lots 37, 40, 48, 310, 123/3024 (Lot Grouping), 3028, 3030A/3030B (Lot Grouping), and 3032; Section 41, Block D, Lots 53 and 55; and Section 41, Block 72, Lot 1/3/4/5A/5B/6-9/11-12 (Lot Grouping)) (the “Property”). Acreages identified within this Article are based upon Nassau County Geographic Information Systems (GIS) 2018 Tax Parcel database.

The Building Zone Map of the Town of Hempstead shall be updated by the Town Engineering Department to reflect the lands which are by definition included within the CC-WC Coastal Conservation District - Woodmere Club.

In the CC-WC Coastal Conservation District - Woodmere Club, the following regulations shall apply.

§ 76.20. Definitions.

Lot coverage: The horizontal area of a lot covered by the roof areas of all buildings and/or structures, in addition to all other impervious surfaces, including but not limited to driveways, parking areas, patios, terraces, permeable pavement and paver systems and other similar features.

Permeable Pavement Surfaces: Pervious hardscape surfaces that allow for the infiltration of water into soils, helping to remove pollutants and recharge the water table. Examples of permeable pavement surfaces include pervious concrete, porous asphalt and permeable paving stones. Recycled concrete aggregate (RCA) shall not be permitted as the basecourse material. Open graded natural stone shall be used to facilitate storm water permeability.

Smart Controller Technology: An irrigation control system that reduces outdoor water use by monitoring and using information about site conditions (including, but not limited to soil moisture, rain, wind, slope, soil, plant type), and applying the correct amount of water based on those factors.

Compensatory Storage: A standard which preserves the ability of the floodplain to store water. Compensatory storage means that loss of flood storage due to buildings or fill in the floodplain is compensated for by providing an equal volume of storage to replace what is lost.

§ 76.21. Master Plan Submission.

A conceptual development plan for the proposed development of the Property shall be filed simultaneously with the Town of Hempstead and the Villages of Woodsburgh and Lawrence for review purposes prior to the filing of a map or subdivision application with the Nassau County Planning Commission. The purpose of this procedure is to facilitate a coordinated review with the Town and Villages, including a conceptual subdivision layout for the three Sub-Districts. The conceptual subdivision layout shall include existing and conceptual proposed grading, proposed drainage for the lots and infrastructure, lot configuration, hospitality development proposal, and plans for maintenance of open space/common areas.

Upon receipt of the conceptual development plan, the Town and Villages shall review the plan for compliance with applicable zoning, subdivision and site-specific (including any performance standards and sustainable design) regulations in effect in the respective jurisdictions. Each municipality shall inform the applicant as to compliance with such regulations, within 45 days of receipt of the conceptual development plan, and may also provide comments regarding any relevant matter, including plans for maintenance of open space and common area.

§ 76.22. Subdivision Map

No permit shall be issued for any building requiring a building permit unless the site is shown on a subdivision map approved by the Nassau County Planning Commission and any other jurisdiction with primary or concurrent subdivision jurisdiction, and filed in the Nassau County Clerk's office.

§ 76.23. Interpretation; conflicts with other provisions.

A. In interpreting and applying the provisions of this article, the rules of interpretation applicable to remedial legislation shall be used so that the spirit and intent of this article shall be observed.

B. In the event of a conflict between the provisions of this article and other provisions of this Building Zone Ordinance, the provisions of this article shall control.

§ 76.24. Severability.

If § 76.25 or § 76.26 of this Article shall be adjudged by a court of competent jurisdiction to be invalid, such judgment shall invalidate the remainder of this Article. If any other provision shall be so adjudged, it shall not invalidate the remainder of this Article. If there is found to be any imprecision, including but not limited to lot descriptions or acreage of total property, such will not invalidate this ordinance.

§ 76.25. Sub-Districts Established.

The Coastal Conservation District - Woodmere Club establishes three Sub-Districts to ensure the preservation of existing open space and regulate development in a manner that's compatible with area zoning and development patterns. The Open Space/Recreation Sub-District and the Single-Family Residential Sub-District both include portions of the Town of Hempstead and the contiguous Villages of Woodsburgh and Lawrence, while the Clubhouse/Hospitality Sub-District is located wholly within the Village of Woodsburgh. The three Sub-Districts of the Coastal Conservation District – Woodmere Club are provided in Figure 1 below and are described as follows:

A. Open Space/Recreation Sub-District:

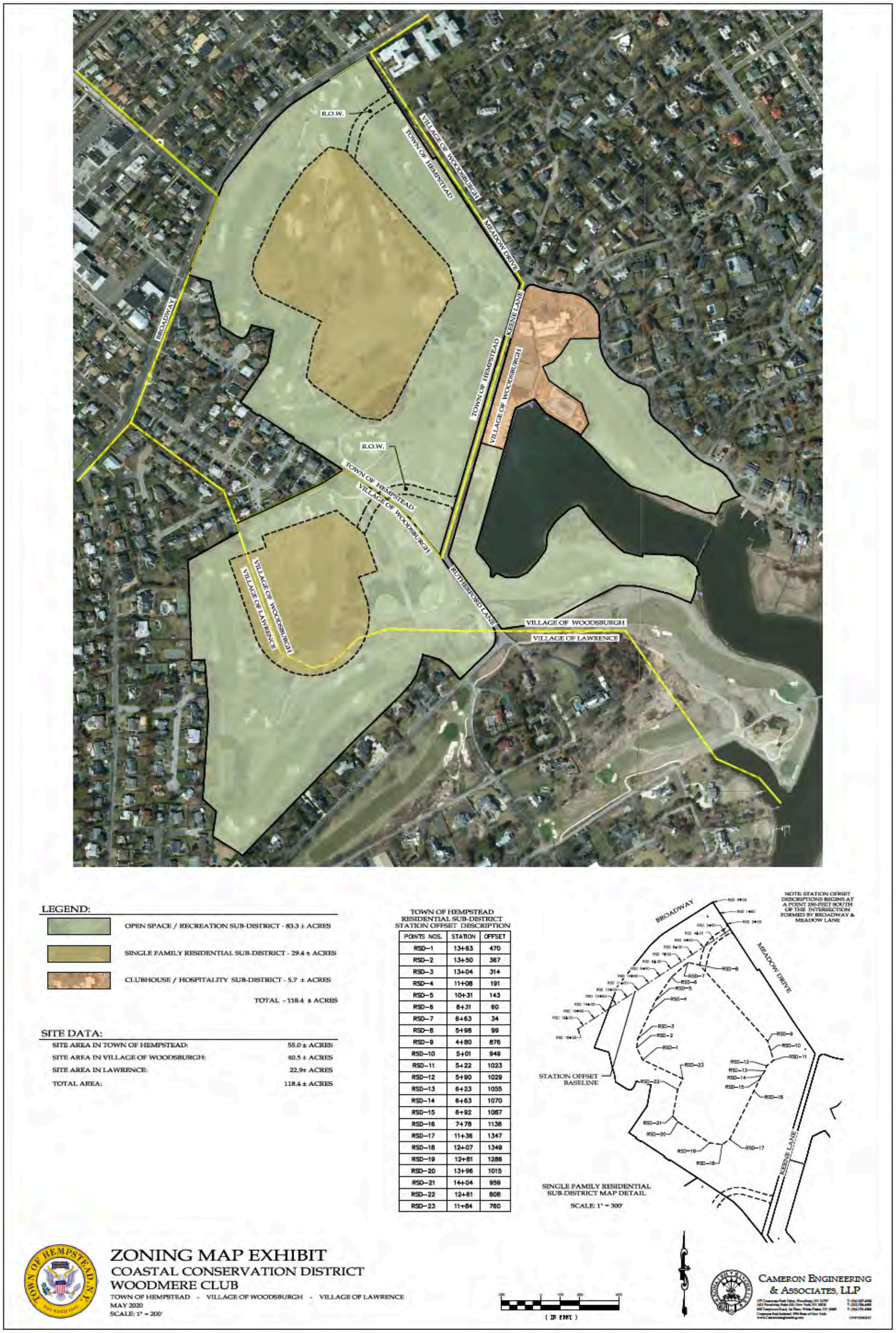
Accounting for approximately 35.7 acres of the approximately 55-acre Town of Hempstead portion of the property (65% of the land area within the Town of Hempstead) and approximately 83.3 acres of the approximately 118.4-acre Woodmere Club (70% of total land area), the intent of the Open Space/Recreation Sub-District is to preserve critical coastal open space areas to the maximum practicable extent. These open space areas provide flood mitigation from storm surge, stormwater, and sea level rise, provide critical habitats for wildlife and contribute significantly to the unique community character of the area. In recognition of the flood mitigation provided by these open space areas, and the protection of existing development and infrastructure in the Town and the surrounding area, the use of fill shall be regulated by the restrictions specified herein. Within the Open Space/Recreational Sub-District, grading for the purposes of flood water storage, including Compensatory Storage requirements of the Village of Lawrence (Lawrence Village Code: Article V Construction Standards: §94-13 General Standards) and the Village of Woodsburgh (Woodsburgh Village Code: Article V Construction Standards. §77-15 General Standards), shall be permitted. In addition, within the Open Space/Recreational Sub-District, with the exception of areas associated for access, as defined in § 76.35(C) of this Article, any removal of trees greater than six-inch caliper, or raising of grade by more than 12 inches, requires an administrative approval by the Town Board pursuant to Town Code and the Building Zone Ordinance.

B. Single-Family Residential Sub-District:

The Single-Family Residential Sub-District (approximately 29.4 acres of the approximately 118.4-acre Woodmere Club Property, or 25% of total land area) comprises two distinct development clusters, one in the Town of Hempstead portion of The Woodmere Club Property (approximately 19.3 acres in size) and one straddling the boundaries of the Village of Woodsburgh and the Village of Lawrence portions of The Woodmere Club Property (approximately 10.1 acres in size). These clusters, zoned for residential housing (religious and educational uses permitted by special exception), will allow development that is compatible with the existing one-acre minimum lot zoning in the Village of Woodsburgh and the 40,000 square foot minimum lot zoning in the Village of Lawrence, while retaining significantly more open space than provided for in previous zoning and land use regulations.

C. Clubhouse/Hospitality Sub-District:

The Clubhouse/Hospitality Sub-District is limited to approximately 5.7 acres within the Village of Woodsburgh portion of The Woodmere Club Property. The intent of this Sub-District is to preserve and enhance the existing clubhouse of The Woodmere Club and its associated hospitality services, including the parking areas, athletic courts and outdoor swimming pool. This Sub-District is regulated entirely by the Village of Woodsburgh and is not subject to the regulations set forth in this Article.



POINTS NOS.	STATION	OFFSET
RSD-1	13+63	470
RSD-2	13+50	387
RSD-3	13+04	314
RSD-4	11+08	191
RSD-5	10+31	143
RSD-6	8+31	60
RSD-7	6+63	34
RSD-8	5+98	99
RSD-9	4+80	876
RSD-10	5+01	949
RSD-11	5+22	1023
RSD-12	5+90	1029
RSD-13	6+23	1055
RSD-14	6+63	1070
RSD-15	6+92	1087
RSD-16	7+78	1138
RSD-17	11+36	1347
RSD-18	12+07	1349
RSD-19	12+81	1286
RSD-20	13+96	1015
RSD-21	14+04	959
RSD-22	12+61	806
RSD-23	11+84	760

Figure 1: Coastal Conservation District – Woodmere Club Map

§ 76.26. Permitted uses.

A. Within the Open Space/Recreation Sub-District, a building may be erected, altered or used and a lot or premises may be used for any of the following purposes, and for no other:

1) Golf course - private or semi-private, including practice golf areas such as putting greens and practice pitching/sand bunker areas.

2) Passive parkland, including walking trails, nature observation areas and passive recreation features.

3) Accessory structures and uses, which are customarily incidental to any of the above-permitted uses, including maintenance buildings not greater than 500 square feet with a maximum height of 16 feet and pavilion/shelter areas not greater than 400 square feet with a maximum height of 16 feet, are permitted. Setbacks for accessory structures within the Open Space/Recreation Sub-District shall be 100 feet from both perimeter property lines and residential homes. Not more than one such accessory structure per seven acres is permitted in this Sub-District.

B. Within the Single Family Residential Sub-District, a building may be erected, altered or used and a lot or premises may be used for any of the following purposes, and for no other:

1) Single-family detached dwelling.

2) Accessory uses on the same lot with and customarily incidental to the above-permitted use, including a private garage, are permitted.

§ 76.27. Single-Family Residential Sub-District Regulations Established.

Given the sensitive environmental resources present at the Property, special consideration for residential development standards, including bulk regulations, spatial distances and sustainable design features are provided for the Single-Family Residential Sub-District within § 76.28 through § 76.43 below.

§ 76.28. Minimum lot area and width.

No dwelling or other building shall be constructed on a lot unless it contains an area of not less than 12,500 square feet and has a minimum street frontage of 100 feet and maintains a minimum 75-foot lot width for a minimum depth of 125 feet. Building lots located on a cul-de-sac shall have a minimum street frontage of 50 feet and a minimum lot width of 75 feet at a lot depth of 40 feet offset from the street line, and shall maintain a minimum lot width of 75 feet for a depth of 125 feet.

§ 76.29. Height.

No building shall be greater in height than two- and one-half stories, with a maximum height of 34 feet. Building height within a designated Special Flood Hazard Area shall be regulated by § 352(H) of the Town of Hempstead Building Zone Ordinance, except that the maximum height restriction of § 352(H)(3) shall be superseded by the maximum heights set forth in this § 76.29.

§ 76.30. Building area and lot coverage.

For a minimum lot size of 12,500 square feet, the building area shall not exceed 30% of the lot area. In no case shall a building area exceed 5,000 square feet, regardless of lot size. Overall, lot coverage shall not exceed 60% of the lot area. Sustainable design is required through the utilization of Town-approved Permeable Pavement surfaces, which shall account for a minimum of 50% of any additional lot coverage beyond the building area.

§ 76.31. Front yards.

A. There shall be a front yard, the depth of which shall be set back at least 30 feet from the street line.

B. In case of a corner lot, a front yard shall be required on each street, and notwithstanding the foregoing, each front yard shall be not less than 30 feet.

§ 76.32. Side yards.

There shall be two side yards, one on each side of the main building, the aggregate width of which shall be at least 30 feet. Neither side yard shall be less than 15 feet wide.

§ 76.33. Rear yards.

There shall be a rear yard, the depth of which shall be at least 40 feet.

§ 76.34. Sustainable Design.

A. For all lots, impervious cover shall be reduced to the maximum extent practicable and follow the regulations set forth in § 76.30 (Building area and lot coverage) above.

B. Each building lot shall provide for the collection, storage and recharge of stormwater on-site, with no surface or roof runoff being directed off of each individual lot, and, accounting for both roof and surface runoff, shall be sized, at a minimum, for the volumetric design of a three-inch rainfall event, based on the one-year, 24-hour storm event in New York State. Roof runoff will be piped underground, directly to storm water drywells, leaching galleys, and/or other accepted infiltration practice. The use of green infrastructure is encouraged. Green infrastructure such as rain gardens and bioswales or other green techniques approved by the Town Engineer will receive an additional credit of two-times the volume capacity provided up to a total reduction of one and one-half inches. The three-inch volumetric design is separate and in addition to any storm water capacity provided for as part of a real property subdivision map associated with the property.

Automatic irrigation systems utilizing Smart Controller Technology shall be required in all new residential construction. All automatic irrigation systems shall also have rain and soil moisture sensors.

§ 76.35. Subdivision regulations

A. The requirements for subdivision development within the CC-WC Coastal Conservation District – Woodmere Club shall comply with all State and local regulations, including compliance with Nassau County Ordinance No. 46-2009 and Town Code § 181-19, and obtain all necessary approvals as required by law. Proposed public streets shall have a 50-foot right-of-way width and a paved roadway width of 30 feet, with sidewalk and curb design to be provided in accordance with County and Town requirements. Private streets shall have a 50-foot right-of-way width, and subject to approval of the Town Engineer, shall provide a paved roadway width of a minimum of 26 feet, with sidewalk and curb design, if any, commensurate with those indicative of low-density communities. Maintenance of private roads, including snow removal and garbage pickup, shall not be the responsibility of the Town.

B. There shall be perimeter open space view corridors, extending from an interior roadway to the perimeter of the residential lots, not less than 80 feet in width and provided at a minimum for each 500 feet of contiguous residential property.

C. Dedicated rights-of-way providing access to the Property shall be provided at the following locations:

1) Single-Family Residential Sub-District: Access right-of-way shall be provided off Meadow Drive (to be located 250 feet to the centerline of the new right-of-way south of Broadway) and off Keene Lane (to be located 280 feet to the centerline of the new right-of-way northwest of Rutherford Lane). Emergency access rights-of-way shall be provided at the southern terminus of Lotus Street and the north-western terminus of Tulip Street.

2) Clubhouse/Hospitality Sub-District: An access right-of-way shall be provided at the intersection of Meadow Drive and Keene Lane. The requirements for subdivision development within the CC-WC Coastal Conservation District Woodmere Club Property shall comply with all State and local regulations, including compliance with Nassau County Ordinance No. 46-2009 and obtain all necessary approvals as required by law.

D. Infrastructure costs associated with access and right-of-way improvements shall be addressed by the respective applicant(s), at the cost of the applicant(s) as determined at the time of an application made to the Nassau County Planning Commission.

§ 76.36. Permitted encroachments.

A. The following encroachments are hereby permitted:

1) Cornices, eaves, gutters, chimneys or bay windows projecting not more than 24 inches.

2) Air-conditioning condenser units, emergency generators, basement stairs and basement areaways, projecting not more than 36 inches into one of the required side yards.

3) Driveway piers not exceeding four feet in height.

4) Exclusive of encroachments permitted under this section and structures approved by Board of Appeals grant, second-story additions above existing permitted one-story structures may project into any required yard, provided that they do not extend beyond the wall of the existing structure.

§ 76.37. Swimming pools

A. Swimming pools are regulated by all of the requirements of Article XXV of the Building Zone Ordinance of the Town of Hempstead. Within the Coastal Conservation District - Woodmere Club, all provisions of Article XXV shall apply except for the regulations provided hereinafter.

B. There shall be 10-foot side yard and 20-foot rear yard setbacks.

C. Swimming pool terraces shall have 10-foot side yard and 20-foot rear yard setbacks.

D. Cabanas shall comply with all requirements set forth in § 76.39 of this Article.

§ 76.38. Accessory buildings and structures.

A. Accessory buildings may occupy not more than 18% of the required area of the rear yard up to an average height of 12 feet. The yard area occupied by such accessory building shall, however, be included in computing the maximum percentage of the lot area which may be built upon.

B. Exclusive of an accessory private garage and a cabana permitted as an accessory to a swimming pool pursuant to § 76.33, only one structure can be erected and thereafter maintained, and such structure shall be erected on the ground and in the rear yard only and shall not exceed 144 square feet of floor area, nine feet in height maximum and 12 feet horizontally maximum, unless authorized as a special exception by the Board of Appeals.

§ 76.39. Fences.

No fence shall exceed six feet in height and shall be permitted on the rear lot line and those linear portions of the side lot lines enclosing a rear yard; provided, however, that the four-foot fencing does not extend beyond the front line of the house. Fencing shall not substantially obstruct line of sight and there shall be compliance with § 311 of Article XXXI of this ordinance, with respect to clear sight triangles.

§ 76.40. Signs.

Such signs which are authorized for single-family residences under the provisions of Article XXIV are permitted.

§ 76.41. Excavations.

No excavations for purposes other than the construction of a driveway, walk, a permitted wall or building or part thereof or accessory thereto, or to remove topsoil from one part of the lands of an owner to another part of the same premises, when such removal is necessary as an accessory use or improving said property, shall be made unless approved by the Board of Appeals.

§ 76.42. Transition

C. Within 45 days of the effective date of this Article, unless a greater period is determined necessary, specific amendments to the Building Zone Map of the Town of Hempstead shall be prepared by the Department of Engineering or its designate, precisely identifying the area included in the CC-WC Coastal Conservation District - Woodmere Club.

D. Notwithstanding the foregoing, this Article shall be fully applicable to all properties falling within the definition of CC-WC Coastal Conservation District - Woodmere Club immediately upon adoption of this Article and in accordance with law, and any prior zoning district regulation or classifications are thereby immediately superseded.

Appendix B – SEQRA Documentation

Full Environmental Assessment Form

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: Establishment of the Coastal Conservation District - Woodmere Club (CC-WC) in the Town of Hempstead		
Project Location (describe, and attach a general location map): The Woodmere Club, 99 Meadow Drive, Woodmere, New York (see attached location map)		
Brief Description of Proposed Action (include purpose or need): The Woodmere Club property is approximately 118 acres in size, located partially in the Town of Hempstead (±55 acres), and partially in the adjacent contiguous Village of Lawrence (±22.9 acres), and partially in the adjacent contiguous Village of Woodsburgh (±40.5 acres). Under an Intermunicipal Cooperative Agreement between the Town of Hempstead and the contiguous Villages of Lawrence and Woodsburgh (finalized on January 9, 2020), each municipality intends to adopt its own version of the Coastal Conservation District – Woodmere Club (CC-WC) and serve as respective lead agency for this action. Overall, the Coastal Conservation District – Woodmere Club (CC-WC) establishes zoning regulations creating three Sub-Districts: the Open Space/Recreation Sub-District, the Single-Family Residential Sub-District, and the Clubhouse/Hospitality Sub-District. While the Open Space/Recreation Sub-District and Single-Family Residential Sub-District span all three jurisdictions, the Clubhouse/Hospitality Sub-District is located entirely within the Village of Woodsburgh. An Expanded Environmental Assessment has been prepared as a supplement to the Full Environmental Assessment Form to provide additional information related to proposed zoning district (attached under Section F).		
Name of Applicant/Sponsor: Town of Hempstead	Telephone: 516-812-3205 E-Mail: ckovit@tohmail.org	
Address: 1 Washington Street		
City/PO: Hempstead	State: New York	Zip Code: 11550
Project Contact (if not same as sponsor; give name and title/role): Charles S. Kovit, Chief Deputy Town Attorney	Telephone: 516-812-3205 E-Mail: ckovit@tohmail.org	
Address: 1 Washington Street		
City/PO: Hempstead	State: New York	Zip Code: 11550
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	Hempstead Town Board	Spring 2020
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	Nassau County Planning Commission	Spring 2020
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?
Residence B District (Town of Hempstead portion of the subject property); Residence AA District (Village of Lawrence portion of the subject property); Residence 1A and Residence 2A Districts (Village of Woodsburgh portion of the subject property).

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? Coastal Conservation District - Woodmere Club (CC-WC)

C.4. Existing community services.

a. In what school district is the project site located? Lawrence UFSD, Hewlett-Woodmere UFSD

b. What police or other public protection forces serve the project site?
Nassau County Police Department (4th Precinct)

c. Which fire protection and emergency medical services serve the project site?
Woodmere Fire Department

d. What parks serve the project site?
N/A

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.
____
____
iv. 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? 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: ________	☐Yes☐No
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? If Yes: *i.* Describe possible resource(s): ________ *ii.* Basis for identification: ________	☐Yes☐No
h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? 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.	☐Yes☐No
i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? 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 ☐Yes☐No

F. Additional Information

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

Please see attached Expanded Environmental Assessment.

G. Verification

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

Applicant/Sponsor Name Town of Hempstead Date 5/11/2020

Signature ________ Title Chief Deputy Town Attorney

PRINT FORM

Town of Hempstead
Village of Cedarhurst
Village of Woodsburgh
Village of Lawrence
The Woodmere Club Property

Appendix C – Traffic Impact Study

Traffic Impact Study (February 2020)

TRAFFIC IMPACT STUDY

PROPOSED COASTAL CONSERVATION DISTRICT – WOODMERE CLUB

WOODMERE, TOWN OF HEMPSTEAD
VILLAGE OF LAWRENCE
VILLAGE OF WOODSBURGH
NASSAU COUNTY, NEW YORK

PREPARED BY:

CAMERON ENGINEERING

177 CROSSWAYS PARK DRIVE
WOODBURY, NEW YORK

APRIL 2020

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APPENDICES

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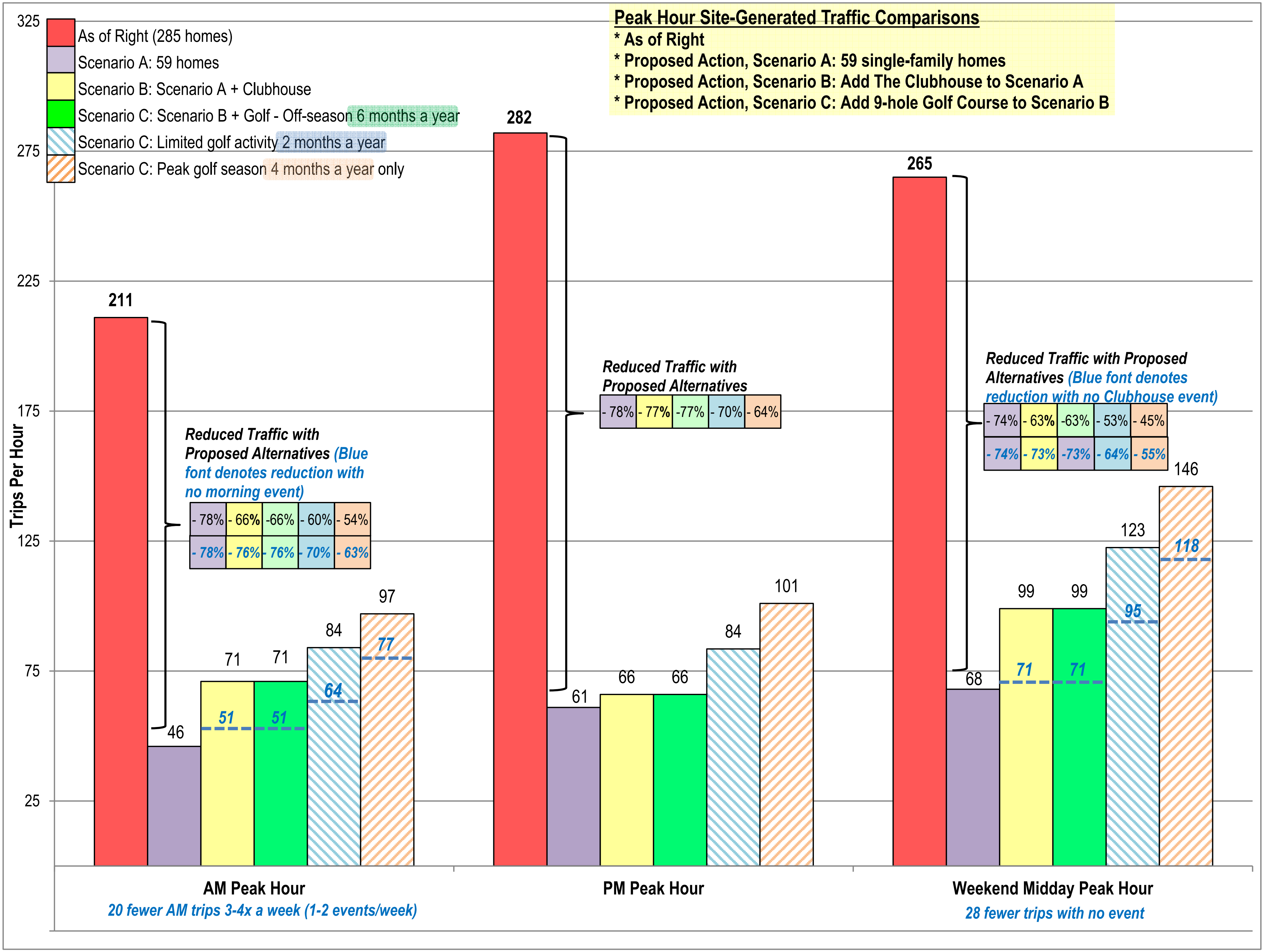
Summary and Principal Conclusions

- This study compares a 285-residence development scenario ("As of Right" existing Residence B zoning) as depicted in the Willow View Estates application, with three potential buildout scenarios with a proposed Coastal Conservation District:
  - Scenario A: 59 single-family homes
  - Scenario B: Scenario A plus the Clubhouse with an added hospitality use
  - Scenario C: Scenario B plus a 9-hole golf course
- The Clubhouse and golf course uses are periodic/seasonal and often generate no traffic. The Clubhouse would likely not host events every day and the golf course would be closed six months out of the year. The 285-residence scenario displaces these seasonal uses with a much denser development of single-family homes which generate traffic throughout the day, every day of the year. This results in significantly higher traffic generation with 285 residences than with any of the three Coastal Conservation District scenarios (59 residences with Clubhouse/golf use).
- Depending on the scenario and the time of year:
  - 285 residences generate ±74%-78% more traffic than Scenario A (59 residences)
  - 285 residences generate ±63%-77% more traffic than Scenario B (59 residences, Clubhouse)
  - 285 residences generate ±63%-77% more traffic than Scenario C (59 residences, Clubhouse, golf) roughly 6 months a year (mid-October to mid-April); 53%-70% more traffic roughly 2 months a year (mid-April to mid-May and mid-September to mid-October); and 45%-64% more traffic roughly 4 months a year (mid-May to mid-September)

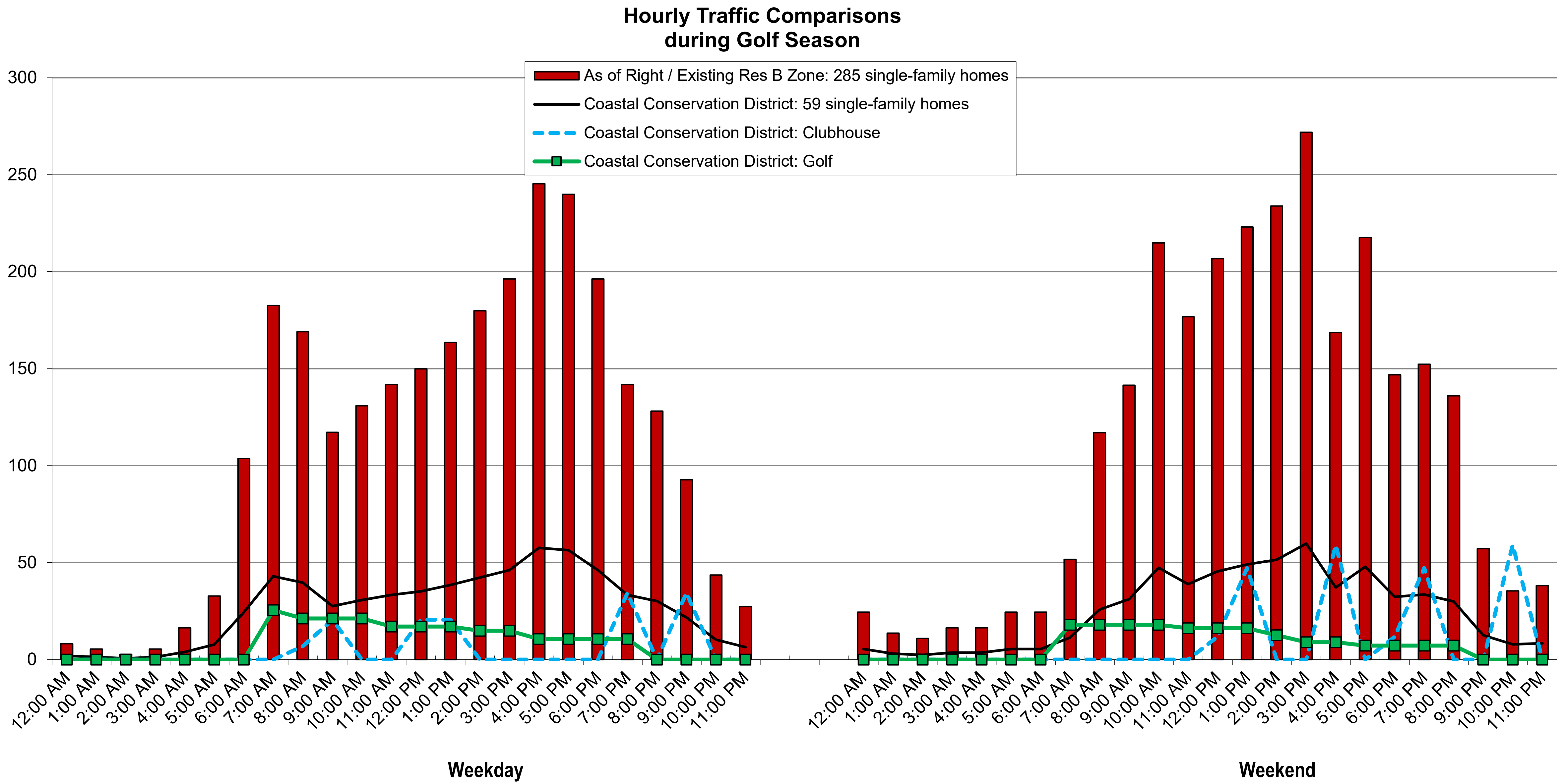
Chart 1 depicts the relative hourly trips for the As-of-Right 285 residences and Scenarios A, B, and C with 59 residences and hospitality/golf use. Traffic mitigation/impacts are based on peak hour traffic volumes and Levels of Service.

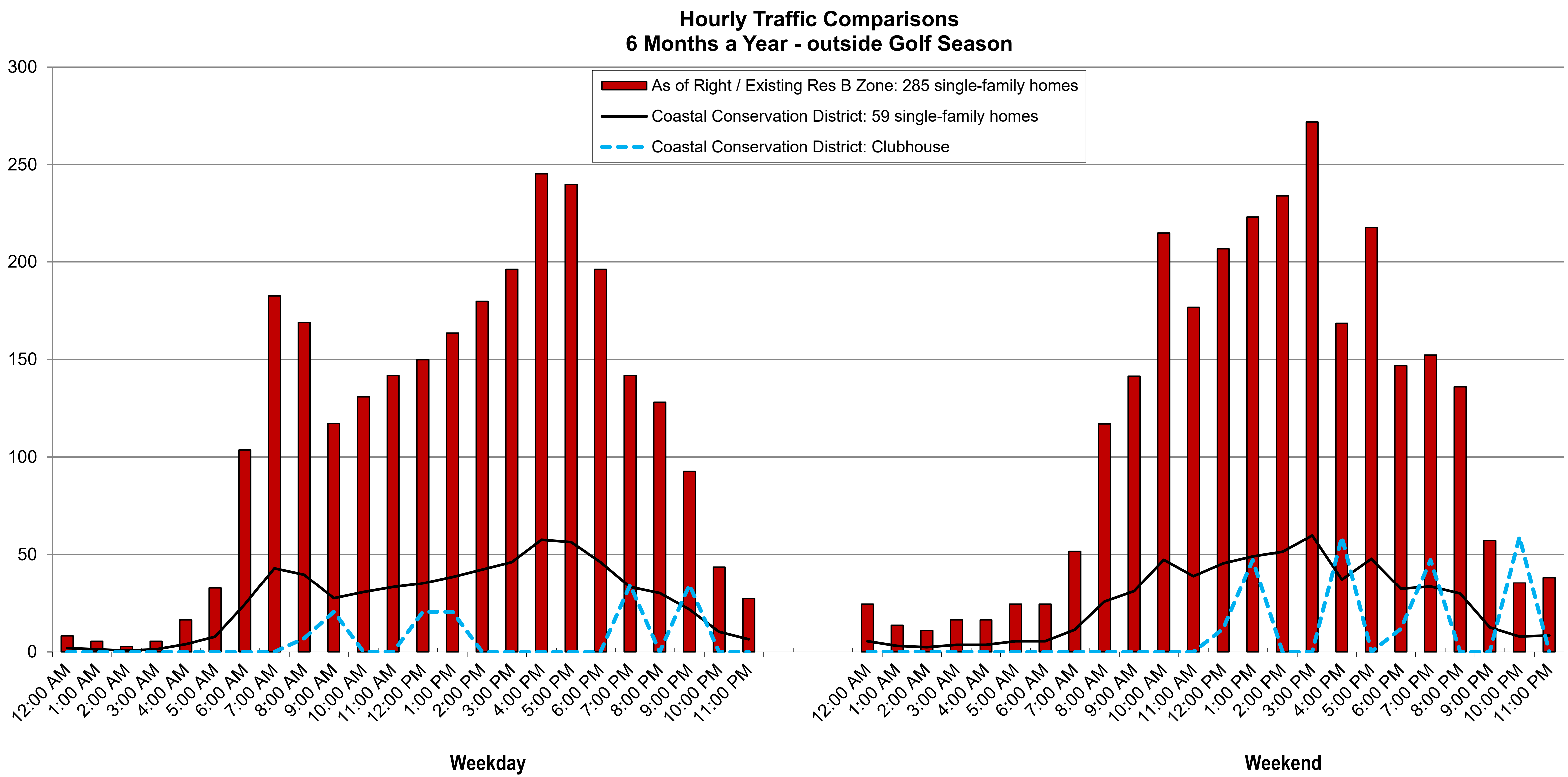
- The "Proposed Action" represents full buildout under the proposed zoning and does not require traffic mitigation at the intersections studied for this report.
- The scenario with 285 residences does require mitigation at the intersection of Broadway and Prospect Avenue. The Broadway/Prospect Avenue intersection would experience a noticeable difference in delay for southbound Prospect Avenue, and with a new driveway the northbound delays would be unacceptably high (over 360 seconds per vehicle, well within LOS F). As-of-Right development might require a traffic signal or other traffic mitigation. Potential mitigation measures would themselves impact existing traffic, e.g. with a signal that introduces new stops on Broadway and/or Prospect Avenue widening that removes existing street parking.

- The need for mitigation at Broadway-Prospect Avenue applies to the 285-residence scenario, with or without a new driveway opposite Prospect Avenue, as depicted on the Willow View Estates Subdivision Map.
- Based on the analyses and the conclusions herein, the Proposed Action will not create off-site traffic impacts, whereas the As-of-Right scenario will create significant adverse impacts at Broadway/Prospect Avenue, whose mitigation might itself increase delay on Broadway.
- It is also important to note the significant difference in daily traffic volumes between the scenarios with 285 residences vs. 59 residences and hospitality/golf use.
    - The 285 residences generate traffic throughout the day (whereas the Clubhouse and golf uses do not)
    - The 285 residences represent a much denser land development, displacing hospitality/golf uses that are often dormant, with single-family homes that generate traffic throughout the day and year-round
    - The 285 residences generate almost five times the traffic of the proposed zoning
    - The 285 residences would add up to more than 2,000 additional vehicles per day on Broadway compared to full buildout under the proposed zoning (59 residences, Clubhouse/golf). This represents almost a 20% increase in daily volume on Broadway, which is a two-lane roadway.



Peak Hour Site-Generated Traffic Comparisons
* As of Right
* Proposed Action, Scenario A: 59 single-family homes
* Proposed Action, Scenario B: Add The Clubhouse to Scenario A
* Proposed Action, Scenario C: Add 9-hole Golf Course to Scenario B
As of Right (285 homes)
Scenario A: 59 homes
Scenario B: Scenario A + Clubhouse
Scenario C: Scenario B + Golf - Off-season 6 months a year
Scenario C: Limited golf activity 2 months a year
Scenario C: Peak golf season 4 months a year only
Trips Per Hour
325
275
225
175
125
75
25
211
46
71
71
84
97
51
51
64
77
282
61
66
66
84
101
265
68
99
99
123
146
71
71
95
118
Reduced Traffic with Proposed Alternatives (Blue font denotes reduction with no morning event)
- 78% - 66% -66% - 60% - 54%
- 78% - 76% - 76% - 70% - 63%
Reduced Traffic with Proposed Alternatives
- 78% - 77% -77% - 70% - 64%
Reduced Traffic with Proposed Alternatives (Blue font denotes reduction with no Clubhouse event)
- 74% - 63% -63% - 53% - 45%
- 74% - 73% -73% - 64% - 55%
AM Peak Hour
20 fewer AM trips 3-4x a week (1-2 events/week)
PM Peak Hour
Weekend Midday Peak Hour
28 fewer trips with no event


Hourly Traffic Comparisons
during Golf Season
As of Right / Existing Res B Zone: 285 single-family homes
Coastal Conservation District: 59 single-family homes
Coastal Conservation District: Clubhouse
Coastal Conservation District: Golf
300
250
200
150
100
50
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Weekday
Weekend


Hourly Traffic Comparisons
6 Months a Year - outside Golf Season
As of Right / Existing Res B Zone: 285 single-family homes
Coastal Conservation District: 59 single-family homes
Coastal Conservation District: Clubhouse
300
250
200
150
100
50
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Weekday
Weekend

Below is the summary of traffic flow delay and Level of Service ("LOS") for Broadway at Prospect Avenue, during the future Build year (2022):

	As of Right: 285 residences				**Proposed Coastal Conservation District buildout with 59 residences, Clubhouse, golf use**					
AM Peak Hour	**No new driveway**		**With New Driveway**		**Scenario A**		**Scenario B**		**Scenario C**	
Movement	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
EB Left-Thru	10.4	B	10.1	B	10.1	B	10.1	B	10.1	B
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Northbound			**527.7**	**F**						
SB Left-Right	**46.0**	**E**	**43.9**	**E**	35.1	E	36.9	E	38.9	E
Intersection	*2.5*	*A*	***20.2***	***C***	*2.0*	*A*	*2.1*	*A*	*2.2*	*A*
PM Peak Hour										
EB Left-Thru	10.4	B	10.2	B	10.2	B	10.2	B	10.3	B
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Northbound			**400.2**	**F**						
SB Left-Right	**136.3**	**F**	**126.0**	**F**	71.2	F	71.2	F	78.8	F
Intersection	*8.6*	*A*	***16.6***	***C***	*4.8*	*A*	*4.8*	*A*	*5.2*	*A*
Weekend Peak Hour										
EB Left-Thru	9.7	A	9.4	A	9.4	A	9.5	A	9.5	A
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Northbound			**380.3**	**F**						
SB Left-Right	**47.4**	**E**	**45.6**	**E**	32.0	D	33.9	D	37.1	E
Intersection	*3.5*	*A*	***14.6***	***B***	*2.6*	*A*	*2.7*	*A*	*2.9*	*A*

1. Background

1.1 Purpose of Report

The Town of Hempstead, Village of Woodsburgh, and Village of Lawrence have entered into an Intermunicipal Agreement to further their agreement to develop a Coastal Conservation District for the Woodmere Club site. The Woodmere Club is located south of Broadway and west of Meadow Drive on ±118.4 acres (see Figure 1-1). It is a private country club that was sold in 2018, and the current property owner intends to redevelop the project site in or after 2022.

There are three potential scenarios under the "Action" of implementing the proposed Coastal Conservation District; each scenario has 59 single-family homes. Scenario A has only the 59 single-family homes; Scenario B also retains the existing Clubhouse with an added hospitality use; Scenario C adds a 9-hole golf course. This report analyzes all three Scenarios: A, B, and C, and compares them to potential development under existing zoning (285 single-family homes).

This traffic study analyzes the potential traffic impacts of the proposed zoning on the adjacent street system. This study reviews the area's existing roadway characteristics and traffic conditions (traffic volumes, traffic flow quality, and geometry), considers alternate site development without the new zoning (i.e. existing baseline zoning applies), estimates the peak-period trip generation with the new zoning (three scenarios), assesses the various trip generation during different times of the year, and assesses the effect of this additional traffic on surrounding roads.

1.2 Study Methodology and SEQR Analytical Framework

This study comprises the development and analysis of the following scenarios:

1. Existing Traffic Conditions (volumes, flow, geometries)
2. As-of-Right Scenario with Residence B zoning (anticipated future traffic conditions absent proposed rezoning)
3. Three Scenarios (A, B, and C) with the Coastal Conservation District (traffic conditions anticipated in the future with the proposed rezoning: 59-single-family homes with and without the Clubhouse/9-hole golf course)
4. Analysis of the incremental differences between the three Coastal Conservation District Scenarios and the As-of-Right Scenario
5. Identification of potential adverse traffic impacts resulting from the Proposed Action (Coastal Conservation District Scenarios A, B, or C with 59-single-family homes, Clubhouse/golf use) and appropriate mitigation (if applicable)

6. Conclusion (with the proposed mitigation measures, such that the Proposed Coastal Conservation District does not result in significant adverse traffic impacts, so no further analysis is required)

A. Assess Existing Traffic Conditions on the Project Site and at the Study Intersections

- Examine the proposed zoning code and code-compliant site plans.
- Determine the Average Annual Daily Traffic [AADT] volumes near the property using New York State Department of Transportation [NYSDOT] 24-hour data.
- Visit the site to observe prevailing traffic conditions and nearby physical features, and to identify "key intersections" that this proposal might impact.
- Perform traffic counts at those key intersections during weekday AM (7:00-9:00 am), PM (4:00-6:00 pm), and Sunday midday (11:00 am-2:00 pm) peak traffic periods to establish the existing peak hour volumes. In the Five Towns, Sunday is the busier weekend day. Adjust counted traffic to depict peak spring-summer conditions, when traffic is near its highest volumes of the year.
- Determine the existing levels of service (LOS) at the study intersections, using *Synchro* version 10, a software package that complies with the guidelines of the *Highway Capacity Manual Sixth Edition* (*HCM 6*).

B. Determine the As-of-Right scenario: Future conditions absent the proposed rezoning

- Obtain the area's ambient growth rate from the New York State Department of Transportation (NYSDOT); this rate accounts for general population growth.
- Incorporate the traffic associated with known other projects being planned nearby, whose traffic has the potential to utilize the key intersections by 2022.
- Consider the anticipated development in the future under current zoning (approximately 285 single-family homes). Determine the numbers of vehicular trips associated with this dwelling unit yield and distribute this traffic to the study intersections. Conduct two distributions:
  1. With no new access to Broadway
  2. With a new driveway on Broadway, opposite Prospect Avenue (which requires Nassau County approval) as depicted on the Willow View Estates Subdivision Map
- These features provide the potential traffic volumes in 2022 absent the proposed rezoning.
- Use *Synchro* to determine future As-of-Right levels of service.

C. Analyze the three Scenarios with the proposed Coastal Conservation District zoning:

(Scenario A) 59 single-family homes;

(Scenario B) 59 single-family homes with the Clubhouse; and

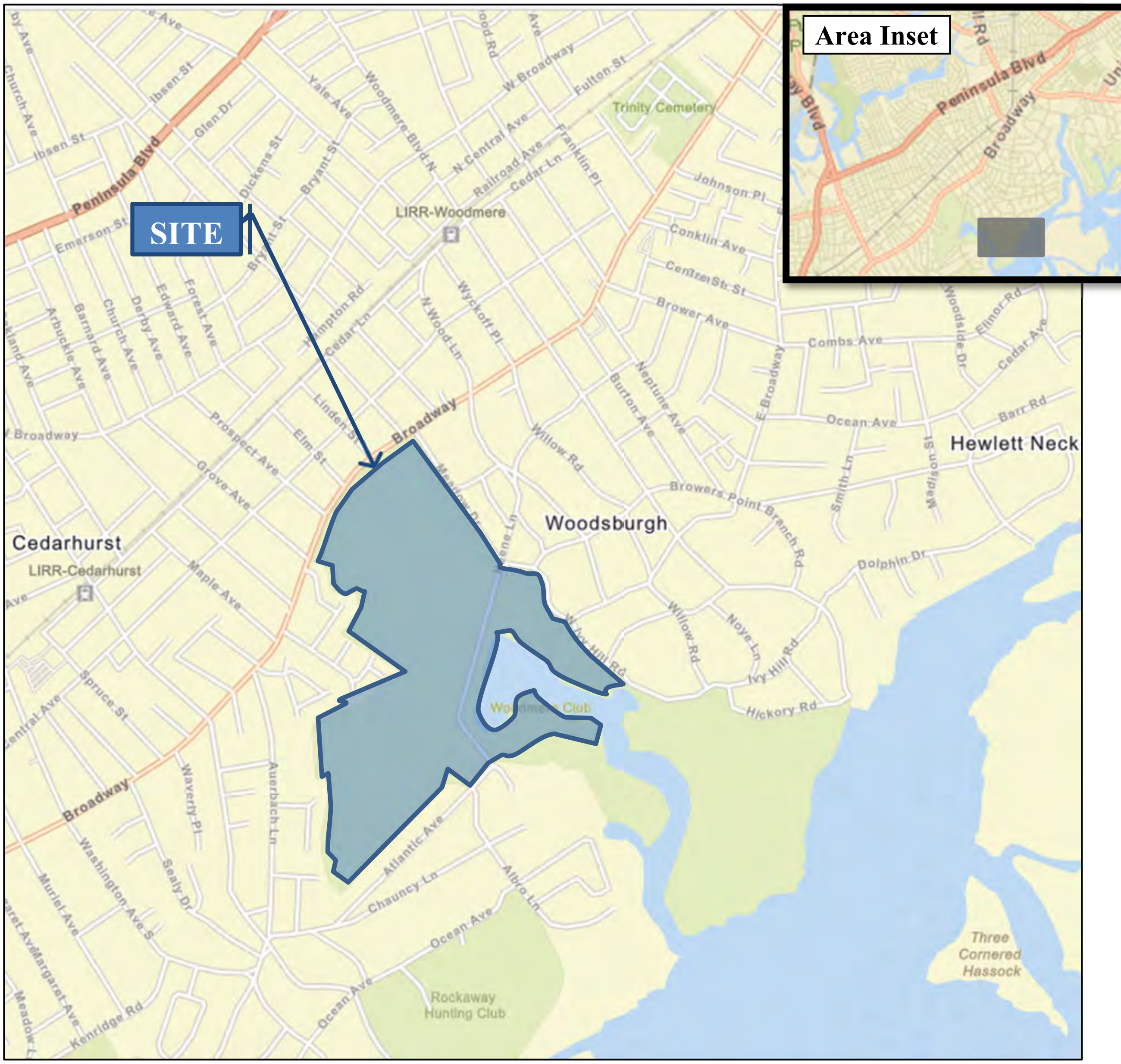
(Scenario C) 59 single-family homes with the Clubhouse and a 9-hole golf course

- Discuss the potential site plan yield, layout, access, and anticipated non-residential operations.
- Discuss on-site parking in qualitative terms.
- Calculate the traffic generated in the Coastal Conservation District Scenarios A, B, and C (59 single-family homes, Clubhouse/golf) during peak hours. The calculations utilize the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10^{th} Ed.), local summertime golf course traffic counts, and use-specific projections.
- This calculation includes references to the periodic/seasonal nature of the traffic associated with Scenarios B and C (Clubhouse/golf). The Clubhouse does not host events every day, and golf season is only active for 6 months a year, 2 of which comprise limited golf activity as the season gears up or winds down for the year.
- Distribute site-generated traffic to specific movements at the key intersections to develop the expected future traffic volumes with the proposed zoning (the Proposed Action).
- Use *Synchro* to determine the associated levels of service with the zone change under either open space scenario.

D. Identify the potential for adverse traffic-related impacts in the three Scenarios A, B, and C with the proposed Coastal Conservation District (59 single-family homes, Clubhouse/golf)

- Compare the levels of service between the As-of Right Scenario and the three Proposed Action Scenarios to determine whether the Proposed Action has the potential to result in any significant adverse traffic impacts.
- Identify practicable mitigation measures that would be necessary to reduce or eliminate the potential for significant adverse traffic impacts (“Mitigated Condition”), if required.

Figure 1-1: Project Location Map



2. Existing Conditions

2.1 Existing Land Use

Land uses within the boundary of the ±118-acre Project Site are a private golf club which includes (i) Open Space (an 18-hole private golf course), and (ii) Recreation, including the Clubhouse, outdoor tennis courts, and an outdoor swimming pool. The Project Site also contains a surface parking lot. There are no residential uses on the Project Site.

2.2 Descriptions of Nearby Roadways

Broadway is a Nassau County minor arterial with one lane in each direction and a 30 mph speed limit. Between Prospect Avenue and Woodmere Boulevard, the Average Annual Daily Traffic (AADT) volume is approximately 15,500 vehicles per day (“vpd”)[1].

Meadow Drive is a north-south Village of Woodsburgh road that runs between Broadway and Keene Lane. It has one lane in each direction and a 30 mph speed limit. It is classified as a minor arterial and its AADT volume is approximately 625 vpd.

Keene Lane is a one-way southwest Village of Woodsburgh street with a 30 mph speed limit. Its AADT is less than 100 vpd east of Meadow Drive.

Prospect Avenue is a north-south local Town street with one lane in each direction between Broadway and W. Broadway. Its posted speed limit is 30 mph and its AADT volume is approximately 2,700 vpd.

Woodmere Boulevard is considered a major collector. It is a north-south Nassau County roadway with one lane in each direction and a 30 mph speed limit. Its approximate AADT is 7,800 vpd north of Broadway and 3,500 vpd south of Broadway.

2.3 Key Intersections

Based on site visits, there were five key intersections identified:

1. Broadway at Meadow Drive
2. Broadway at Pine Street
3. Broadway at Woodmere Boulevard
4. Broadway at Prospect Avenue
5. Albro Lane at Atlantic Avenue

The intersections, traffic control, and lane designations are listed below.

[1] Based on NYSDOT (New York State Department of Transportation) counts - see Appendix A.

1. Broadway at Meadow Drive: 2-Phase traffic signal

- Northbound: 1 lane for left and right turns
- Eastbound: 1 lane for through traffic and right turns
- Westbound: 1 lane for through traffic and left turns

2. Broadway at Pine Street: Stop sign on Pine Street

- Southbound: 1 lane for left and right turns
- Eastbound: 1 lane for left turns and through traffic
- Westbound: 1 lane for through traffic and right turns

3. Broadway at Woodmere Boulevard: 2-Phase traffic signal

- Northbound, Southbound, Eastbound, and Westbound: 1 lane for left turns, through traffic, and right turns

4. Broadway at Prospect Avenue: Stop sign on Prospect Avenue

- Southbound: 1 lane for left and right turns
- Eastbound: 1 lane for through traffic and left turns
- Westbound: 1 lane for through traffic and right turns

5. Albro Lane at Atlantic Avenue: All-way stop sign control

- Northbound: 1 wide lane (over 16 feet wide) used as 1 left turn lane and 1 right turn lane
- Eastbound: 1 through lane
- Westbound: 1 through lane

2.4 Traffic Volumes

Traffic volumes were counted at the study intersections on Sunday, November 17, 2019 from 11:00 am-2:00 pm, and Tuesday November 19, 2019 from 7:00-9:00 am and 4:00-6:00 pm. Localized traffic in the Five Towns is busier on Sundays than on Saturdays, based on local experience and NYSDOT data, so this report considers Sunday as the busier weekend day.

As described in Section 2.5, before the traffic volumes were analyzed, they were adjusted (increased) to reflect June traffic conditions.[2]

2.5 Seasonal Adjustment

Traffic volumes tend to vary from month to month. Due to the scheduling of this application, this study's traffic counts were obtained in November, when peak hour traffic tends to be slightly less busy than average. To model a more conservative scenario (i.e., a busier month) it is standard traffic engineering practice in New York State to increase off-peak counts by a NYSDOT "monthly adjustment factor" as a reasonable substitute for peak season traffic counts. The counted November volumes were adjusted (increased) to reflect June; see Appendix B. The resulting volumes (shown in Figure 2-1 to Figure 2-3) were used to

[2] For the purposes of a traffic impact study, "typical months" refer to the September to June school year, and the busiest typical month is June.

determine the baseline levels of service.

Note: The Woodmere Club's golf course was not in use during the traffic counts, and it is unlikely that the catering hall was in use based on the counted volumes. Therefore, no adjustment was needed to remove traffic associated with The Woodmere Club, which is anticipated to cease by 2022.

2.6 Existing Levels of Service

An intersection's Level of Service (LOS) describes its quality of traffic flow, and ranges in grade from LOS "A" (relatively congestion-free) to LOS "F" (congested). LOS grades are based on average delay, measured in "seconds per vehicle," and the threshold delays for each grade depend on whether the intersection is controlled by a signal or a stop sign. Detailed LOS descriptions are in Appendix B. Existing LOS analyses were performed using Synchro 10, a software package that complies with the guidelines of the *Highway Capacity Manual Sixth Edition* (*HCM 6*).

Synchro software incorporates the following:

- Counted/adjusted traffic volumes, in 15-minute intervals
- The numbers of lanes (turn lanes, through lanes) in each direction
- Turn lane storage (where applicable)
- Whether an intersection has a signal or stop sign
- If there is a signal, the amount of green, yellow, and red time for each movement
- The use of left turn arrows or right turn arrows at signalized intersections
- The relative locations of adjacent intersections

The existing levels of service are summarized in Table 2-1, and the analysis worksheets are in Appendix D.

Existing Levels of Service

Intersection	Movement	AM Peak Hour Delay (sec/veh)	AM v/c Ratio	AM LOS	PM Peak Hour Delay (sec/veh)	PM v/c Ratio	PM LOS	Sunday Peak Hour Delay (sec/veh)	Sunday v/c Ratio	Sunday LOS
Broadway at Meadow Drive	Eastbound TR	5.3	0.57	A	4.7	0.52	A	5.0	0.55	A
	Westbound LT	1.0	0.50	A	1.1	0.54	A	0.7	0.41	A
	Northbound LR	37.7	0.42	D	37.2	0.39	D	36.0	0.26	D
	INTERSECTION	*4.4*		*A*	*3.9*		*A*	*3.9*		*A*
Broadway at Woodmere Boulevard	Eastbound LTR	17.4	0.66	B	15.1	0.51	B	15.4	0.60	B
	Westbound LTR	8.8	0.53	A	10.5	0.55	B	7.0	0.43	A
	Northbound LTR	30.4	0.48	C	30.9	0.61	C	29.9	0.34	C
	Southbound LTR	34.3	0.71	C	34.8	0.74	C	34.2	0.68	C
	INTERSECTION	*17.9*		*B*	*18.5*		*B*	*16.2*		*B*
Broadway at Pine Street	Eastbound Left-Through	0.0	0.00	A	9.6	0.00	A	8.7	0.00	A
	Westbound Through-Right	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A
	Southbound Left-Right	15.8	0.00	C	26.4	0.00	D	17.0	0.00	C
	Intersection	*0.2*		*A*	*0.6*		*A*	*0.3*		*A*
Broadway at Prospect Avenue	EB Left-Thru	9.8	0.00	A	10.0	0.00	A	9.3	0.00	A
	WB Thru-Right	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A
	SB Left-Right	32.8	0.00	D	61.0	0.00	F	29.0	0.00	D
	Intersection	*2.0*		*A*	*4.2*		*A*	*2.4*		*A*
Albro Lane at Atlantic Avenue	EB Thru-Right	7.5	0.00	A	6.8	0.00	A	6.5	0.00	A
	WB Left-Thru	7.4	0.00	A	7.6	0.00	A	7.2	0.00	A
	NB Left-Right	7.7	0.00	A	7.5	0.00	A	7.1	0.00	A
	Intersection	*7.4*		*A*	*7.6*		*A*	*7.1*		*A*

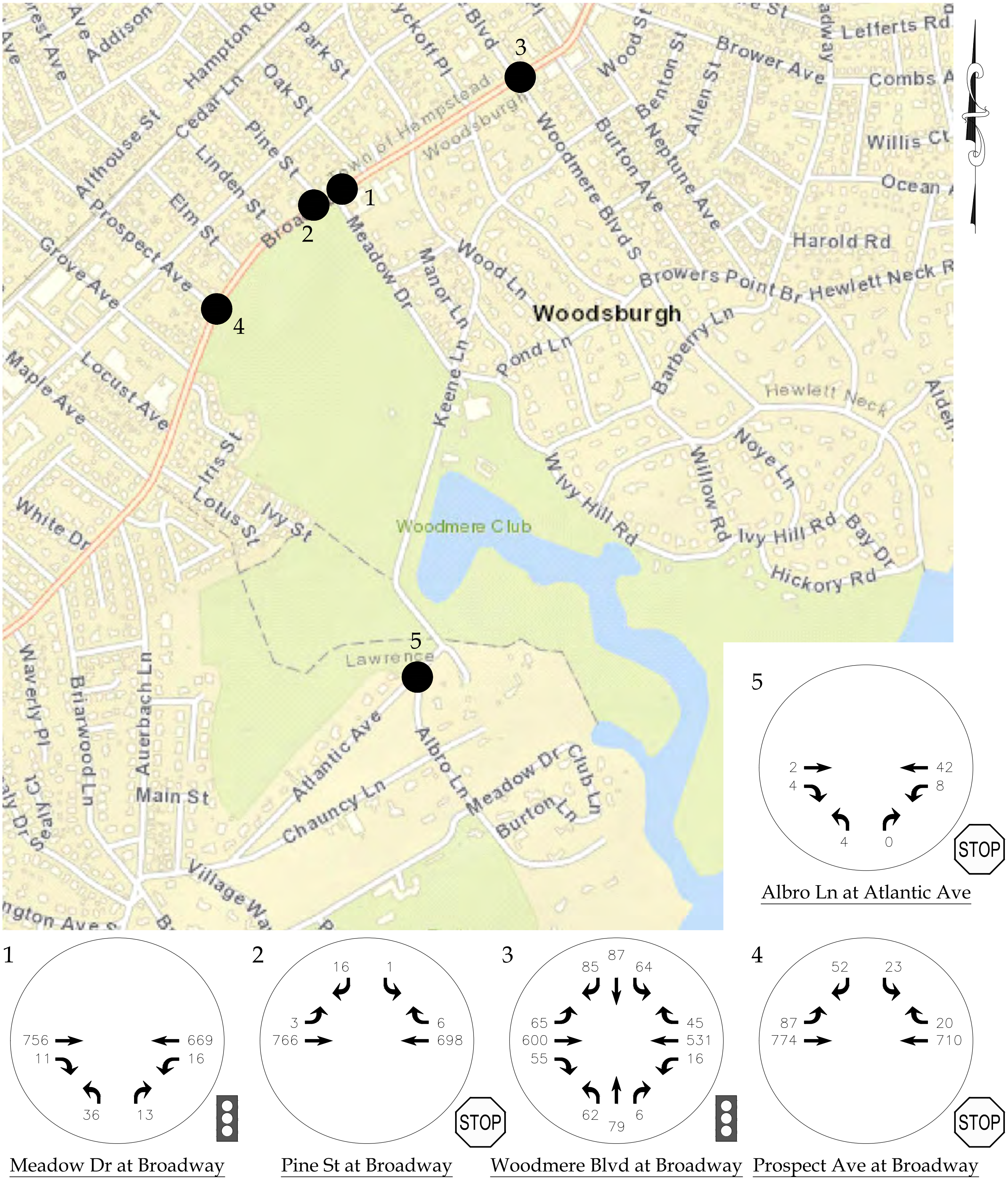
2.7 Facilities for Non-Vehicular Traffic

The following comprise the existing pedestrian/ADA accommodations at the primary intersection of Broadway and Meadow Drive:

- A 4-foot wide sidewalk is provided along the north side of Broadway, west of Meadow Drive and along both sides of the road, east of Meadow Drive. A 4-foot wide sidewalk is also provided on the east side of Meadow Drive, south for approximately 100 feet. There are pedestrian ramps in both directions in the southeast corner and a ramp on the north side of Broadway. A crosswalk is painted for crossing Broadway on the east side of the intersection.
- Crosswalks are eight feet wide.
- Pedestrian signals with push buttons operate on both sides of the crosswalk.
- Street lighting (for nighttime walking) is present on the north side of Broadway, at a height of 20-25 feet and spaced every ±100 feet

2.8 Grades and Sight Distance

Roadway grades along Broadway and Meadow Drive are generally flat and offer adequate driver views. The intersection of Albro Lane at Atlantic Avenue has overgrown vegetation on the southeast corner that may limit sight distance if it is not cleared. The other two stop-sign controlled intersections have sufficient visibility in each direction.



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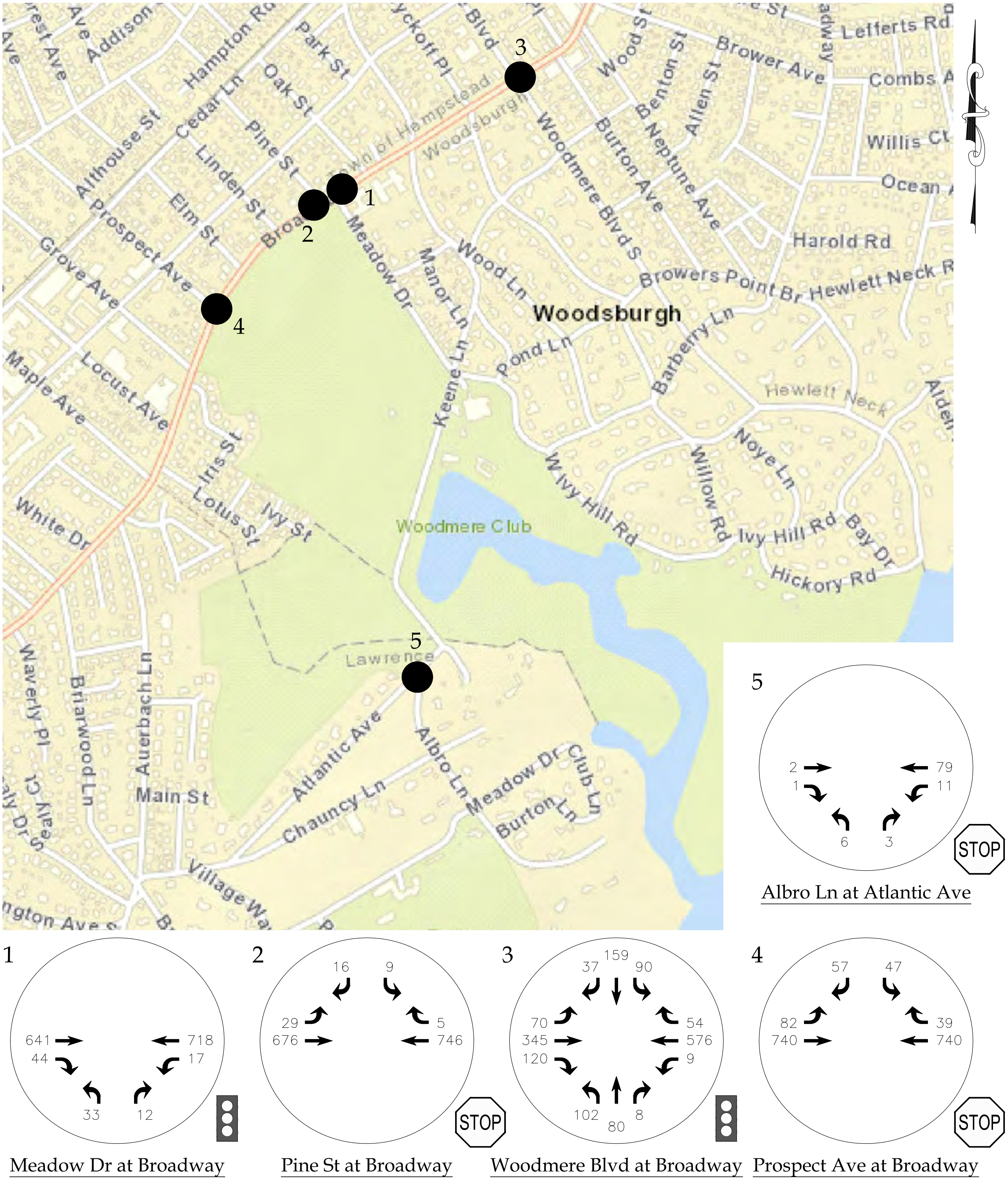
Existing AM Peak Hour Volumes

Figure No. 2-1



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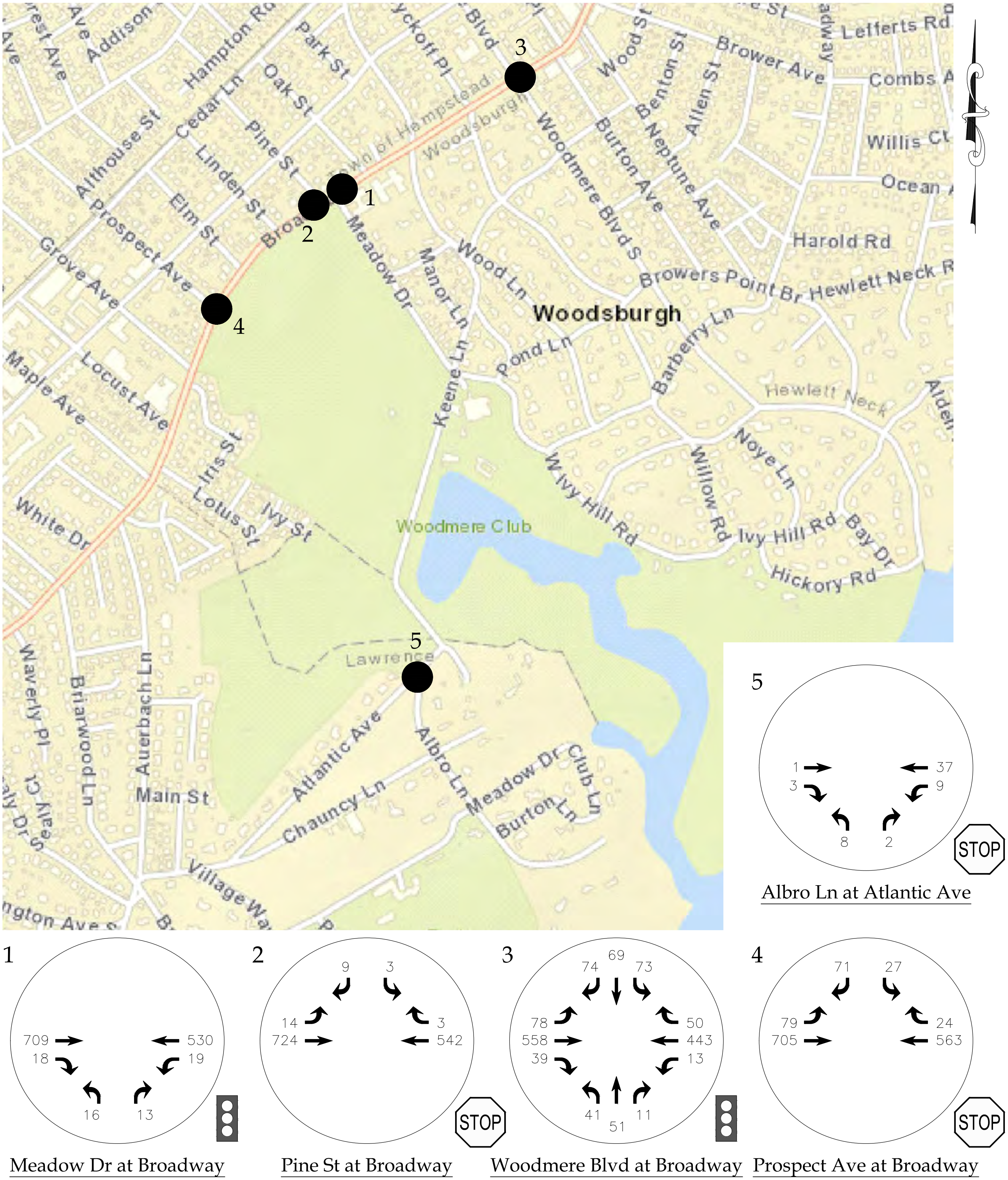
Existing PM Peak Hour Volumes

Figure No. 2-2



Existing Sunday Peak Hour Volumes

Figure No. 2-3

3. As-of Right Scenario

Traffic conditions in the As-of-Right Scenario will be informed by three anticipated conditions:

- **Ambient projected population growth**
- **Other planned developments** close to the site
- **As-of-right development** anticipated to occur on the Project Site pursuant to the existing underlying zoning provisions.

3.1 Ambient Growth

According to the NYSDOT, the annual ambient growth rate in this part of Nassau County is 0.6% per year. The factor was applied to the seasonally adjusted traffic volumes for three years to project the adjusted volumes to the year 2022.

3.2 Other Planned Developments ("No Build Projects")

"No Build Projects" refer to projects or zoning initiatives that are planned in the general surrounding area. These projects have the potential to change the traffic volume at one or more of the key intersections by 2022. As of the writing of this report, there were two such other projects being planned:

- *Town of Hempstead Transit Oriented Zoning Initiative*: The Town of Hempstead is proposing three zoning district codes in sections of North Lawrence and Inwood. In its projected 3-year buildout, various parcels could redevelop from an industrial-single-family mix to transit-oriented multi-family, office, and food/service uses:

Table 3-1: Town of Hempstead Zoning Initiative Yield and Trips

Existing Land Uses:		Redevelopment Potential:	
4,540 s.f.	General office space	750 s.f.	Coffee-donut shop
18,038 s.f.	Retail	15,672 s.f.	General office space
111,890 s.f.	Warehouse/Storage	3,070 s.f.	Takeout restaurant
45,970 s.f.	Industrial	17,277 s.f.	Retail
962 s.f.	Deli / Convenience market	2,500 s.f.	Panera-type restaurant
3,004 s.f.	Auto service	5,850 s.f.	Fast casual restaurants
25	Apartments	1,950 s.f.	Quality restaurant
55	Single-family homes	2,925 s.f.	Bank/Financial office
	School Bus Depot	639	Apartments
		60	Townhouses/Row houses

AM Peak Hour	**PM Peak Hour**	**Weekend Peak Hours**
Enter: 68 tph*	Enter: 90 tph	Enter: 90 tph
Exit: 149 tph	Exit: 10 tph	Exit: 72 tph
Total: 218 tph	Total: 100 tph	Total: 162 tph

* tph = trips per hour, which may not add directly due to rounding

- *Village of Cedarhurst Zoning Initiative*: a new Incentive Overlay District with a potential redevelopment site at Pearsall Avenue-Rockaway Turnpike that could generate traffic on Broadway past the Woodmere Club. The site would have 3,426 s.f. retail, a 1,550 s.f. café, 34 apartments, and 78 condominiums replacing a 1,346 s.f. convenience market, a single-family house, a 2-family duplex, a 4-unit home, 8 apartments, 2,856 s.f. retail, and a 14,950 s.f. warehouse-retail building. Net new trips would be:

Table 3-2: Village of Cedarhurst Zoning Initiative Trips

Weekday AM Peak Hour	Weekday PM Peak Hour	Weekend Peak Hour
Enter: 53 tph	Enter: 12 tph	Enter: 25 tph
Exit: 74 tph	Exit: 0 tph	Exit: 27 tph
Total: 127 tph	Total: 12 tph	Total: 52 tph

Trip generation and distribution of these zoning initiatives were referenced from their traffic studies, which utilized the 10th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. See Appendix E.

3.3 As-of-Right On-Site Redevelopment

Absent the Proposed (zoning) Action, the project site is anticipated to be developed with approximately 285 single-family homes. This "As of Right" use reflects Residence B zoning. This anticipates a 6,000 s.f. lot size within the Town of Hempstead; 40,000 s.f. lot size within the Village of Lawrence; and 43,560 s.f. lot size within the Village of Woodsburgh, accessing Meadow Drive and a new northbound lane to Broadway across from Prospect Avenue[3]. Traffic generation was referenced from the 10th Edition of the ITE *Trip Generation Manual*:

Table 3-3: As-of-Right Peak Hour Trips (285 Single-Family Homes)

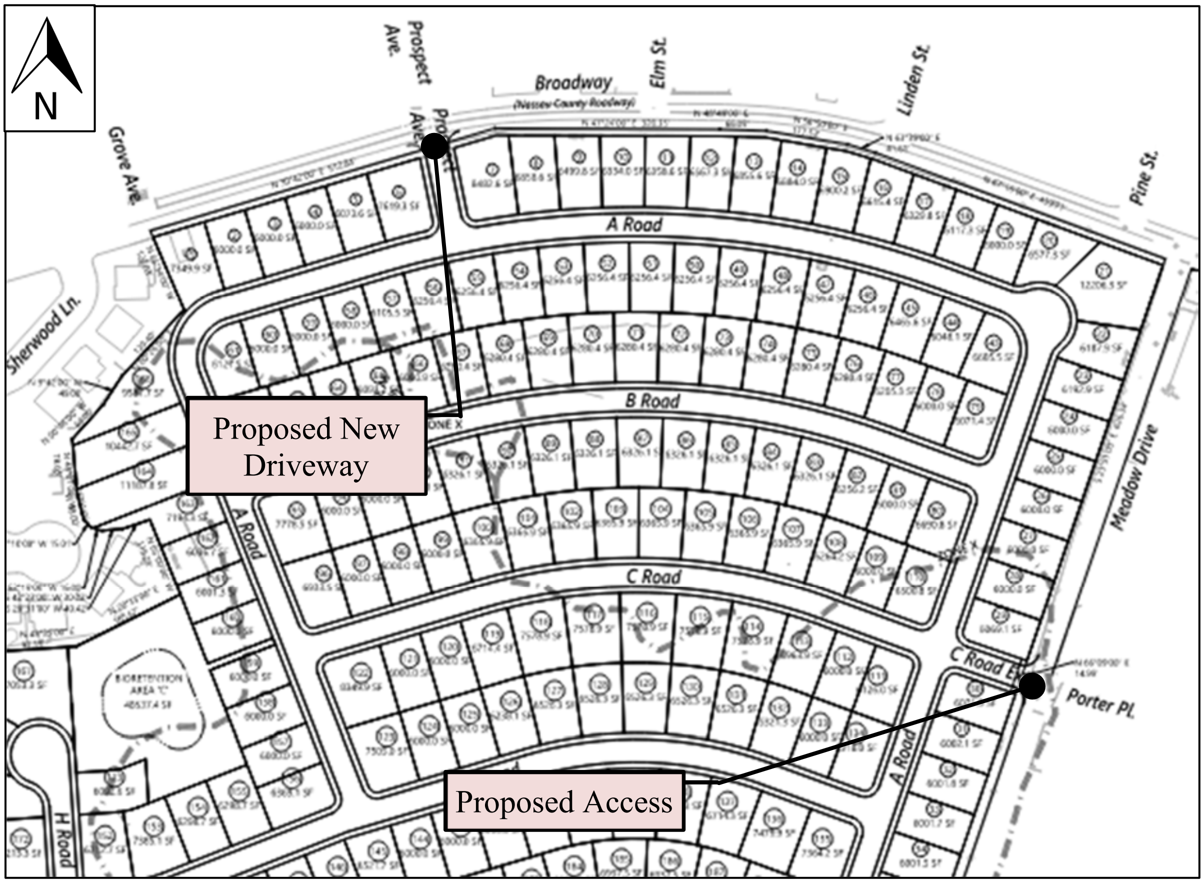
Weekday AM Peak Hour	Weekday PM Peak Hour	Weekend Peak Hour
Enter: 53 tph	Enter: 178 tph	Enter: 143 tph
Exit: 158 tph	Exit: 104 tph	Exit: 122 tph
Total: 211 tph	Total: 282 tph	Total: 265 tph

The Willow View Subdivision Plan (*excerpted on the next page*) depicts an access to Meadow Drive as one of two access points. Its second access point would be a new driveway created on Broadway, opposite Prospect Avenue, which would require Nassau County Department of Public Works 239f approval. The second driveway is not "As-of-Right" but it is a component of the Willow View Estates application as of February 2020, so this As-of-Right scenario was analyzed with and without the second driveway.

[3] Source: Subdivision Plan and Final Scope for the Willow View Estates DEIS "Brief Description of the Proposed Action", adopted by the Nassau County Planning Commission on September 26, 2019.
Accessed at https://www.nassaucountyny.gov/4705/Willow-View-Estates-Subdivision-SEQR

For an apples-to-apples comparison[4] at Broadway-Meadow Drive, the study intersections were first analyzed "As-of-Right" without the proposed new driveway, with 100% of Willow View traffic utilizing Meadow Drive, followed by a second analysis with a new driveway as shown on the Willow View Estates Subdivision Plan.

A new driveway in this location might handle roughly 40% of Willow View Estates traffic.



The associated traffic from ambient growth, specific other projects, and alternate on-site redevelopment were added to the background "Adjusted to June 2019" volumes to determine the "2022 As-of-Right" volumes (see Appendix F), and the data are summarized together with the levels of service with the Coastal Conservation District (59 single-family homes and Clubhouse/golf use) in Section 5.

Table 3-4 shows the traffic associated with the No Build Projects and As-of-Right development on the site. Figure 3-1 and Figure 3-2 depict the As-of-Right scenario's anticipated traffic distribution, and Figure 3-3 to Figure 3-5 depict As-of-Right volumes.

[4] As discussed in Section 4.2, Site Access, the Proposed Action's Scenarios A, B, and C (59 residences and Clubhouse/golf) do not have site plans; Scenario C has a Master Plan Sketch Study depicting conceptual access on Meadow Drive. There would be no new access onto Broadway, so an apples-to-apples comparison has no new access.

Table 3-4
Other Planned Projects

	Town of Hempstead Zoning Overlay (net new trips) AM	PM	SUN		Village of Cedarhurst Zoning Overlay (Site 2) AM	PM	SUN
Enter	**68**	**90**	**90**	Enter	**53**	**12**	**25**
Exit	**149**	**10**	**72**	Exit	**74**	**0**	**27**
Total	218	100	162	Total	127	12	52

Dir	Movemt	Traffic Distribution % In	% Exit	OTHER PROJECT 1 Generated Volume AM	PM	SUN	Traffic Distribution % In	% Exit	OTHER PROJECT 2 Generated Volume AM	PM	SUN	Total Other Project Volume AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway														
NB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
SB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
EB	Left			---	---	---			---	---	---	0	0	0
	Through		7%	10	1	5		15%	11	0	4	22	1	9
	Right			---	---	---			---	---	---	0	0	0
WB	Left			---	---	---			---	---	---	0	0	0
	Through	7%		5	6	6	15%		8	2	4	13	8	10
	Right			---	---	---			---	---	---	0	0	0
INTERSECTION: Pine Street and Broadway														
NB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
SB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
EB	Left			---	---	---			---	---	---	0	0	0
	Through		7%	10	1	5		15%	11	0	4	22	1	9
	Right			---	---	---			---	---	---	0	0	0
WB	Left			---	---	---			---	---	---	0	0	0
	Through	7%		5	6	6	15%		8	2	4	13	8	10
	Right			---	---	---			---	---	---	0	0	0
INTERSECTION: Woodmere Boulevard and Broadway														
NB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
SB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
EB	Left			---	---	---			---	---	---	0	0	0
	Through		7%	10	1	5		15%	11	0	4	22	1	9
	Right			---	---	---			---	---	---	0	0	0
WB	Left			---	---	---			---	---	---	0	0	0
	Through	7%		5	6	6	15%		8	2	4	13	8	10
	Right			---	---	---			---	---	---	0	0	0
INTERSECTION: Prospect Avenue and Broadway														
NB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
SB	Left			---	---	---			---	---	---	0	0	0
	Through			---	---	---			---	---	---	0	0	0
	Right			---	---	---			---	---	---	0	0	0
EB	Left			---	---	---			---	---	---	0	0	0
	Through		7%	10	1	5		15%	11	0	4	22	1	9
	Right			---	---	---			---	---	---	0	0	0
WB	Left			---	---	---			---	---	---	0	0	0
	Through	7%		5	6	6	15%		8	2	4	13	8	10
	Right			---	---	---			---	---	---	0	0	0

Table 3-4 (continued)
Trip Distribution and Assignment: As of Right with 285 Single-Family Homes

0.6% growth for 3 years, to 2022
3-year growth: 1.018
Seasonal Adjustment:
1.077 Weekday
1.108 Weekend

Existing volumes x the appropriate seasonal adjustment factor for weekdays or weekends

Adjusted counts x 1.018 for 3 years of ambient growth & trips to/from other planned projects

	285 single-family homes		
	AM	PM	SUN
Enter	53	178	143
Exit	158	104	122
Total	211	282	265

					2019 Existing Volumes			Seasonally Adjusted			Other Project Trips			2022 Baseline			Weekday Dist.		Weekend Dist.		Generated Traffic			2022 As of Right (No Zone Change)		
AM	PM	SUN	Dir.	Mvmt.	AM	PM	SUN	AM	PM	SUN	AM	PM	SUN	AM	PM	SUN	% In	%Exit	% In	%Exit	AM	PM	SUN	AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway																										
Peak Hours Begin at:			NB	Left	33	31	14	36	33	16	0	0	0	36	34	16		60%		55%	95	62	67	131	96	83
745	1630	1115		Right	12	11	12	13	12	13	0	0	0	13	12	14		40%		45%	63	42	55	76	54	68
			EB	Thr	702	595	640	756	641	709	22	1	9	791	653	731					---	---	---	791	653	731
				Right	10	41	16	11	44	18	0	0	0	11	45	18	60%		55%		32	107	79	43	152	97
Hourly Peak Hour			WB	Left	15	16	17	16	17	19	0	0	0	16	18	19	40%		45%		21	71	64	38	89	84
Factors (PHFs) are:				Thr	621	667	478	669	718	530	13	8	10	694	739	549					---	---	---	694	739	549
0.97	*0.94*	*0.91*	*Intersection*																							
INTERSECTION: Pine Street and Broadway																										
Peak Hours Begin at:			SB	Left	1	8	3	1	9	3	0	0	0	1	9	3					---	---	---	1	9	3
745	1630	1115		Right	15	15	8	16	16	9	0	0	0	16	16	9					---	---	---	16	16	9
			EB	Left	3	27	13	3	29	14	0	0	0	3	30	15					---	---	---	3	30	15
				Thr	711	628	653	766	676	724	22	1	9	801	689	746	60%		55%		32	107	79	833	796	824
Hourly Peak Hour			WB	Thr	648	693	489	698	746	542	13	8	10	723	768	562		60%		55%	95	62	67	818	830	629
Factors (PHFs) are:				Right	6	5	3	6	5	3	0	0	0	7	5	3					---	---	---	7	5	3
0.97	*0.94*	*0.91*	*Intersection*																							
INTERSECTION: Woodmere Boulevard and Broadway																										
			NB	Left	58	95	37	62	102	41	0	0	0	64	104	42	4%		4%		2	7	6	66	111	47
Peak Hours Begin at:				Thr	73	74	46	79	80	51	0	0	0	80	81	52					---	---	---	80	81	52
745	1645	1145		Right	6	7	10	6	8	11	0	0	0	7	8	11					---	---	---	7	8	11
			SB	Left	59	84	66	64	90	73	0	0	0	65	92	74					---	---	---	65	92	74
				Thr	81	148	62	87	159	69	0	0	0	89	162	70					---	---	---	89	162	70
				Right	79	34	67	85	37	74	0	0	0	87	37	76	4%		4%		2	7	6	89	44	81
			EB	Left	60	65	70	65	70	78	0	0	0	66	71	79		4%		4%	6	4	5	72	75	84
				Thr	557	320	504	600	345	558	22	1	9	632	352	578		32%		37%	51	33	45	683	385	623
				Right	51	111	35	55	120	39	0	0	0	56	122	39		4%		4%	6	4	5	62	126	44
			WB	Left	15	8	12	16	9	13	0	0	0	16	9	14					---	---	---	16	9	14
Hourly Peak Hour				Thr	493	535	400	531	576	443	13	8	10	553	595	461	32%		37%		17	57	53	570	652	514
Factors (PHFs) are:				Right	42	50	45	45	54	50	0	0	0	46	55	51					---	---	---	46	55	51
0.96	*0.98*	*0.92*	*Intersection*																							
INTERSECTION: Prospect Avenue and Broadway																										
Peak Hours Begin at:			SB	Left	21	44	24	23	47	27	0	0	0	23	48	27	5%		5%		3	9	7	26	57	34
745	1630	1145		Right	48	53	64	52	57	71	0	0	0	53	58	72					---	---	---	53	58	72
			EB	Left	81	76	71	87	82	79	0	0	0	89	83	80					---	---	---	89	83	80
				Thr	719	687	636	774	740	705	22	1	9	810	754	727	55%		50%		29	98	72	839	852	798
Hourly Peak Hour			WB	Thr	659	687	508	710	740	563	13	8	10	735	761	583		55%		50%	87	57	61	822	819	644
Factors (PHFs) are:				Right	19	36	22	20	39	24	0	0	0	21	39	25		5%		5%	8	5	6	29	45	31
0.97	*0.96*	*0.89*	*Intersection*																							
INTERSECTION: Albro Lane and Atlantic Avenue																										
Peak Hours Begin at:			NB	Left	4	6	7	4	6	8	0	0	0	4	7	8					---	---	---	4	7	8
745	1615	1215		Right	0	3	2	0	3	2	0	0	0	0	3	2					---	---	---	0	3	2
			EB	Thr	2	2	1	2	2	1	0	0	0	2	2	1	5%		5%		3	9	7	5	11	8
				Right	4	1	3	4	1	3	0	0	0	4	1	3					---	---	---	4	1	3
Hourly Peak Hour			WB	Left	7	10	8	8	11	9	0	0	0	8	11	9					---	---	---	8	11	9
Factors (PHFs) are:				Thr	39	73	33	42	79	37	0	0	0	43	80	37		5%		5%	8	5	6	51	85	43
0.74	*0.79*	*0.84*	*Intersection*																							

Table 3-4 (continued)
As of Right with 285 Single-Family Homes, New Driveway Opposite Prospect Avenue

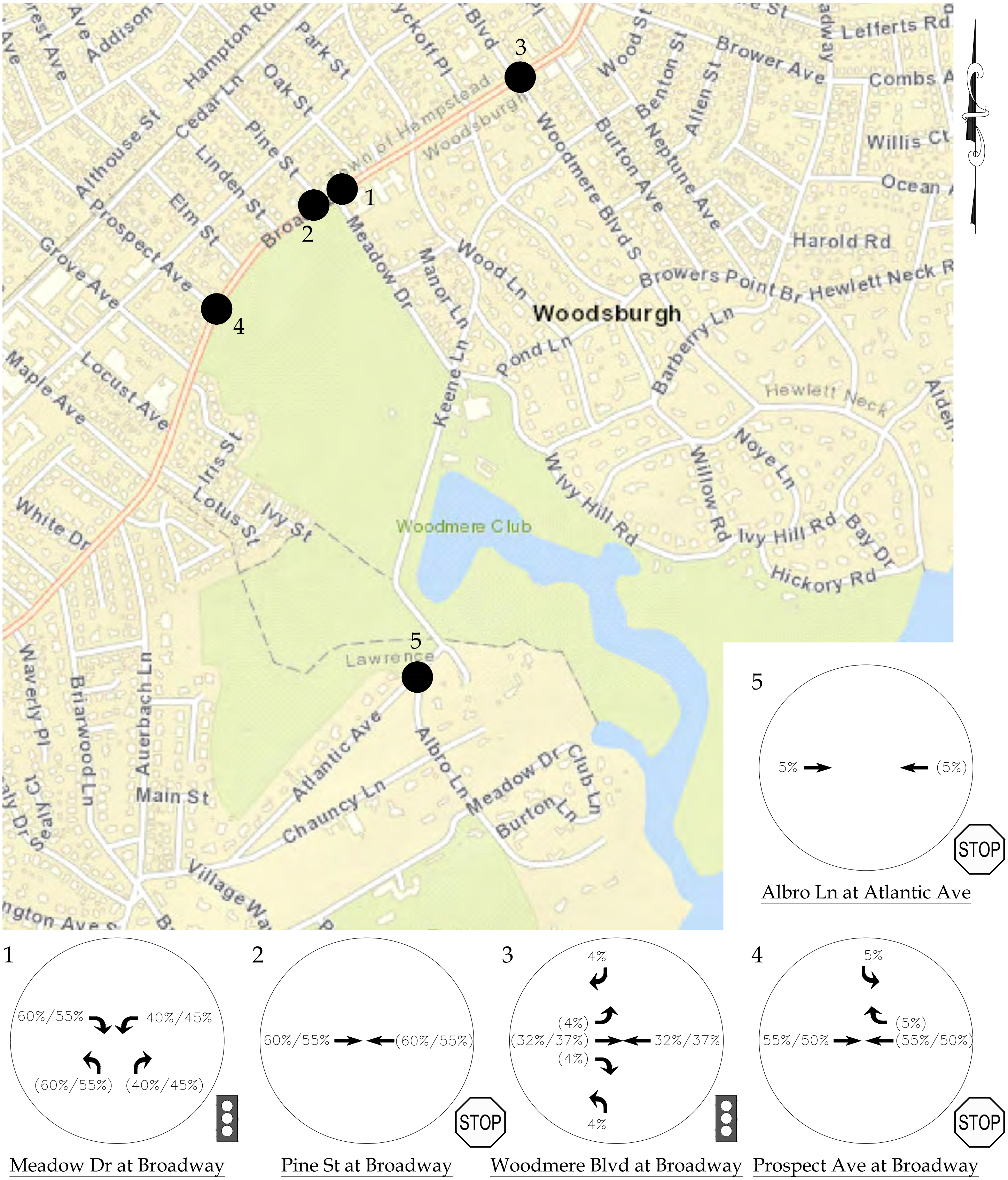
0.6% growth for 3 years, to 2022
3-year growth: 1.018
Seasonal Adjustment:
1.077 Weekday
1.108 Weekend

Existing volumes x the appropriate seasonal adjustment factor for weekdays or weekends

Adjusted counts x 1.018 for 3 years of ambient growth & trips to/from other planned projects

285 single-family homes	AM	PM	SUN
Enter	53	178	143
Exit	158	104	122
Total	211	282	265

					2019 Existing Volumes			Seasonally Adjusted			Other Project Trips			2022 Baseline			Weekday Dist.		Weekend Dist.		Generated Traffic			2022 As of Right (No Zone Change)		
AM	PM	SUN	Dir.	Mvmt.	AM	PM	SUN	AM	PM	SUN	AM	PM	SUN	AM	PM	SUN	% In	%Exit	% In	%Exit	AM	PM	SUN	AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway																										
Peak Hours Begin at:			NB	Left	33	31	14	36	33	16	0	0	0	36	34	16		20%		15%	32	21	18	68	55	34
745	1630	1115		Right	12	11	12	13	12	13	0	0	0	13	12	14		40%		45%	63	42	55	76	54	68
			EB	Thr	702	595	640	756	641	709	22	1	9	791	653	731					---	---	---	791	653	731
				Right	10	41	16	11	44	18	0	0	0	11	45	18	20%		15%		11	36	21	22	81	39
Hourly Peak Hour			WB	Left	15	16	17	16	17	19	0	0	0	16	18	19	40%		45%		21	71	64	38	89	84
Factors (PHFs) are:				Thr	621	667	478	669	718	530	13	8	10	694	739	549					---	---	---	694	739	549
0.97	0.94	0.91	Intersection																							
INTERSECTION: Pine Street and Broadway																										
Peak Hours Begin at:			SB	Left	1	8	3	1	9	3	0	0	0	1	9	3					---	---	---	1	9	3
745	1630	1115		Right	15	15	8	16	16	9	0	0	0	16	16	9					---	---	---	16	16	9
			EB	Left	3	27	13	3	29	14	0	0	0	3	30	15					---	---	---	3	30	15
				Thr	711	628	653	766	676	724	22	1	9	801	689	746	20%		15%		11	36	21	812	725	767
Hourly Peak Hour			WB	Thr	648	693	489	698	746	542	13	8	10	723	768	562		20%		15%	32	21	18	755	789	580
Factors (PHFs) are:				Right	6	5	3	6	5	3	0	0	0	7	5	3					---	---	---	7	5	3
0.97	0.94	0.91	Intersection																							
INTERSECTION: Woodmere Boulevard and Broadway																										
			NB	Left	58	95	37	62	102	41	0	0	0	64	104	42	4%		4%		2	7	6	66	111	47
Peak Hours Begin at:				Thr	73	74	46	79	80	51	0	0	0	80	81	52					---	---	---	80	81	52
745	1645	1145		Right	6	7	10	6	8	11	0	0	0	7	8	11					---	---	---	7	8	11
			SB	Left	59	84	66	64	90	73	0	0	0	65	92	74					---	---	---	65	92	74
				Thr	81	148	62	87	159	69	0	0	0	89	162	70					---	---	---	89	162	70
				Right	79	34	67	85	37	74	0	0	0	87	37	76	4%		4%		2	7	6	89	44	81
			EB	Left	60	65	70	65	70	78	0	0	0	66	71	79		4%		4%	6	4	5	72	75	84
				Thr	557	320	504	600	345	558	22	1	9	632	352	578		32%		37%	51	33	45	683	385	623
				Right	51	111	35	55	120	39	0	0	0	56	122	39		4%		4%	6	4	5	62	126	44
			WB	Left	15	8	12	16	9	13	0	0	0	16	9	14					---	---	---	16	9	14
Hourly Peak Hour				Thr	493	535	400	531	576	443	13	8	10	553	595	461	32%		37%		17	57	53	570	652	514
Factors (PHFs) are:				Right	42	50	45	45	54	50	0	0	0	46	55	51					---	---	---	46	55	51
0.96	0.98	0.92	Intersection																							
INTERSECTION: Prospect Avenue and Broadway																										
Movements do not			*NB*	*Left*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		*35%*		*35%*	*55*	*36*	*43*	*55*	*36*	*43*
exist without Willow				*Thr*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		*5%*		*5%*	*8*	*5*	*6*	*8*	*5*	*6*
View development				*Right*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*					---	---	---	---	---	---
Peak Hours Begin at:			SB	Left	21	44	24	23	47	27	0	0	0	23	48	27					---	---	---	23	48	27
				Thr	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*5%*		*5%*		*3*	*9*	*7*	*3*	*9*	*7*
745	1630	1145		Right	48	53	64	52	57	71	0	0	0	53	58	72					---	---	---	53	58	72
			EB	Left	81	76	71	87	82	79	0	0	0	89	83	80					---	---	---	89	83	80
				Thr	719	687	636	774	740	705	22	1	9	810	754	727	20%		15%		11	36	21	821	790	748
				Right	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*35%*		*35%*		*19*	*62*	*50*	*19*	*62*	*50*
			WB	*Left*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*					---	---	---	---	---	---
Hourly Peak Hour			WB	Thr	659	687	508	710	740	563	13	8	10	735	761	583		20%		15%	32	21	18	767	782	601
Factors (PHFs) are:				Right	19	36	22	20	39	24	0	0	0	21	39	25		0%		0%	---	---	---	21	39	25
0.97	0.96	0.89	Intersection																							
INTERSECTION: Albro Lane and Atlantic Avenue																										
Peak Hours Begin at:			NB	Left	4	6	7	4	6	8	0	0	0	4	7	8					---	---	---	4	7	8
745	1615	1215		Right	0	3	2	0	3	2	0	0	0	0	3	2					---	---	---	0	3	2
			EB	Thr	2	2	1	2	2	1	0	0	0	2	2	1	5%		5%		3	9	7	5	11	8
				Right	4	1	3	4	1	3	0	0	0	4	1	3					---	---	---	4	1	3
Hourly Peak Hour			WB	Left	7	10	8	8	11	9	0	0	0	8	11	9					---	---	---	8	11	9
Factors (PHFs) are:				Thr	39	73	33	42	79	37	0	0	0	43	80	37		5%		5%	8	5	6	51	85	43
0.74	0.79	0.84	Intersection																							



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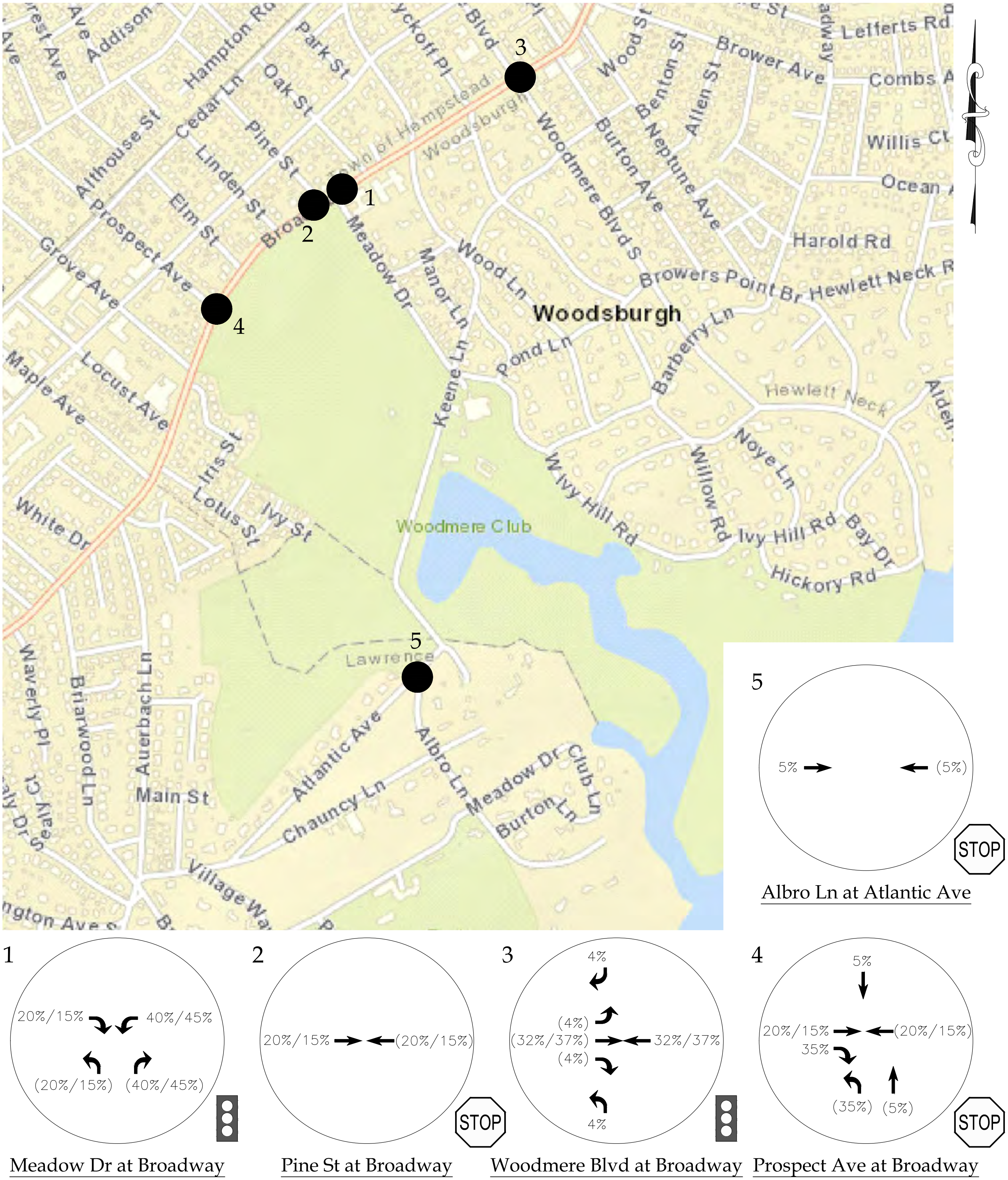
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

Distribution Of As Of Right Trips

285 residences

Figure No. 3-1

KEY: AM/PM/SUN (No New Driveway)



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Corporate Seal Initiated 1996 State of New York
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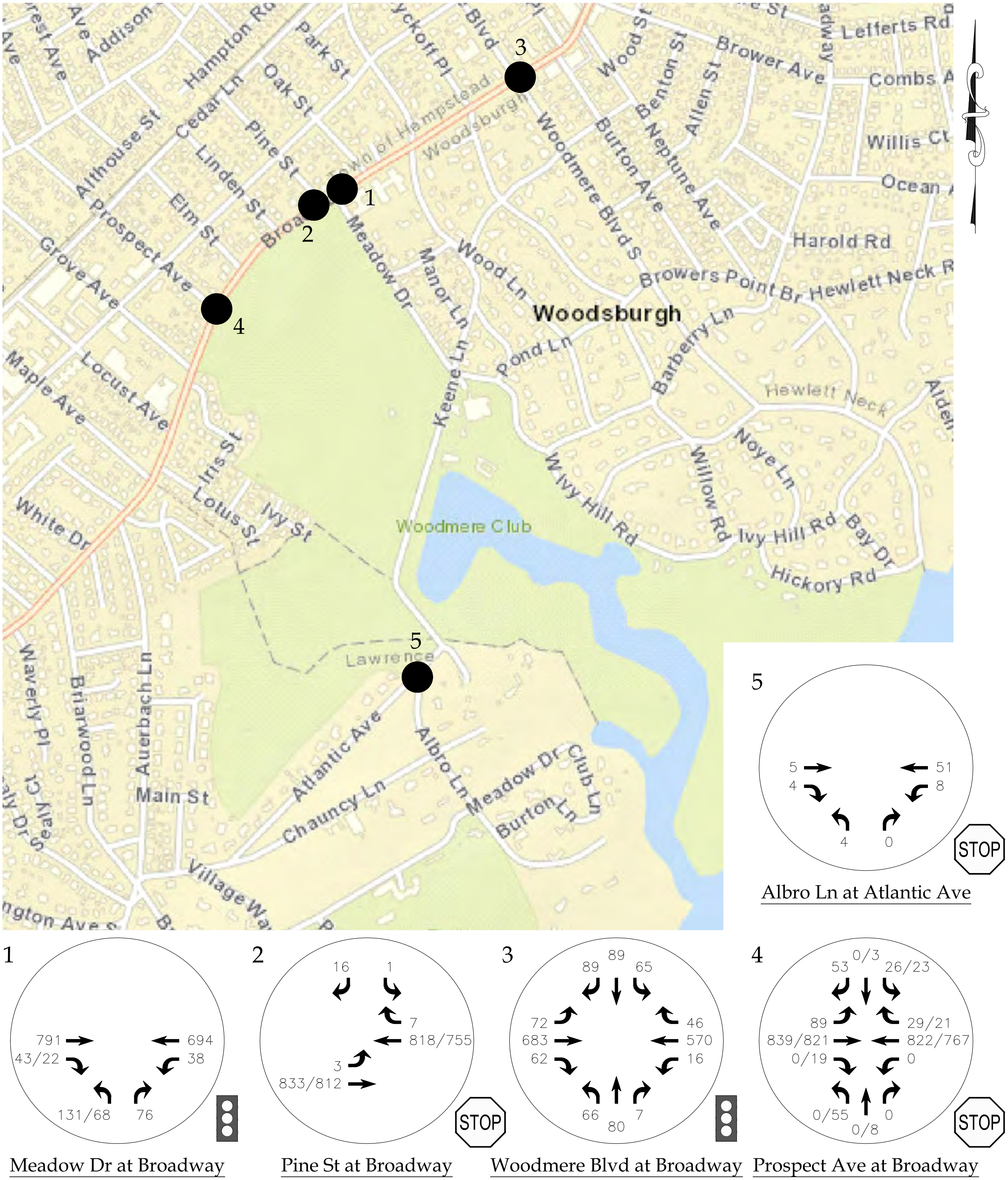
Distribution Of As Of Right Trips (2 Driveways)
285 residences
Figure No. 3-2

KEY: AM/PM/SUN (New Driveway)



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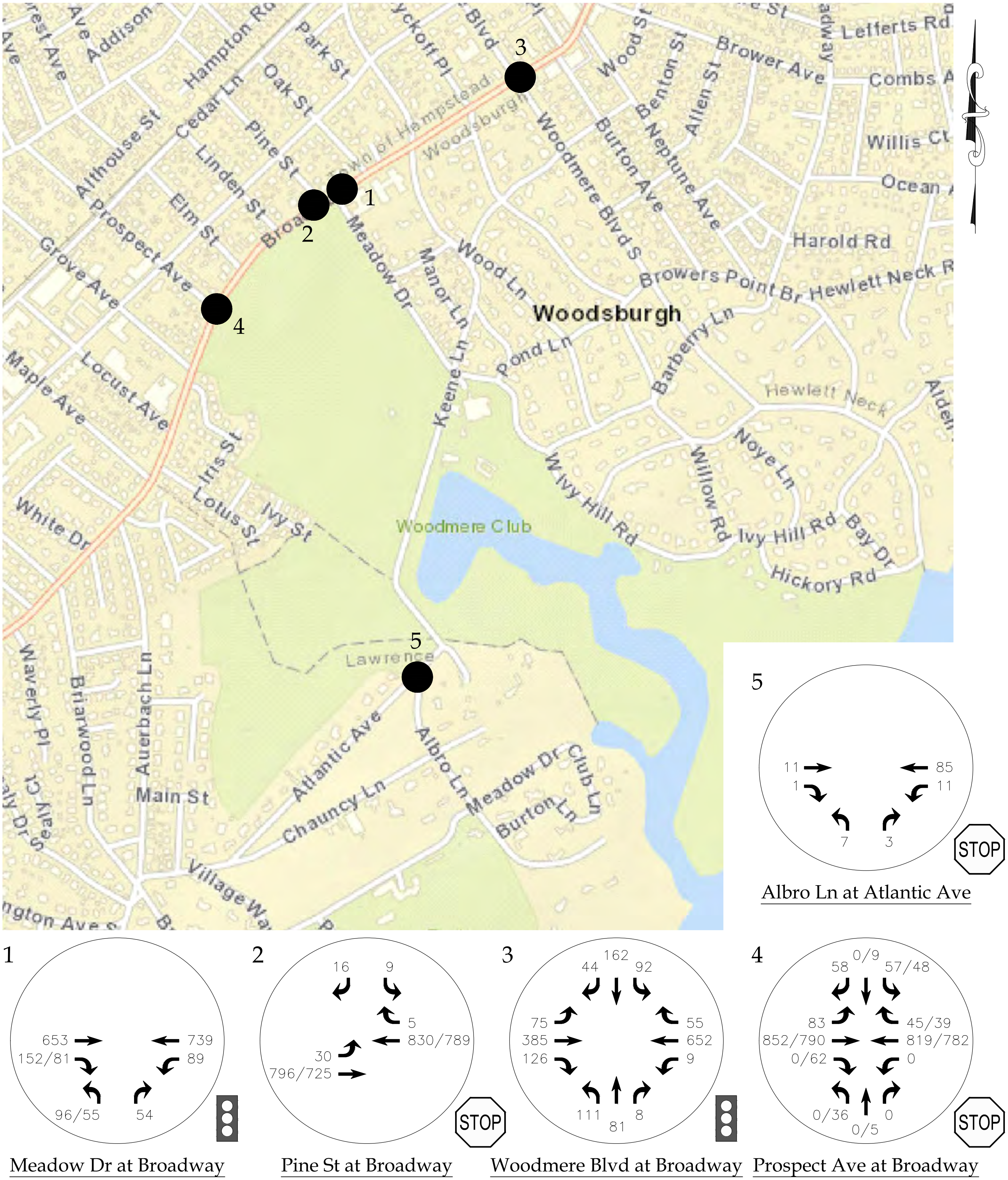
AM Peak Hour As-of-Right Volumes
285 residences
Figure No. 3-3
KEY: With No New Driveway / With 2nd Driveway
(Where numbers are different)



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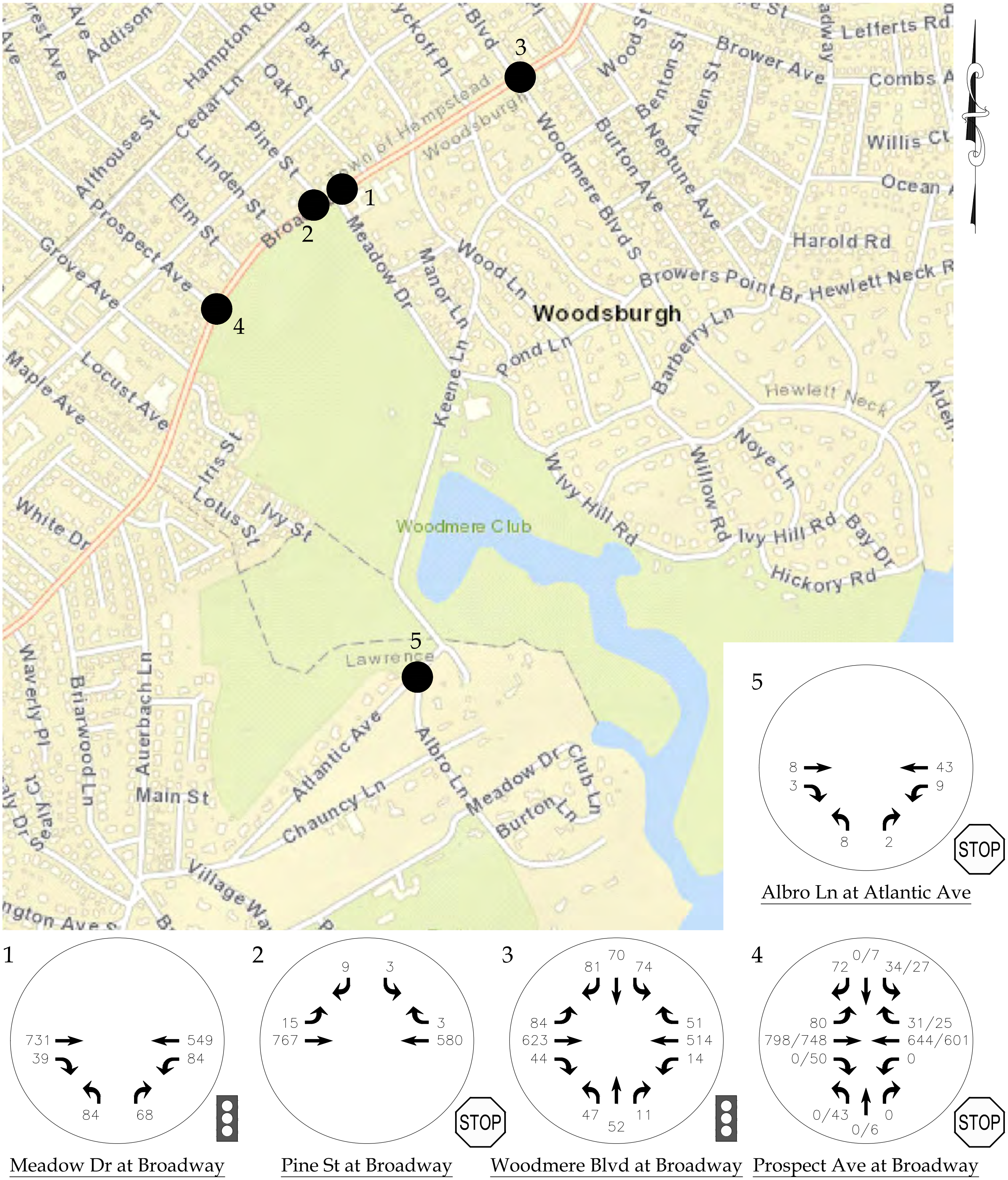
PM Peak Hour As-of-Right Volumes

285 residences

Figure No. 3-4

KEY: With No New Driveway / With 2nd Driveway (Where numbers are different)



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Weekend Midday Peak As-of-Right Volumes
285 residences
Figure No. 3-5
KEY: With No New Driveway / With 2nd Driveway
(Where numbers are different)

4. Coastal Conservation District Scenarios

For purposes of this traffic analysis, three Scenarios are contemplated under the Coastal Conservation District:

- **Scenario A:** 59 single-family homes
- **Scenario B:** 59 single-family homes, and the Clubhouse with added hospitality use
- **Scenario C:** 59 single-family homes, the Clubhouse, and a 9-hole golf course

The additional uses in Scenarios B and C (the Clubhouse and golf) would not be active every day. Their activity would fluctuate, and in fact (as discussed below), the Clubhouse is inactive most days of the week, and golf is inactive roughly six months out of the year. On a day-to-day basis, only the single-family homes are active, and they would have roughly 80% less traffic than the ±285 single-family homes contemplated in the As-of-Right scenario with Residence B zoning.

4.1 Anticipated Land Uses and Traffic

4.1.1 Residential Use (All Scenarios)

Under all three Scenarios, the project site would be redeveloped with 59 single-family homes: 41 on the portion of the project site in the Town of Hempstead and 18 on the portion of the project site in the Villages of Woodsburgh and Lawrence. Trip generation information was referenced from the local Northeast and mid-Atlantic regional data in the 10th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. This report considers peak site traffic during typical peak "rush hour" (AM and PM peak hour) travel periods, and Saturday ITE data for Sunday, to be conservative[5].

Table 4-1: Trip Generation – Scenario A

tph = trips per hour

Weekday AM Peak Hour	Enter: 11 tph Exit: 35 tph Total: 46 tph
Weekday PM Peak Hour	Enter: 38 tph Exit: 23 tph Total: 61 tph
Weekend Peak Hour	Enter: 36 tph Exit: 32 tph Total: 68 tph

[5] Saturday ITE data is utilized because the ITE data has higher traffic generation on Saturday than Sunday. Adding Saturday ITE data to the higher Sunday baseline results in the most conservative projection.

4.1.2 Clubhouse Operations (Scenarios B and C)

Clubhouse: At the existing Clubhouse, the predominant use would continue to be a catering facility that can accommodate small to larger events (e.g. weddings) with 50 to 300 guests. Additionally, the building would be expanded or retrofitted to accommodate ±15 new overnight stay rooms/suites. Fifteen new guest suites would function like a hotel for the purposes of a traffic study. Trip generation information was referenced from the ITE *Trip Generation Manual* (10th Edition).

Trip generation for the catering use was based on the near-peak activity that would be expected to occur at least twice per month during each peak period, during the spring/summer, including periodic breakfasts and weekend midday peak hour events. Larger events tend to be scheduled on Friday/Saturday/Sunday nights and Sunday late afternoons, outside peak hours on the surrounding streets; see Appendix G. On many days, the Clubhouse has and will have little to no activity.

The combined projected trip generation is calculated as:

Table 4-2: Clubhouse Peak Hour Trips

	Catering-Related	Lodging-Related	Total
Weekday AM Peak Hour	Enter: 20 tph Exit: 0 tph Total: 20 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph
Weekday AM Peak Hour (no events)	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph
Weekday PM Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph
Weekend Peak Hour with an event	Enter: 25 tph Exit: 3 tph Total: 28 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph
Weekend Peak Hour (no events)	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph

4.1.3 Programmed Open Space: 9-hole golf course (Scenario C)

Natural, passive open space does not generate any traffic. A 9-hole golf course would generate similar but smaller numbers of trips than an 18-hole course. Of note, the golf course would only see its peak activity roughly 4 months a year, **with limited activity 2 months a year, and no activity from October through March (6 months a year)**. This traffic study considers June conditions, when the golf course would be most active. Golf traffic projections are based on a compilation of local golf course data within the Town of Hempstead and ITE data, considering that players would make advance reservations for tee times. See Appendix H for further background.

Table 4-3: Golf Course Peak Hour Trips

Weekday AM Peak Hour	Weekday PM Peak Hour	Weekend Midday Peak Hour
4 month Peak Season (mid-May to mid-September)		
Enter: 18 tph Exit: 8 tph Total: 26 tph	Enter: 16 tph Exit: 19 tph Total: 35 tph	Enter: 23 tph Exit: 24 tph Total: 47 tph
2 month Limited Season (mid-April to mid-May, mid-September to mid-October)		
Enter: 9 tph Exit: 4 tph Total: 13 tph	Enter: 8 tph Exit: 10 tph Total: 18 tph	Enter: 12 tph Exit: 12 tph Total: 24 tph
6 month Off Season (mid-October to mid-April)		
Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph

4.1.4 Total Traffic with Coastal Conservation District Scenarios A, B, C

The following comparisons relate Scenarios A, B, and C (59 single-family homes with Clubhouse/golf use) to the As of Right Residence B zoning (±285 single-family homes):

Scenario A:

- 165 (78%) fewer trips during the weekday AM peak hour than As-of-Right (Table 3-3)
- 221 (78%) fewer trips during the weekday PM peak hour than As-of-Right
- 197 (74%) fewer trips during the Weekend peak hour than As-of-Right

Scenario B, and Scenario C for 6 months a year (no golf):

- 140 (66%) fewer trips during the weekday AM peak hour than As-of-Right (Table 3-3)
  160 (76%) fewer trips during the weekday AM peak hour with no Clubhouse event
- 216 (77%) fewer trips during the weekday PM peak hour than As-of-Right
- 166 (63%) fewer trips during the Weekend peak hour than As-of-Right
  194 (73%) fewer trips during the Weekend peak hour with no Clubhouse event

Scenario C, 2 month limited golf season:

- 127 (60%) fewer trips during the weekday AM peak hour than As-of-Right (Table 3-3)
  147 (70%) fewer trips during the weekday AM peak hour with no Clubhouse event
- 198 (70%) fewer trips during the weekday PM peak hour than As-of-Right
- 142 (54%) fewer trips during the Weekend peak hour than As-of-Right
  170 (64%) fewer trips during the Weekend peak hour with no Clubhouse event

Scenario C, 4 month peak golf season:

- 114 (54%) fewer trips during the weekday AM peak hour than As-of-Right (Table 3-3)
  134 (64%) fewer trips during the weekday AM peak hour with no Clubhouse event
- 181 (64%) fewer trips during the weekday PM peak hour than As-of-Right
- 119 (45%) fewer trips during the Weekend peak hour than As-of-Right
  147 (55%) fewer trips during the Weekend peak hour with no Clubhouse event

Each scenario is summarized below.

Scenario A: 59 single-family homes would generate traffic as shown in Table 4-1 above.

Scenario B: 59 single-family homes, the Clubhouse, and unprogrammed open space/natural areas. The total traffic generation for Scenario B is shown below:

Table 4-4: Trip Generation – Scenario B

	Single-Family Total (Table 4-1)	Clubhouse Total (Table 4-2)	Total	As-of-Right Trips (Table 3-4)
Weekday AM Peak Hour	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph	Enter: 34 tph Exit: 37 tph Total: 71 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday AM Peak Hour with no events	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 14 tph Exit: 37 tph Total: 51 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday PM Peak Hour	Enter: 38 tph Exit: 23 tph Total: 61 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 41 tph Exit: 25 tph Total: 66 tph	Enter: 178 tph Exit: 104 tph Total: 282 tph
Weekend Peak Hour with an event	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph	Enter: 63 tph Exit: 36 tph Total: 99 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
Weekend Peak Hour with no events	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 38 tph Exit: 33 tph Total: 71 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph

Scenario C:

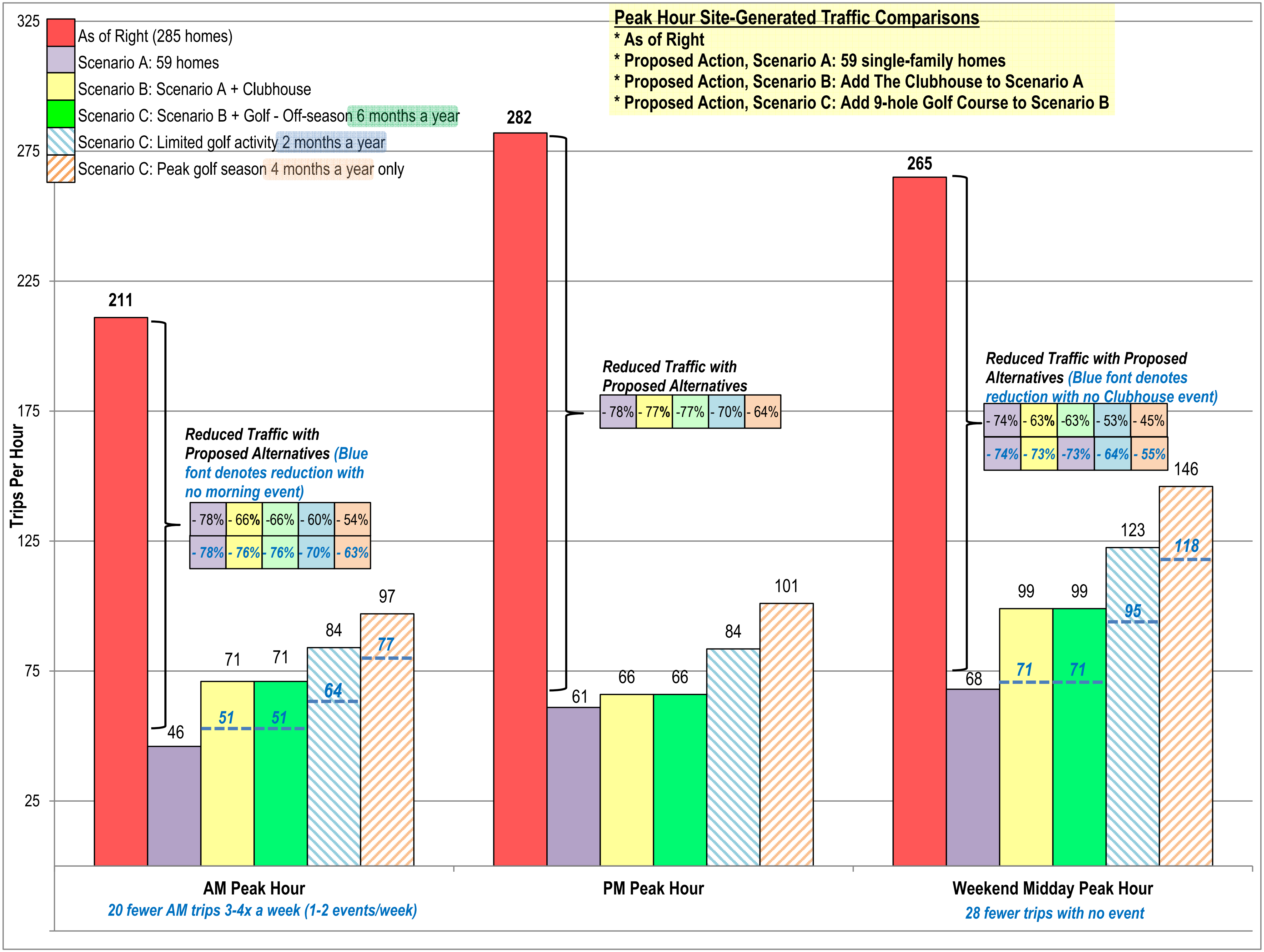
Scenario C has 59 single-family homes, the Clubhouse, and programmed open space (9-hole golf course). This study analyzes the peak golf season, which lasts about 4 months a year. Most of the time, there will be limited or no traffic associated with the golf course. The traffic generation for Scenario C, as it varies throughout the year, is shown below for the off season, limited golf season, and peak golf season.

Table 4-5: Trip Generation – Scenario C

6 month off season (No Golf)	Single-Family Total (Table 4-1)	Clubhouse Total (Table 4-2)	Golf Course Total (Appendix H)	Total (Table 4-4)	As-of-Right Trips (Table 3-4)
Weekday AM Peak Hour	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 34 tph Exit: 37 tph Total: 71 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday AM Peak Hour with no events	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 14 tph Exit: 37 tph Total: 51 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday PM Peak Hour	Enter: 38 tph Exit: 23 tph Total: 61 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 41 tph Exit: 25 tph Total: 66 tph	Enter: 178 tph Exit: 104 tph Total: 282 tph
Weekend Peak Hour with a special event	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 63 tph Exit: 36 tph Total: 99 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
Weekend Peak Hour with no events	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 38 tph Exit: 33 tph Total: 71 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
2 months Limited Golf	Single-Family Total (Table 4-1)	Clubhouse Total (Table 4-2)	Golf Course Total (Appendix H)	Total	As-of-Right Trips (Table 3-4)
Weekday AM Peak Hour	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph	Enter: 9 tph Exit: 4 tph Total: 13 tph	Enter: 43 tph Exit: 41 tph Total: 84 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday AM Peak Hour with no events	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 9 tph Exit: 4 tph Total: 13 tph	Enter: 23 tph Exit: 41 tph Total: 64 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday PM Peak Hour	Enter: 38 tph Exit: 23 tph Total: 61 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 8 tph Exit: 10 tph Total: 18 tph	Enter: 49 tph Exit: 35 tph Total: 84 tph	Enter: 178 tph Exit: 104 tph Total: 282 tph
Weekend Peak Hour with a special event	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph	Enter: 12 tph Exit: 12 tph Total: 24 tph	Enter: 75 tph Exit: 48 tph Total: 123 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
Weekend Peak Hour with no events	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 12 tph Exit: 12 tph Total: 24 tph	Enter: 50 tph Exit: 45 tph Total: 95 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
4 month Peak Golf Season	Single-Family Total (Table 4-1)	Clubhouse Total (Table 4-2)	Golf Course Total (Appendix H)	Total	As-of-Right Trips (Table 3-4)
Weekday AM Peak Hour	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph	Enter: 18 tph Exit: 8 tph Total: 26 tph	Enter: 52 tph Exit: 45 tph Total: 97 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph
Weekday AM Peak Hour with no events	Enter: 11 tph Exit: 35 tph Total: 46 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 18 tph Exit: 8 tph Total: 26 tph	Enter: 32 tph Exit: 45 tph Total: 77 tph	Enter: 53 tph Exit: 158 tph Total: 211 tph

Weekday PM Peak Hour	Enter: 38 tph Exit: 23 tph Total: 61 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 16 tph Exit: 19 tph Total: 35 tph	Enter: 57 tph Exit: 44 tph Total: 101 tph	Enter: 178 tph Exit: 104 tph Total: 282 tph
Weekend Peak Hour with a special event	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph	Enter: 23 tph Exit: 24 tph Total: 47 tph	Enter: 86 tph Exit: 60 tph Total: 146 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph
Weekend Peak Hour with no events	Enter: 36 tph Exit: 32 tph Total: 68 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 23 tph Exit: 24 tph Total: 47 tph	Enter: 61 tph Exit: 57 tph Total: 118 tph	Enter: 143 tph Exit: 122 tph Total: 265 tph

Figure 4-1 on the next page is a bar chart to compare the existing zoning, proposed zoning with open space on the perimeter, proposed zoning with a golf course on the perimeter under peak (outing or no outing) and off-season conditions with respect to golf.

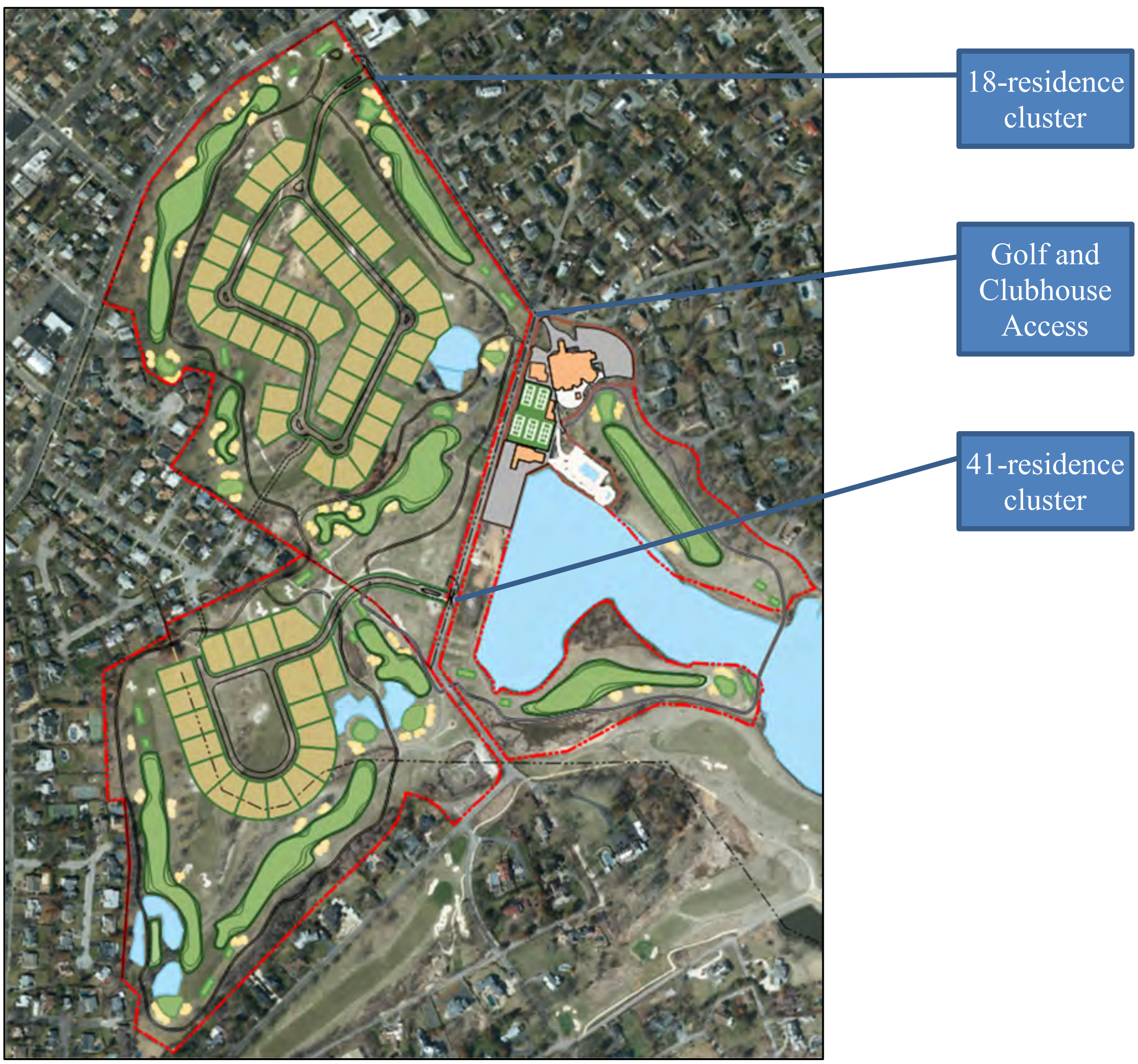


Peak Hour Site-Generated Traffic Comparisons
* As of Right
* Proposed Action, Scenario A: 59 single-family homes
* Proposed Action, Scenario B: Add The Clubhouse to Scenario A
* Proposed Action, Scenario C: Add 9-hole Golf Course to Scenario B
As of Right (285 homes)
Scenario A: 59 homes
Scenario B: Scenario A + Clubhouse
Scenario C: Scenario B + Golf - Off-season 6 months a year
Scenario C: Limited golf activity 2 months a year
Scenario C: Peak golf season 4 months a year only
Trips Per Hour
325
275
225
175
125
75
25
211
46
71
71
84
97
51
51
64
77
Reduced Traffic with Proposed Alternatives (Blue font denotes reduction with no morning event)
- 78% - 66% -66% - 60% - 54%
- 78% - 76% - 76% - 70% - 63%
282
61
66
66
84
101
Reduced Traffic with Proposed Alternatives
- 78% - 77% -77% - 70% - 64%
265
68
99
99
123
146
71
71
95
118
Reduced Traffic with Proposed Alternatives (Blue font denotes reduction with no Clubhouse event)
- 74% - 63% -63% - 53% - 45%
- 74% - 73% -73% - 64% - 55%
AM Peak Hour
20 fewer AM trips 3-4x a week (1-2 events/week)
PM Peak Hour
Weekend Midday Peak Hour
28 fewer trips with no event

4.2 Site Access

Cameron Engineering has developed a Master Plan Sketch Study depicting a conceptual lot layout, including site access. As shown on the Master Plan Sketch Study for Scenario C (59 single-family homes with Clubhouse/golf use, excerpted below), the 41-lot development will access Meadow Drive ±230 feet south of Broadway, as detailed in the proposed code. Access is defined in the proposed zoning code as a mitigation measure. Under Scenarios B or C, the Clubhouse and golf course would continue to have unsignalized access where Meadow Drive intersects Keene Lane/Railroad Avenue/Ivy Hill Road. The 18-residence cluster would access Keene Lane. Any scenario would provide one or more unsignalized "T" type driveways with one lane to receive traffic and one lane for outgoing traffic.

Figure 4-2: Scenario C Master Plan Sketch Study Excerpt



4.3 Parking

The Town and both Villages would require each dwelling unit to have two parking spaces, which can be provided in garages or driveways. The front yard setbacks and garages shown in the Master Plan Sketch Study are sufficient to provide the necessary parking. For the Clubhouse and golf, the existing parking is known to accommodate existing demand, so the parking can accommodate the reduced demand associated with a smaller golf course capacity. The golf course capacity reduction more than outweighs the potential for 15 sets of guests in the new lodging suites and associated nominal numbers of overnight employees.

4.4 Distribution and Assignment of Site-Generated Traffic

Cameron Engineering determined the peak traffic volumes that would be generated in each direction at the study intersections. This was done by performing a directional distribution analysis to determine the percentages of site trips during peak hour periods. For example: "*15% of exiting trips will make the northbound left turn at the intersection of...*"

Any traffic associated with this site will almost entirely utilize Broadway rather than side streets to the south, where there is low-density residential use. Traffic would be distributed roughly 60% westbound-40% eastbound during the week and 55% westbound-45% eastbound on weekends based on the traffic counts done for this study, with 5% utilizing Prospect Avenue to cross the LIRR tracks west of the site. Periodically, some of the southerly homes and/or Clubhouse-golf course traffic might head south/southwest. This study considers an additional 5% of traffic utilizing the Albro Drive intersection to gauge if this would impact local traffic flow. On a day-to-day basis, few to zero trips are expected to head south/southwest of the property; this 5% assignment is a conservative over-estimate.

Table 4-6: Basic Site Trip Distribution

ORIGIN/DESTINATION	Weekdays	Weekends
To/from the north and east (Broadway)	40%	45%
To/from the south and west (Broadway)	60%	55%
To/from the south (Keene Lane/Station Road)	0% but analyze with 5% to be conservative	

Once the distributions were established, they were used to calculate specific trip numbers. For example: "*15% of 100 PM trips out of the site trips equals 15 trips added to northbound Street 'X' during the PM peak hour…*" Table 4-7 illustrates the existing, No Action, and Proposed Action volumes (Scenarios A, B, and C with 59 residences, Clubhouse, golf use), the trip distribution percentages, and generated traffic. Figure 4-3 through Figure 4-6 depict the site-generated traffic distribution and volumes; the three sets of potential volumes for full buildout under the proposed zoning (Scenarios A, B, and C) are shown in Figure 4-7 through Figure 4-15.

Table 4-7 **Trip Distribution and Assignment: Scenario A**

0.6% growth for 3 years, to 2022
3-year growth: 1.018
Seasonal Adjustment:
1.077 Weekday
1.108 Weekend

Adjusted counts x 1.018 for 3 years of ambient growth & trips to/from other planned projects

59 single-family homes	AM	PM	SUN
Enter	11	38	36
Exit	35	23	32
Total	46	61	68

					2022 Baseline			WEEKDAY		WEEKEND		Generated Traffic			Total Site Traffic			2022 - Alternative A		
AM	PM	SUN	Dir.	Mvmt.	AM	PM	SUN	% In	%Exit	% In	%Exit	AM	PM	SUN	AM	PM	SUN	AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway																				
Peak Hours Begin at:			NB	Left	36	34	16		60%		55%	21	14	18	21	14	18	57	48	33
745	1630	1115		Right	13	12	14		40%		45%	14	9	14	14	9	14	27	21	28
			EB	Thr	791	653	731					---	---	---	0	0	0	791	653	731
				Right	11	45	18	60%		55%		7	23	20	7	23	20	18	68	38
Hourly Peak Hour			WB	Left	16	18	19	40%		45%		4	15	16	4	15	16	21	33	35
Factors (PHFs) are:				Thr	694	739	549					---	---	---	0	0	0	694	739	549
0.97	*0.94*	*0.91*	*Intersection*																	
INTERSECTION: Pine Street and Broadway																				
Peak Hours Begin at:			SB	Left	1	9	3					---	---	---	0	0	0	1	9	3
745	1630	1115		Right	16	16	9					---	---	---	0	0	0	16	16	9
			EB	Left	3	30	15					---	---	---	0	0	0	3	30	15
				Thr	801	689	746	60%		55%		7	23	20	7	23	20	808	712	766
Hourly Peak Hour			WB	Thr	723	768	562		60%		55%	21	14	18	21	14	18	744	782	579
Factors (PHFs) are:				Right	7	5	3					---	---	---	0	0	0	7	5	3
0.97	*0.94*	*0.91*	*Intersection*																	
INTERSECTION: Woodmere Boulevard and Broadway																				
			NB	Left	64	104	42	4%		4%		0	2	1	0	2	1	64	106	43
Peak Hours Begin at:				Thr	80	81	52					---	---	---	0	0	0	80	81	52
745	1645	1145		Right	7	8	11					---	---	---	0	0	0	7	8	11
			SB	Left	65	92	74					---	---	---	0	0	0	65	92	74
				Thr	89	162	70					---	---	---	0	0	0	89	162	70
				Right	87	37	76	4%		4%		0	2	1	0	2	1	87	39	77
			EB	Left	66	71	79		4%		4%	1	1	1	1	1	1	67	72	80
				Thr	632	352	578		32%		37%	11	7	12	11	7	12	644	359	589
				Right	56	122	39		4%		4%	1	1	1	1	1	1	57	123	41
			WB	Left	16	9	14					---	---	---	0	0	0	16	9	14
Hourly Peak Hour				Thr	553	595	461	32%		37%		4	12	13	4	12	13	557	607	475
Factors (PHFs) are:				Right	46	55	51					---	---	---	0	0	0	46	55	51
0.96	*0.98*	*0.92*	*Intersection*																	
INTERSECTION: Prospect Avenue and Broadway																				
Peak Hours Begin at:			SB	Left	23	48	27	5%		5%		1	2	2	1	2	2	24	50	29
745	1630	1145		Right	53	58	72					---	---	---	0	0	0	53	58	72
			EB	Left	89	83	80					---	---	---	0	0	0	89	83	80
				Thr	810	754	727	55%		50%		6	21	18	6	21	18	816	775	745
Hourly Peak Hour			WB	Thr	735	761	583		55%		50%	19	13	16	19	13	16	755	774	599
Factors (PHFs) are:				Right	21	39	25		5%		5%	2	1	2	2	1	2	23	41	26
0.97	*0.96*	*0.89*	*Intersection*																	
INTERSECTION: Albro Lane and Atlantic Avenue																				
Peak Hours Begin at:			NB	Left	4	7	8					---	---	---	0	0	0	4	7	8
745	1615	1215		Right	0	3	2					---	---	---	0	0	0	0	3	2
			EB	Thr	2	2	1	5%		5%		1	2	2	1	2	2	3	4	3
				Right	4	1	3					---	---	---	0	0	0	4	1	3
Hourly Peak Hour			WB	Left	8	11	9					---	---	---	0	0	0	8	11	9
Factors (PHFs) are:				Thr	43	80	37		5%		5%	2	1	2	2	1	2	45	81	39
0.74	*0.79*	*0.84*	*Intersection*																	

Table 4-8 **Trip Distribution and Assignment: Scenario B (with Perimeter Open Space)**

0.6% growth for 3 years, to 2022
3-year growth: 1.018
Seasonal Adjustment:
1.077 Weekday
1.108 Weekend

Adjusted counts x 1.018 for 3 years of ambient growth & trips to/from other planned projects

	59 single-family homes			Clubhouse Meetings / Events			*Local event entry*
	AM	PM	SUN	AM	PM	SUN	*AM*
Enter	11	38	36	23	3	27	*19*
Exit	35	23	32	2	2	4	*0*
Total	46	61	68	25	5	31	*19*

Transferred trips from Broadway, not new trips

AM	PM	SUN	Dir.	Mvmt.	2022 Baseline AM	PM	SUN	WEEKDAY % In	%Exit	WEEKEND % In	%Exit	Generated Traffic AM	PM	SUN	Generated Traffic AM	PM	SUN	% In	Transfer AM	Total Site Traffic AM	PM	SUN	2022 - Alternative B AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway																									
Peak Hours Begin at:			NB	Left	36	34	16		60%		55%	21	14	18	1	1	2		---	22	15	20	58	49	36
745	1630	1115		Right	13	12	14		40%		45%	14	9	14	1	1	2		---	15	10	16	28	22	30
			EB	Thr	791	653	731					---	---	---	---	---	---	-60%	-11	-11	0	0	780	653	731
				Right	11	45	18	60%		55%		7	23	20	14	2	15	60%	11	32	25	35	43	70	53
Hourly Peak Hour			WB	Left	16	18	19	40%		45%		4	15	16	9	1	12	40%	8	21	16	28	38	34	48
Factors (PHFs) are:				Thr	694	739	549					---	---	---	---	---	---	-40%	-8	-8	0	0	686	739	549
0.97	*0.94*	*0.91*	*Intersection*																						
INTERSECTION: Pine Street and Broadway																									
Peak Hours Begin at:			SB	Left	1	9	3					---	---	---	---	---	---			0	0	0	1	9	3
745	1630	1115		Right	16	16	9					---	---	---	---	---	---			0	0	0	16	16	9
			EB	Left	3	30	15					---	---	---	---	---	---			0	0	0	3	30	15
				Thr	801	689	746	60%		55%		7	23	20	14	2	15			20	25	35	822	714	780
Hourly Peak Hour			WB	Thr	723	768	562		60%		55%	21	14	18	1	1	2			22	15	20	745	783	581
Factors (PHFs) are:				Right	7	5	3					---	---	---	---	---	---			0	0	0	7	5	3
0.97	*0.94*	*0.91*	*Intersection*																						
INTERSECTION: Woodmere Boulevard and Broadway																									
			NB	Left	64	104	42	4%		4%		0	2	1	1	0	1			1	2	3	65	106	44
Peak Hours Begin at:				Thr	80	81	52					---	---	---	---	---	---			0	0	0	80	81	52
745	1645	1145		Right	7	8	11					---	---	---	---	---	---			0	0	0	7	8	11
			SB	Left	65	92	74					---	---	---	---	---	---			0	0	0	65	92	74
				Thr	89	162	70					---	---	---	---	---	---			0	0	0	89	162	70
				Right	87	37	76	4%		4%		0	2	1	1	0	1			1	2	3	88	39	78
			EB	Left	66	71	79		4%		4%	1	1	1	0	0	0			1	1	1	67	72	80
				Thr	632	352	578		32%		37%	11	7	12	1	1	1			12	8	13	644	360	591
				Right	56	122	39		4%		4%	1	1	1	0	0	0			1	1	1	57	123	41
			WB	Left	16	9	14					---	---	---	---	---	---			0	0	0	16	9	14
Hourly Peak Hour				Thr	553	595	461	32%		37%		4	12	13	7	1	10			11	13	23	564	608	485
Factors (PHFs) are:				Right	46	55	51					---	---	---	---	---	---			0	0	0	46	55	51
0.96	*0.98*	*0.92*	*Intersection*																						
INTERSECTION: Prospect Avenue and Broadway																									
Peak Hours Begin at:			SB	Left	23	48	27	5%		5%		1	2	2	1	0	1			2	2	3	25	50	30
745	1630	1145		Right	53	58	72					---	---	---	---	---	---			0	0	0	53	58	72
			EB	Left	89	83	80					---	---	---	---	---	---			0	0	0	89	83	80
				Thr	810	754	727	55%		50%		6	21	18	13	2	14			19	23	32	829	777	758
Hourly Peak Hour			WB	Thr	735	761	583		55%		50%	19	13	16	1	1	2			20	14	18	756	775	601
Factors (PHFs) are:				Right	21	39	25		5%		5%	2	1	2	0	0	0			2	1	2	23	41	27
0.97	*0.96*	*0.89*	*Intersection*																						
INTERSECTION: Albro Lane and Atlantic Avenue																									
Peak Hours Begin at:			NB	Left	4	7	8					---	---	---	---	---	---			0	0	0	4	7	8
745	1615	1215		Right	0	3	2					---	---	---	---	---	---			0	0	0	0	3	2
			EB	Thr	2	2	1	5%		5%		1	2	2	1	0	1			2	2	3	4	4	4
				Right	4	1	3					---	---	---	---	---	---			0	0	0	4	1	3
Hourly Peak Hour			WB	Left	8	11	9					---	---	---	---	---	---			0	0	0	8	11	9
Factors (PHFs) are:				Thr	43	80	37		5%		5%	2	1	2	0	0	0			2	1	2	45	81	39
0.74	*0.79*	*0.84*	*Intersection*																						

Table 4-9 **Trip Distribution and Assignment: Scenario C (with Golf Course)**

0.6% growth for 3 years, to 2022
3-year growth 1.018
Seasonal Adjustment:
1.077 Weekday
1.108 Weekend

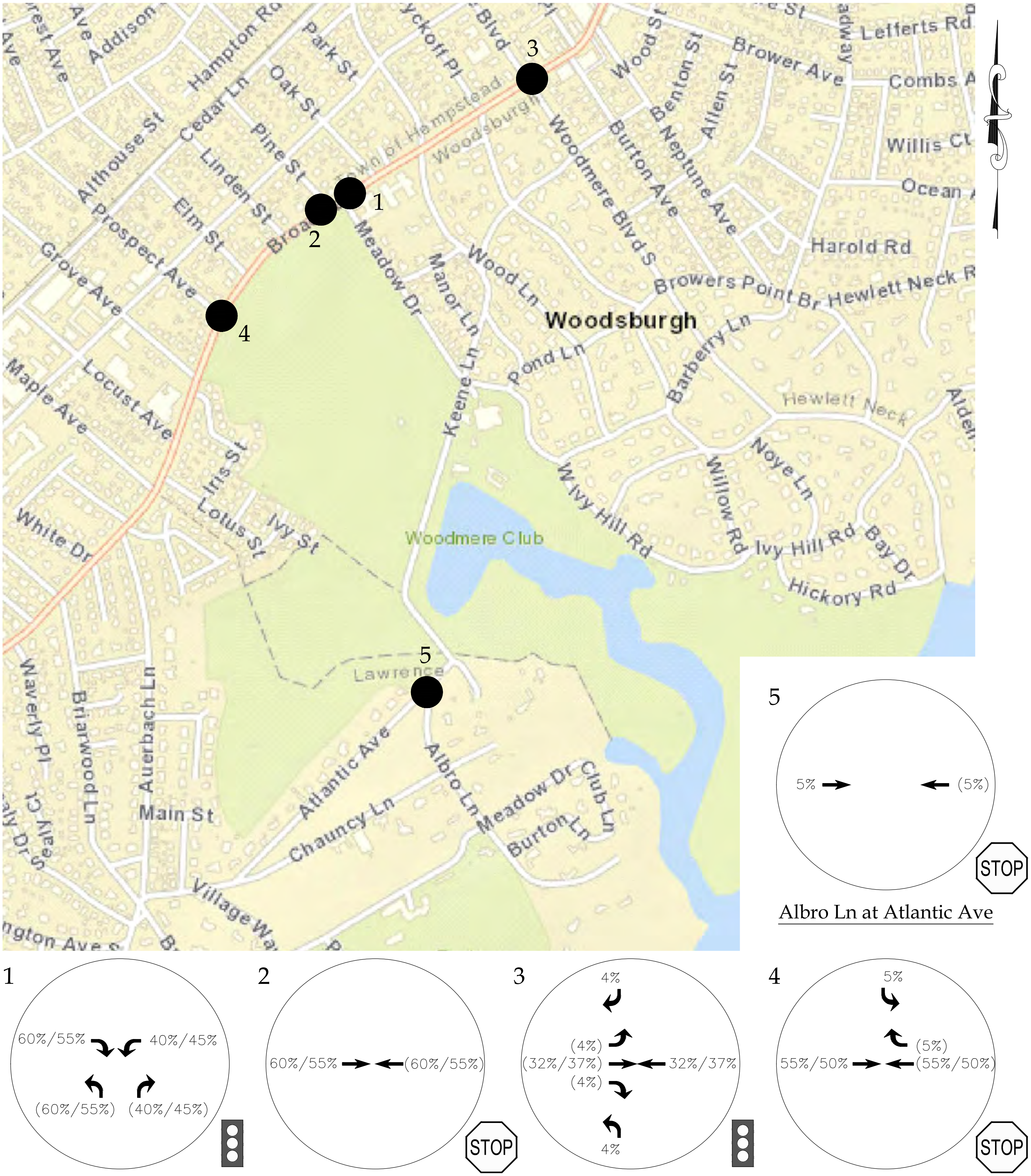
Adjusted x 1.018 for 3 years of ambient growth & trips to/from other planned projects

	59 single-family homes AM	PM	SUN	Clubhouse Meetings / Events AM	PM	SUN	9-hole Golf Course* AM	PM	SUN	Local event entry AM
Enter	11	38	36	23	3	27	18	16	23	19
Exit	35	23	32	2	2	4	8	19	24	0
Total	46	61	68	25	5	31	26	35	47	19

Transferred trips from Broadway, not new trips

Reflects the peak 4 months of the year

AM / PM / SUN	Dir.	Mvmt	2022 Baseline AM	PM	SUN	WEEKDAY % In	WEEKDAY %Exit	WEEKEND % In	WEEKEND %Exit	Generated Traffic (59 single-family homes) AM	PM	SUN	Generated Traffic (Clubhouse Meetings / Events) AM	PM	SUN	Generated Traffic (9-hole Golf Course) AM	PM	SUN	% In	Transfer AM	Total Site Traffic AM	PM	SUN	2022 - Alternative C AM	PM	SUN
INTERSECTION: Meadow Drive and Broadway																										
Peak Hours Begin at:	NB	Left	36	34	16		60%		55%	21	14	18	1	1	2	5	11	13		---	27	26	33	63	60	49
745 1630 1115		Right	13	12	14		40%		45%	14	9	14	1	1	2	3	8	11		---	18	18	27	31	30	41
	EB	Thr	791	653	731					---	---	---	---	---	---	---	---	---	-60%	-11	-11	0	0	780	653	731
		Right	11	45	18	60%		55%		7	23	20	14	2	15	11	10	13	60%	11	43	34	47	54	79	65
Hourly Peak Hour	WB	Left	16	18	19	40%		45%		4	15	16	9	1	12	7	6	10	40%	8	28	23	39	45	40	58
Factors (PHFs) are:		Thr	694	739	549					---	---	---	---	---	---	---	---	---	-40%	-8	-8	0	0	686	739	549
0.97 0.94 0.91	*Intersection*																									
INTERSECTION: Pine Street and Broadway																										
Peak Hours Begin at:	SB	Left	1	9	3					---	---	---	---	---	---	---	---	---			0	0	0	1	9	3
745 1630 1115		Right	16	16	9					---	---	---	---	---	---	---	---	---			0	0	0	16	16	9
	EB	Left	3	30	15					---	---	---	---	---	---	---	---	---			0	0	0	3	30	15
		Thr	801	689	746	60%		55%		7	23	20	14	2	15	11	10	13			31	34	47	832	723	793
Hourly Peak Hour	WB	Thr	723	768	562		60%		55%	21	14	18	1	1	2	5	11	13			27	26	33	750	794	595
Factors (PHFs) are:		Right	7	5	3					---	---	---	---	---	---	---	---	---			0	0	0	7	5	3
0.97 0.94 0.91	*Intersection*																									
INTERSECTION: Woodmere Boulevard and Broadway																										
	NB	Left	64	104	42	4%		4%		0	2	1	1	0	1	1	1	1			2	2	3	66	106	45
Peak Hours Begin at:		Thr	80	81	52					---	---	---	---	---	---	---	---	---			0	0	0	80	81	52
745 1645 1145		Right	7	8	11					---	---	---	---	---	---	---	---	---			0	0	0	7	8	11
	SB	Left	65	92	74					---	---	---	---	---	---	---	---	---			0	0	0	65	92	74
		Thr	89	162	70					---	---	---	---	---	---	---	---	---			0	0	0	89	162	70
		Right	87	37	76	4%		4%		0	2	1	1	0	1	1	1	1			2	2	3	89	40	79
	EB	Left	66	71	79		4%		4%	1	1	1	0	0	0	0	1	1			2	2	2	68	73	81
		Thr	632	352	578		32%		37%	11	7	12	1	1	1	3	6	9			14	14	22	647	366	600
		Right	56	122	39		4%		4%	1	1	1	0	0	0	0	1	1			2	2	2	58	123	42
	WB	Left	16	9	14					---	---	---	---	---	---	---	---	---			0	0	0	16	9	14
Hourly Peak Hour		Thr	553	595	461	32%		37%		4	12	13	7	1	10	6	5	9			17	18	32	570	613	493
Factors (PHFs) are:		Right	46	55	51					---	---	---	---	---	---	---	---	---			0	0	0	46	55	51
0.96 0.98 0.92	*Intersection*																									
INTERSECTION: Prospect Avenue and Broadway																										
Peak Hours Begin at:	SB	Left	23	48	27	5%		5%		1	2	2	1	0	1	1	1	1			3	3	4	26	51	31
745 1630 1145		Right	53	58	72					---	---	---	---	---	---	---	---	---			0	0	0	53	58	72
	EB	Left	89	83	80					---	---	---	---	---	---	---	---	---			0	0	0	89	83	80
		Thr	810	754	727	55%		50%		6	21	18	13	2	14	10	9	12			29	31	43	839	785	770
Hourly Peak Hour	WB	Thr	735	761	583		55%		50%	19	13	16	1	1	2	4	10	12			25	24	30	760	786	613
Factors (PHFs) are:		Right	21	39	25		5%		5%	2	1	2	0	0	0	0	1	1			2	2	3	23	42	28
0.97 0.96 0.89	*Intersection*																									
INTERSECTION: Albro Lane and Atlantic Avenue																										
Peak Hours Begin at:	NB	Left	4	7	8					---	---	---	---	---	---	---	---	---			0	0	0	4	7	8
745 1615 1215		Right	0	3	2					---	---	---	---	---	---	---	---	---			0	0	0	0	3	2
	EB	Thr	2	2	1	5%		5%		1	2	2	1	0	1	1	1	1			3	3	4	5	5	5
		Right	4	1	3					---	---	---	---	---	---	---	---	---			0	0	0	4	1	3
Hourly Peak Hour	WB	Left	8	11	9					---	---	---	---	---	---	---	---	---			0	0	0	8	11	9
Factors (PHFs) are:		Thr	43	80	37		5%		5%	2	1	2	0	0	0	0	1	1			2	2	3	45	82	40
0.74 0.79 0.84	*Intersection*																									



1 Meadow Dr at Broadway

2 Pine St at Broadway

3 Woodmere Blvd at Broadway

4 Prospect Ave at Broadway

5 Albro Ln at Atlantic Ave

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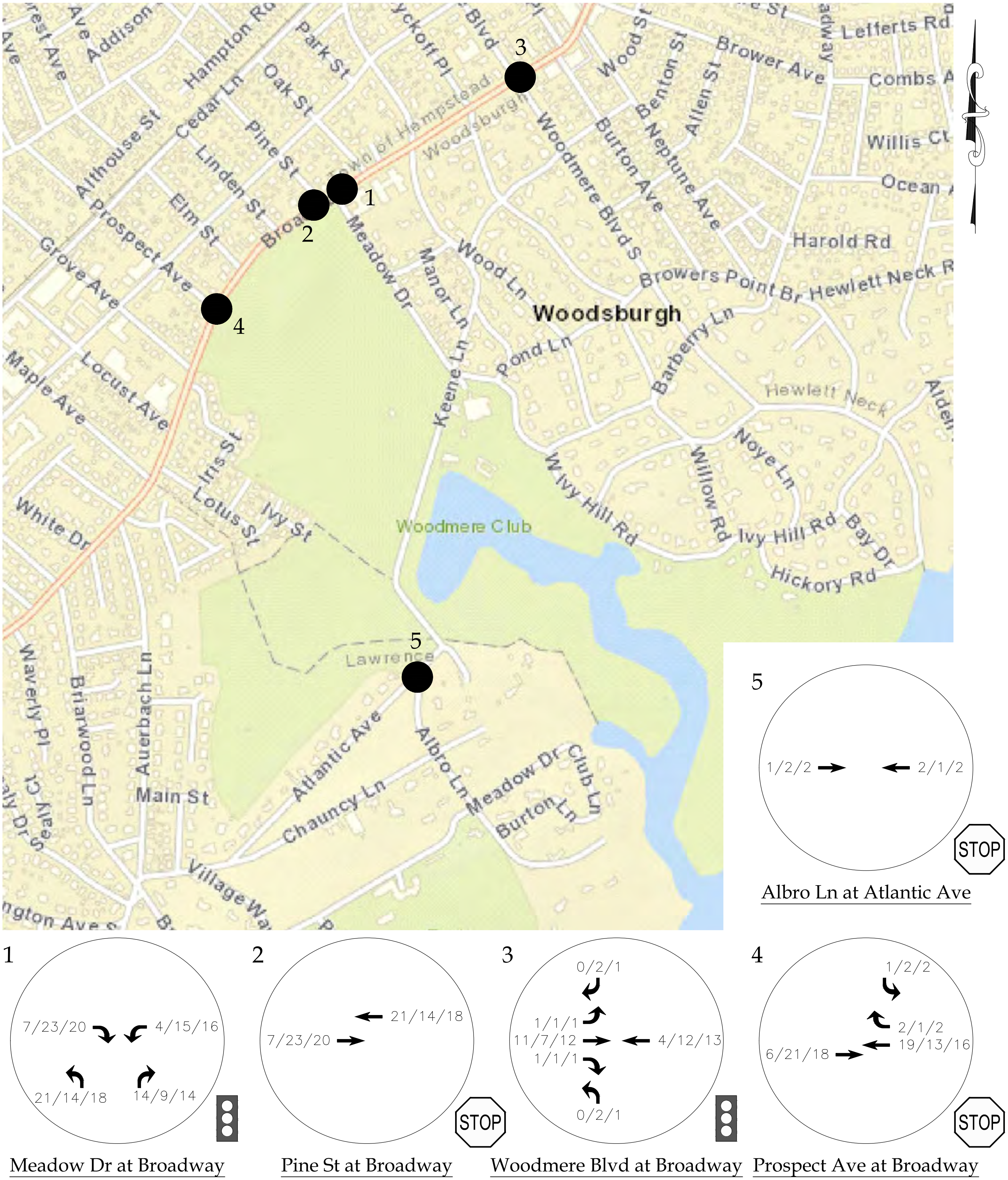
Distribution Of Site-Generated Traffic

Figure No. 4-3

KEY:
- ENTERING
- (EXITING IN PARENTHESES)
- WEEKDAY / WEEKEND



Peak Hour Generated Traffic Scenario A

Figure No. 4-4

KEY: AM/PM/SUN

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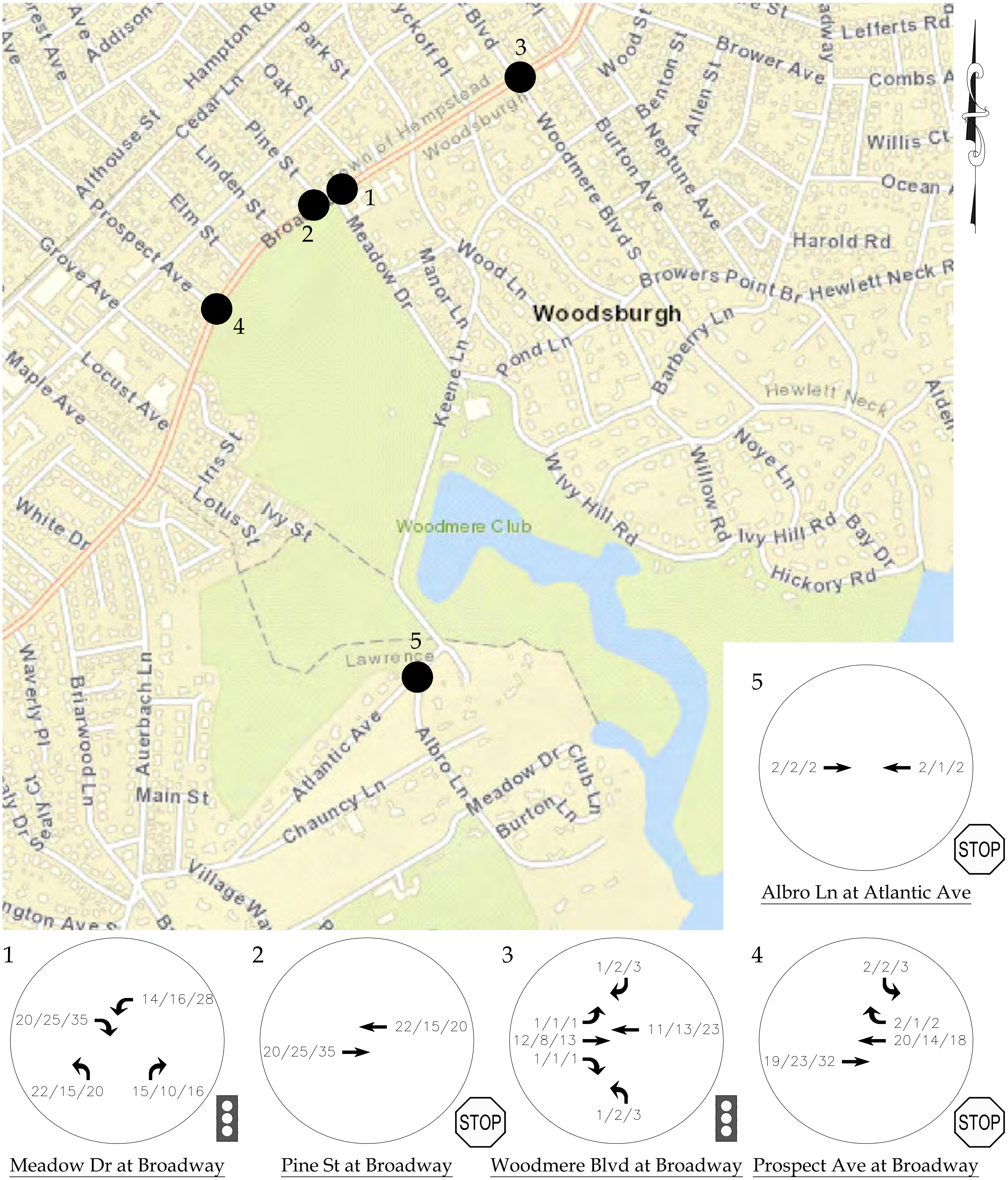

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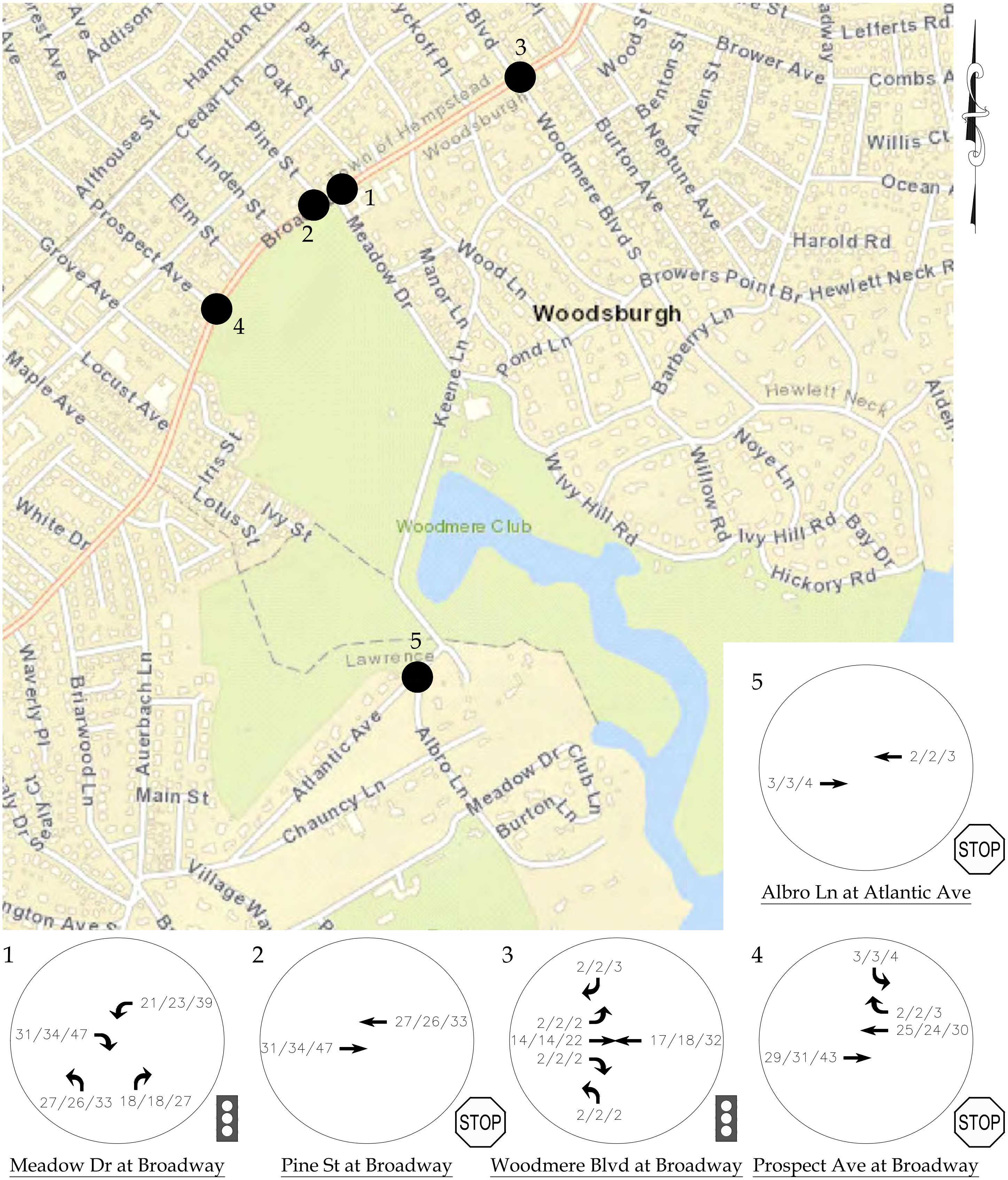
Peak Hour Generated Traffic Scenario B

Figure No. 4-5

KEY: AM/PM/SUN



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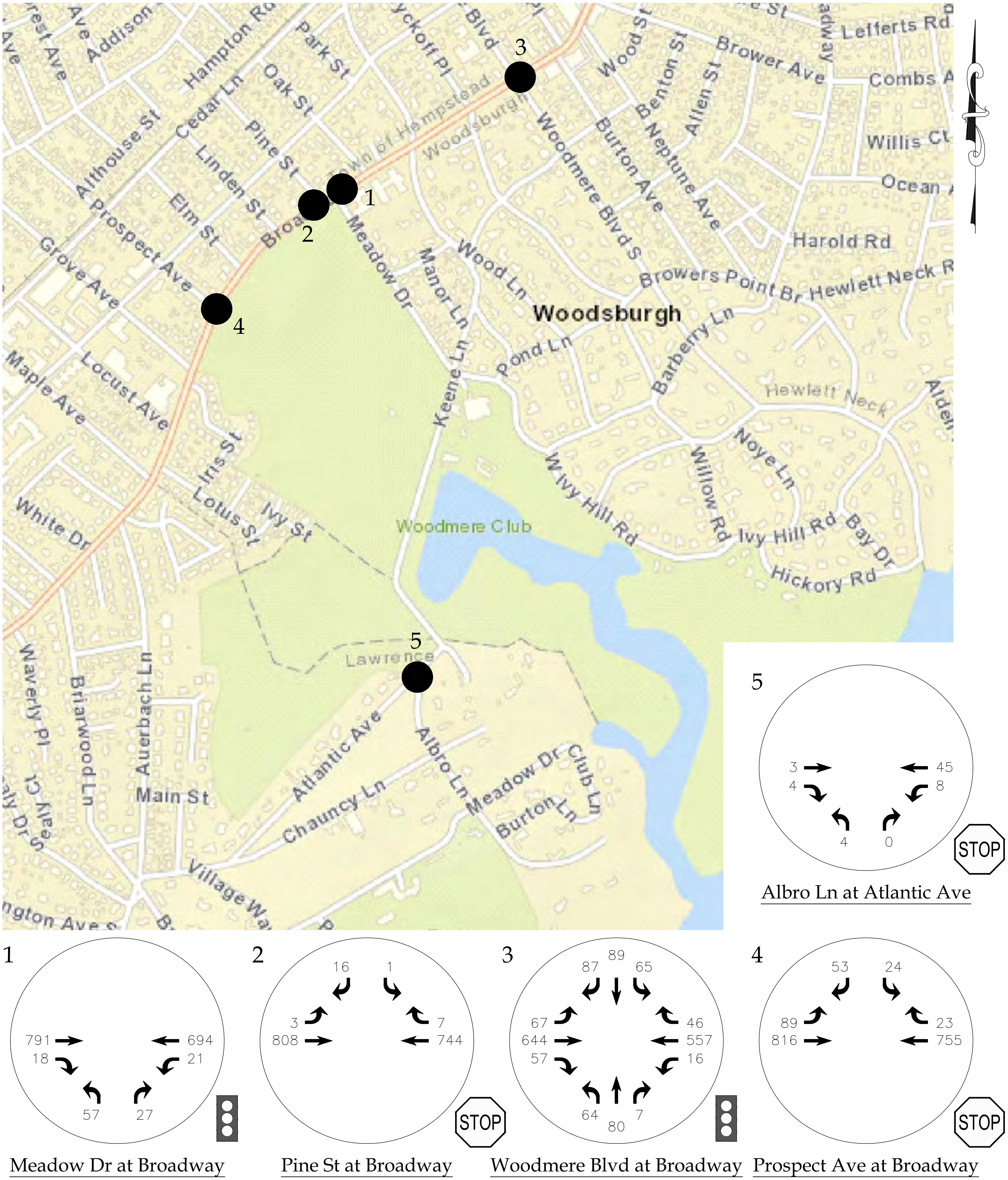
Peak Hour Generated Traffic Scenario C

Figure No. 4-6

KEY: AM/PM/SUN



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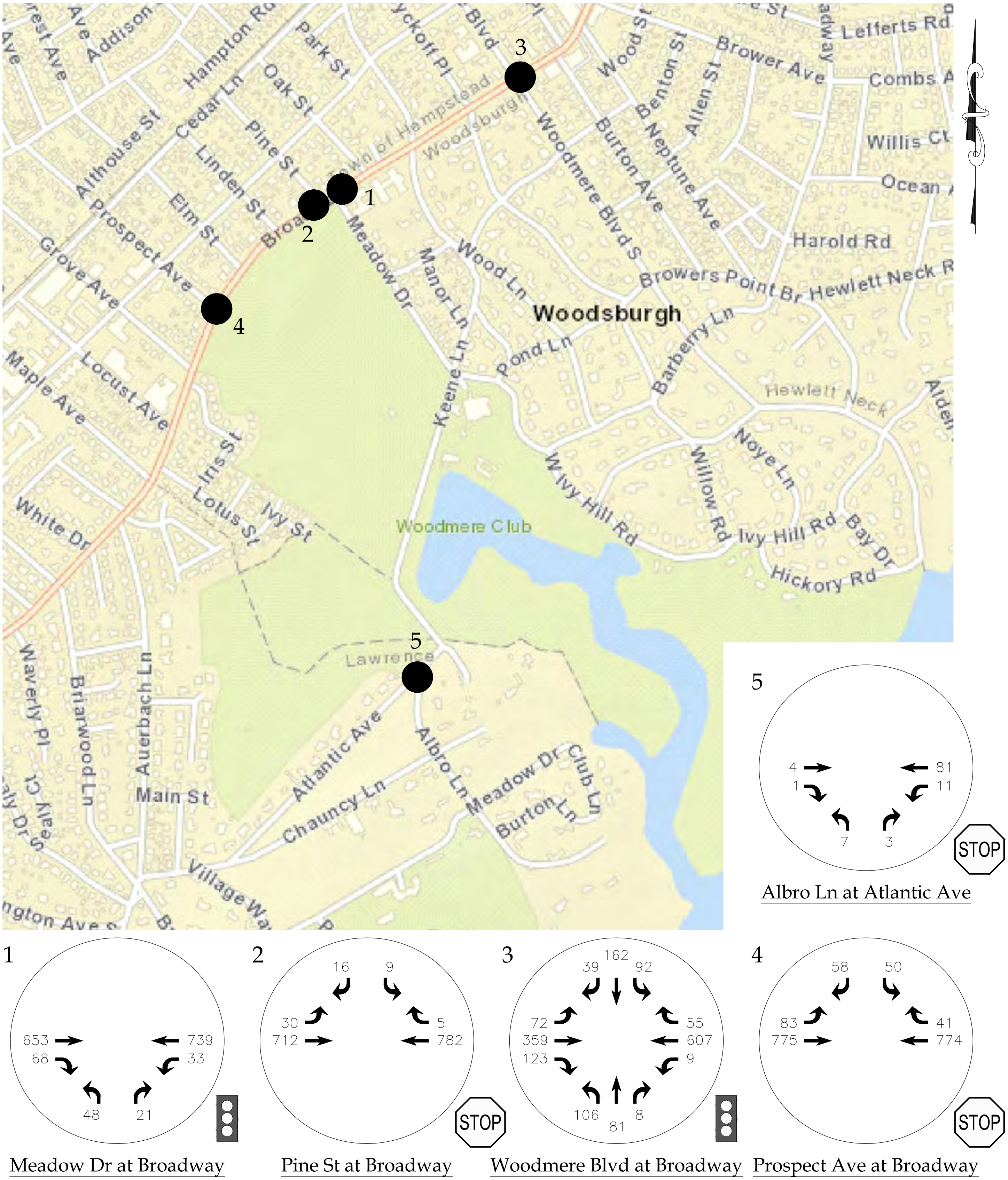
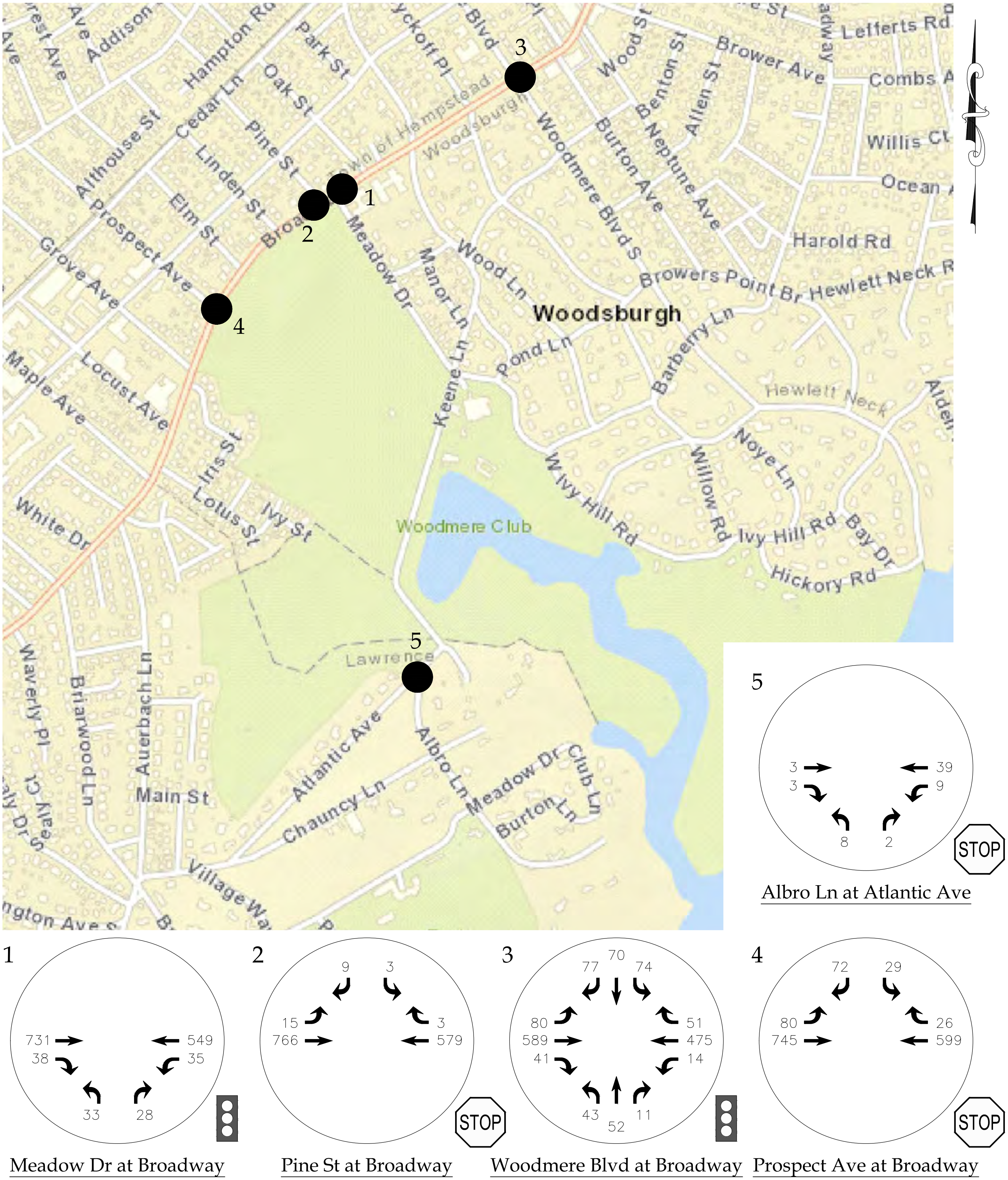
AM Peak Hour Volumes (Scenario A)
Figure No. 4-7



PM Peak Hour Volumes (Scenario A)

Figure No. 4-8



Sunday Peak Hour Volumes (Scenario A)

Figure No. 4-9

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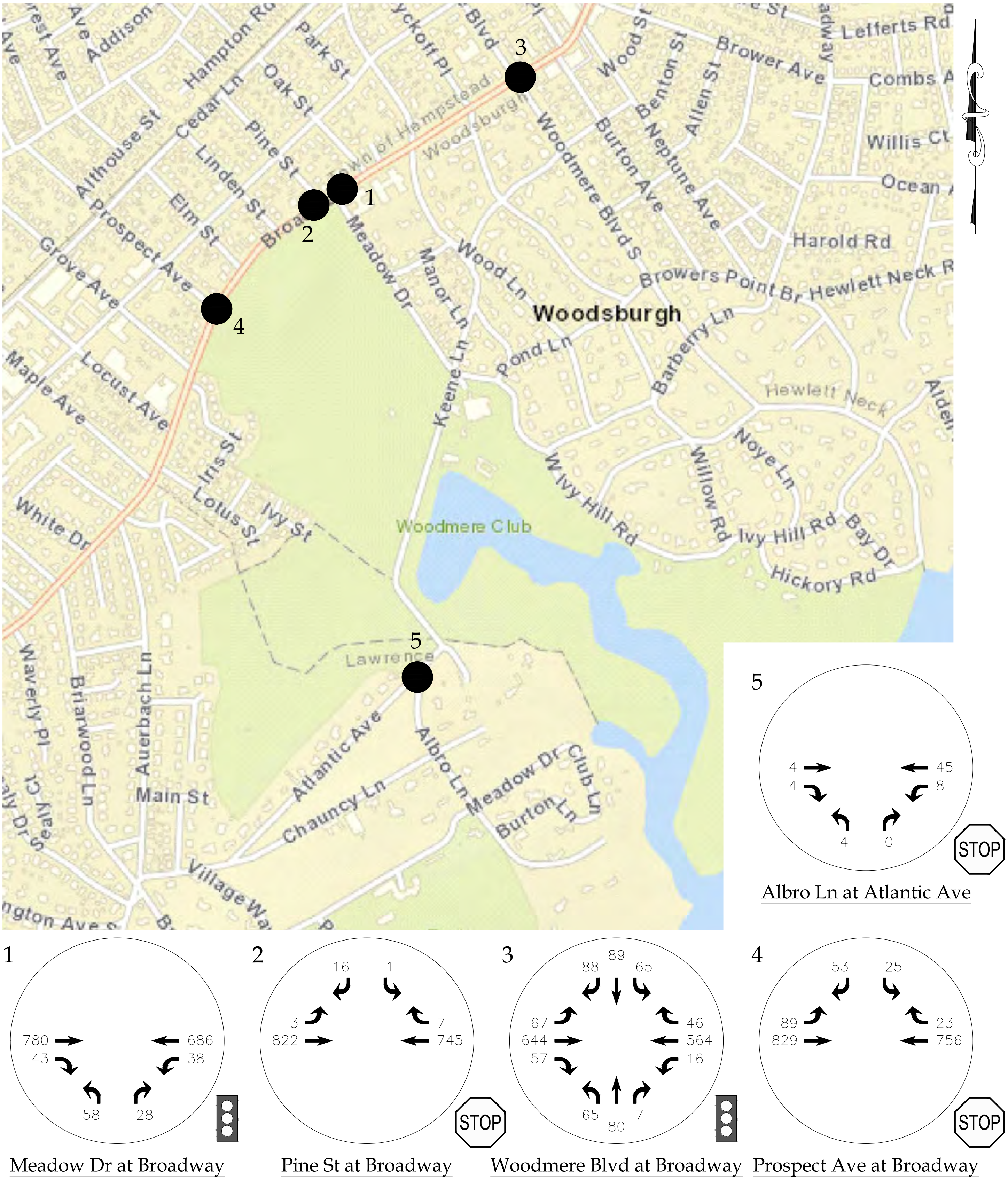

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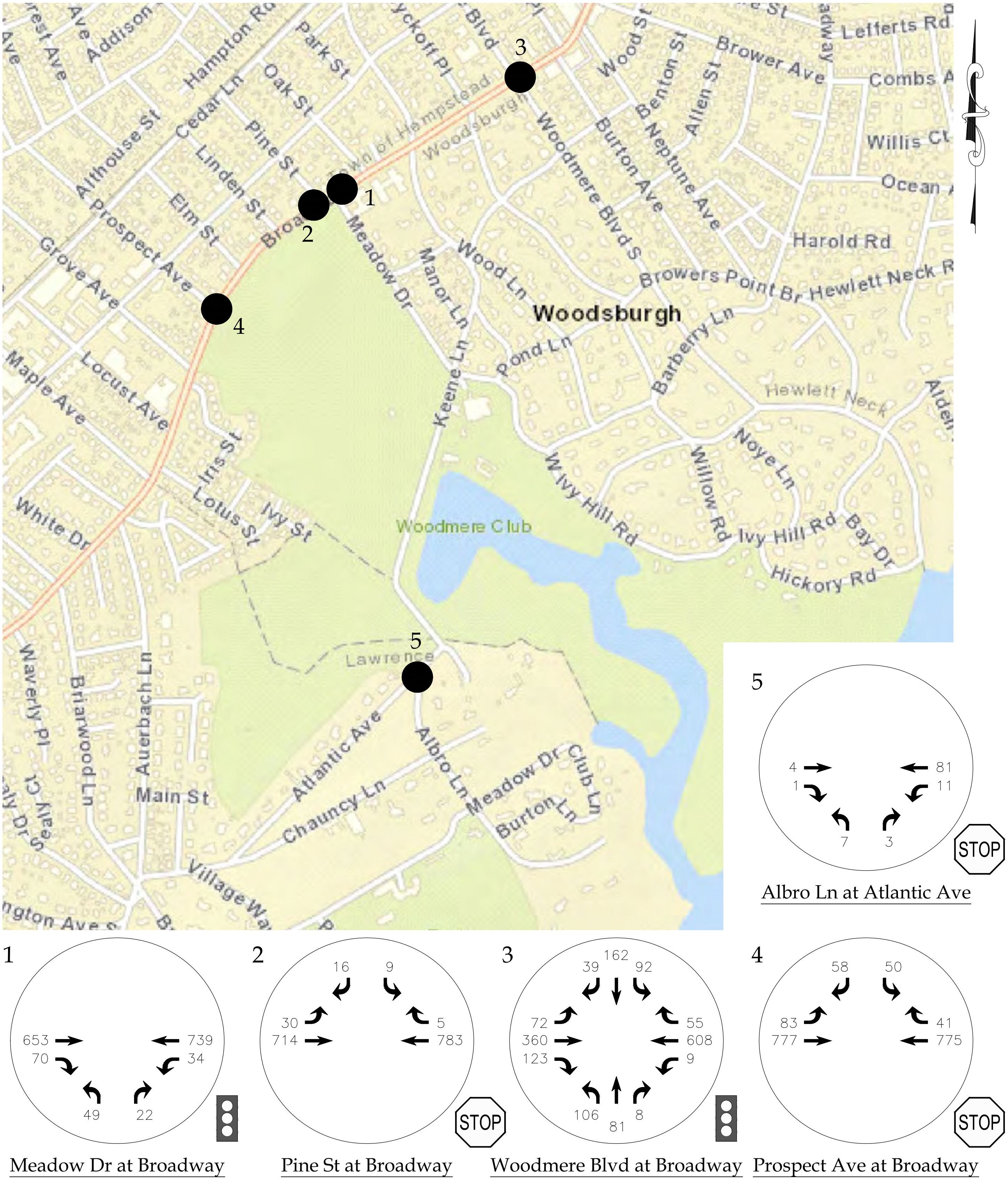
AM Peak Hour Volumes (Scenario B)
Figure No. 4-10



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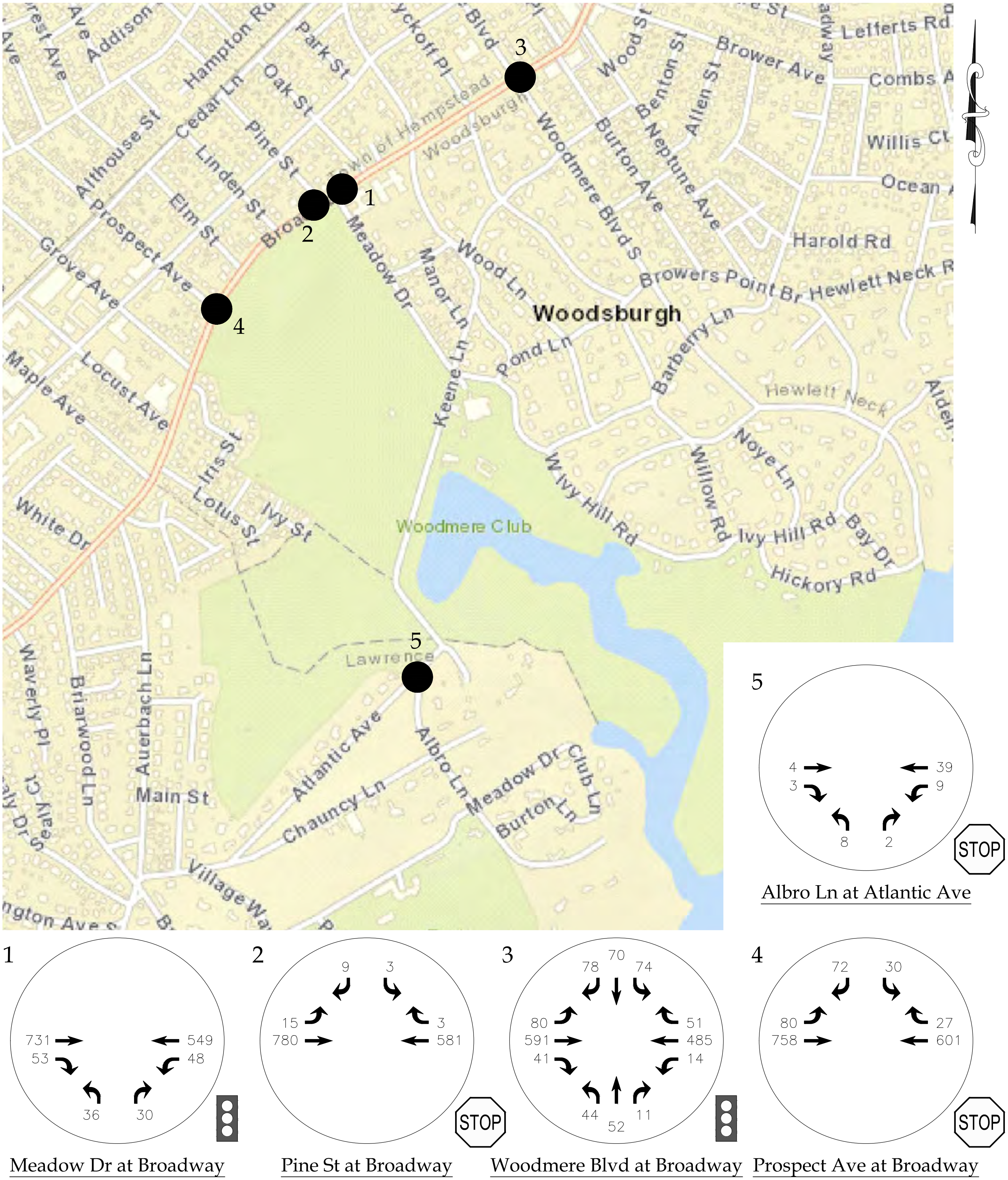
PM Peak Hour Volumes (Scenario B)
Figure No. 4-11



Sunday Peak Hour Volumes (Scenario B)
Figure No. 4-12

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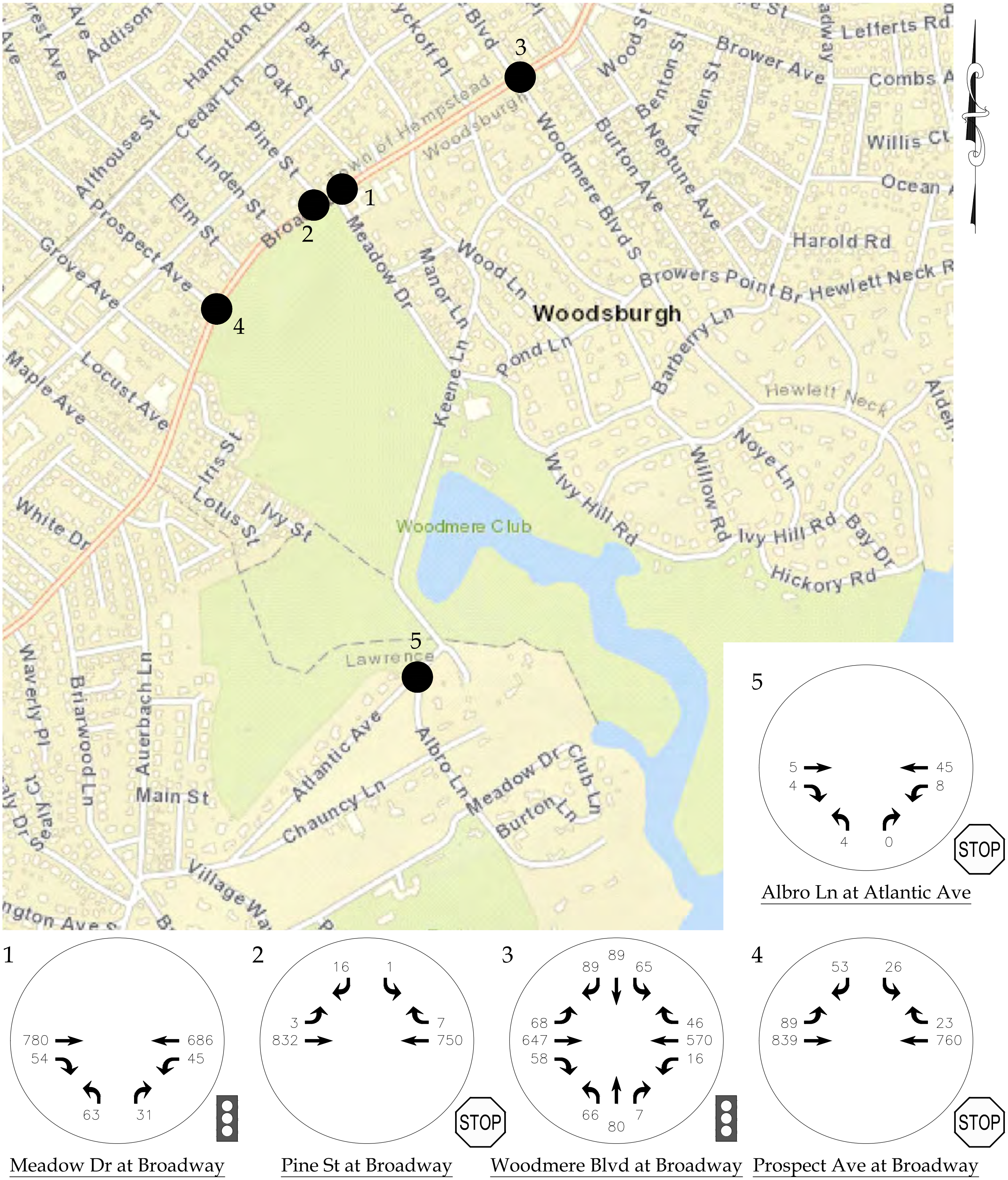

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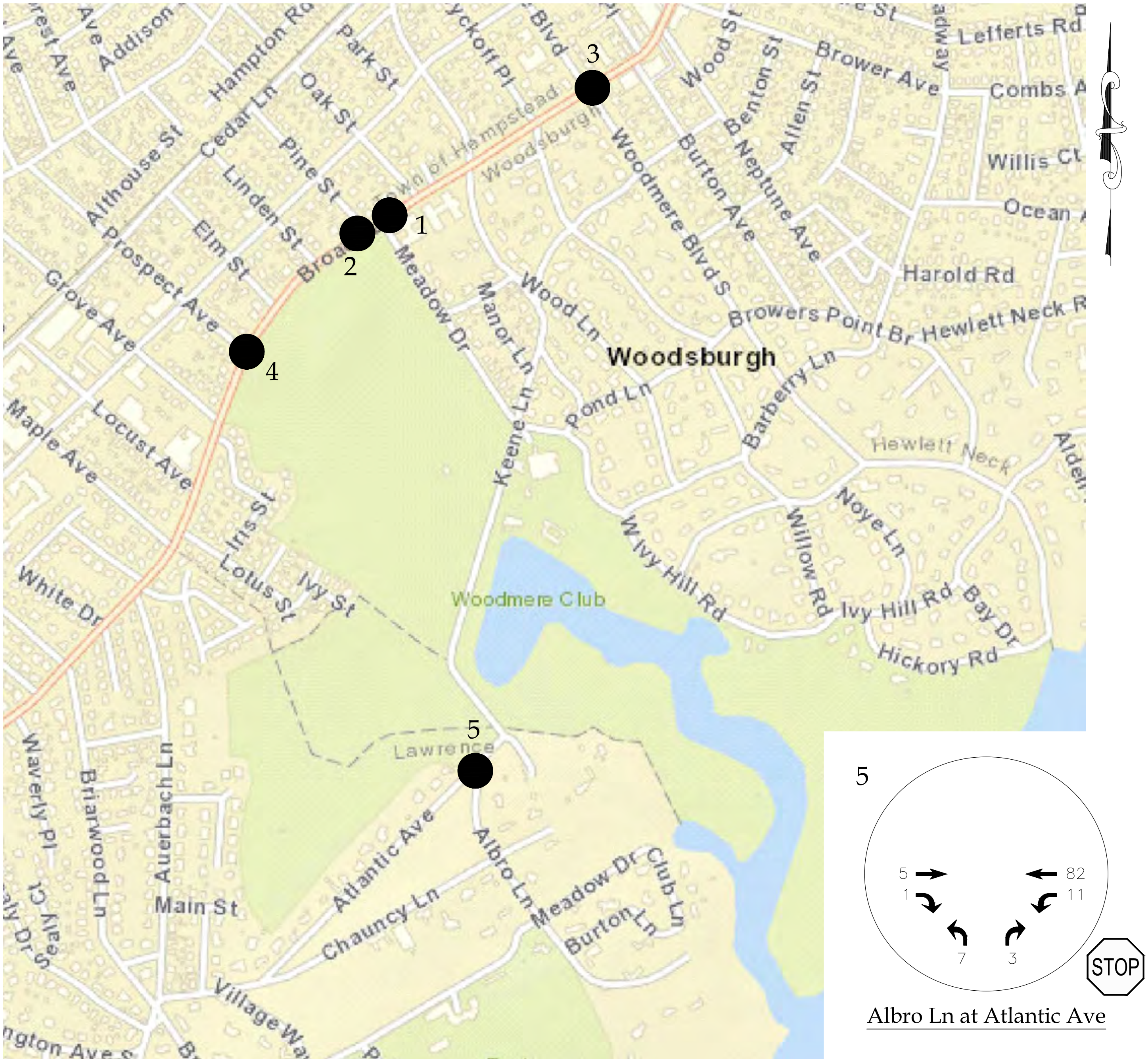
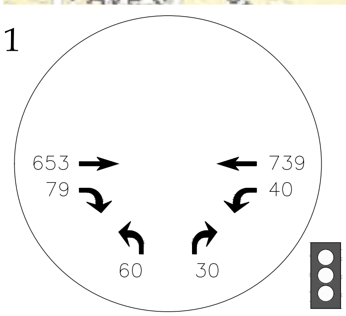
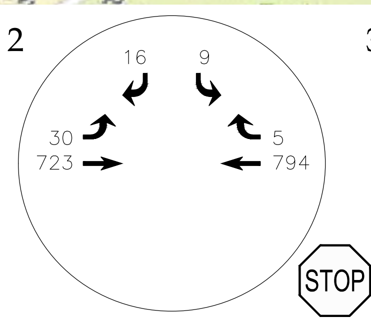
AM Peak Hour Volumes (Scenario C)
Figure No. 4-13



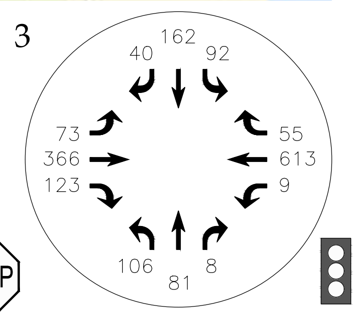
Albro Ln at Atlantic Ave



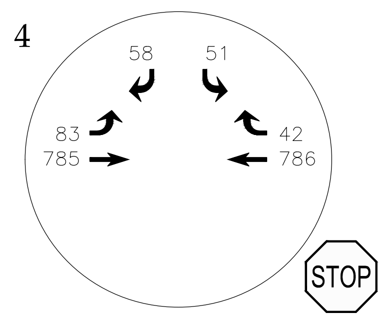
Meadow Dr at Broadway



Pine St at Broadway



Woodmere Blvd at Broadway



Prospect Ave at Broadway

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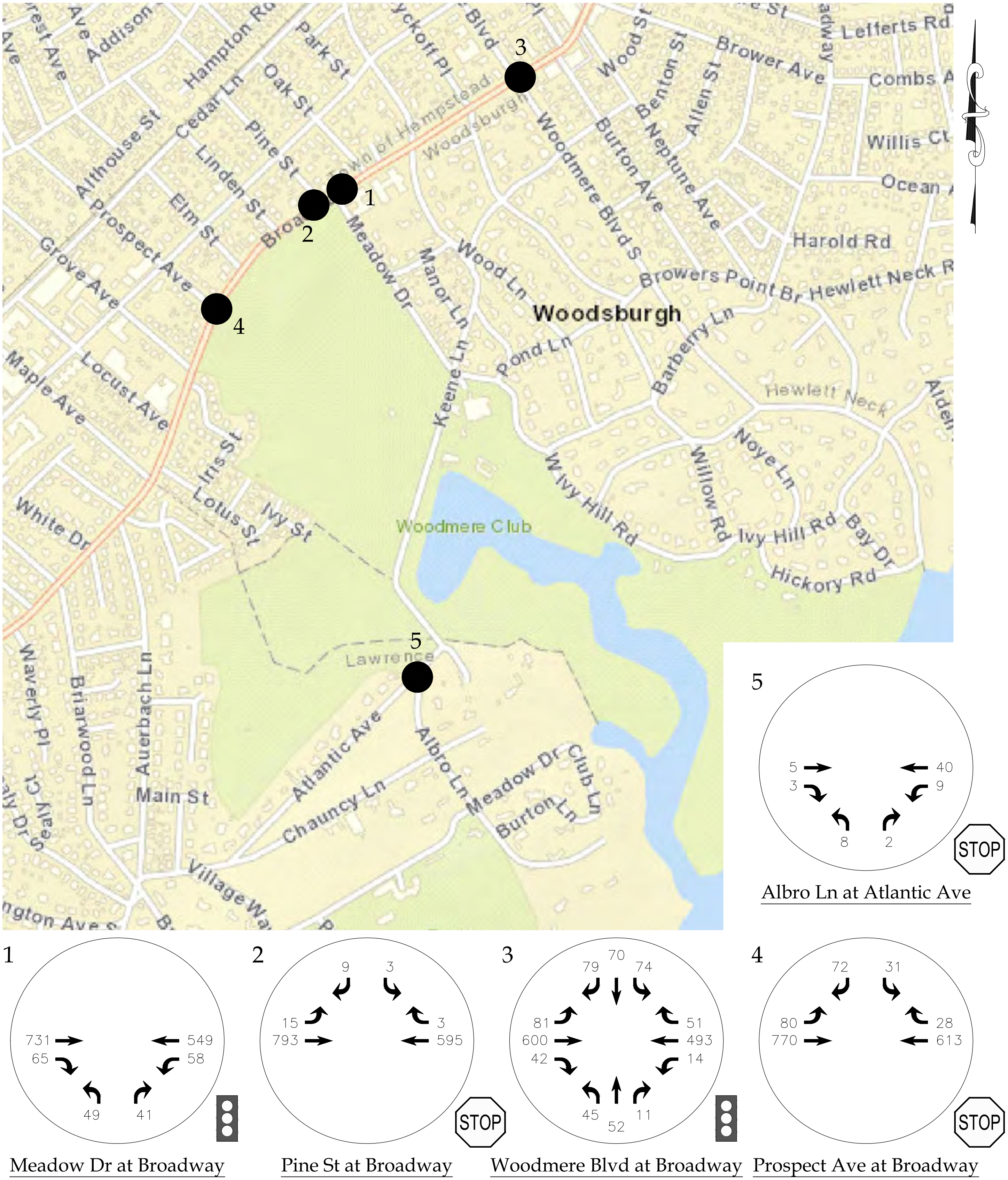
PM Peak Hour Volumes (Scenario C)
Figure No. 4-14



Sunday Peak Hour Volumes (Scenario C)
Figure No. 4-15

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5. Assessing Impact: As-of-Right/Coastal Conservation District Scenario Levels of Service

The next step of this report was to determine the future levels of service with the proposed Coastal Conservation District. Any traffic impacts are gauged by the genuine differences between the scenario levels of service compared to the As-of-Right scenario.

Table 5-1 follows at the end of this section and contains the future level of service summaries. The table is summarized below, and the analysis worksheets are in Appendix I (for Scenario A), Appendix J (Scenario B) and Appendix K (Scenario C).

Each description applies equally to the full buildout scenarios with the proposed zoning (Scenarios A, B, and C) unless otherwise noted. As expected, Scenario A (59 residences) yielded the lowest delays (best operation), with slightly higher delays for Scenarios B and C (59 residences, Clubhouse/golf use), and the highest delays under the As-of-Right scenario (±285 residences).

5.1 Broadway and Meadow Drive

Northbound delay will increase the most under the As-of-Right scenario, though not enough to yield adverse impacts to this intersection. There are nominal differences between Scenarios A, B, and C (59 residences and Clubhouse/golf use); each scenario will operate with less delay than the As-of-Right scenario (285 residences) and with no delay changes compared to existing conditions.

This intersection will not require traffic mitigation under any of the analyzed scenarios. Under the As of Right scenario, if there is no new driveway across Prospect Avenue, northbound Meadow Drive would have ±8 seconds of additional delay in the AM peak hour.

5.2 Broadway and Pine Street

The levels of service at this intersection will be the same for all scenarios (As-of-Right and Coastal Conservation District Scenarios A, B, and C) during all time periods. There are nominal differences in delay, within 1-2 seconds between different scenarios.

This intersection will not require traffic mitigation under any of the analyzed scenarios.

5.3 Broadway and Woodmere Boulevard

The only difference between any scenario with full buildout under the proposed zoning (59 residences and Clubhouse/golf use) and the As-of-Right scenario (285 residences) is during the weekday PM peak hour, but the differences are minimal:

The eastbound approach operates at LOS C As-of-Right, which is comparable albeit with higher delay than the LOS B operation under any scenario with the proposed Coastal

Conservation District (59 residences and Clubhouse/golf use). The southbound approach will operate at LOS D under the As-of-Right scenario (285 residences), compared to LOS C under Scenarios B or C (59 residences and Clubhouse/golf use). The corresponding delay differences are small.

This intersection will not require traffic mitigation under any of the analyzed scenarios.

5.4 Broadway and Prospect Avenue

This location will operate at an overall LOS A under Scenario A, B, or C (59 residences and Clubhouse/golf use). The eastbound and westbound Broadway approaches will operate at LOS A or LOS B during all peak hours, under any scenario. The differences are less than 1 second per vehicle, too small for drivers to notice.

However, the As-of-Right scenario (285 residences) could change overall operation to LOS B or C if its proposed second driveway is approved. Additionally, with or without a new driveway, the As-of-Right scenario would incur significant adverse impacts to southbound traffic that would require mitigation, and northbound traffic with a new driveway would experience high delays that are not appropriate for day-to-day operation.

Currently, southbound traffic operates at LOS D, LOS F (61 seconds of delay per vehicle), and LOS D during the respective AM, PM, and Weekend peak hours. The three scenarios with full buildout under the proposed zoning yield LOS E, LOS F, and LOS D/E during the same peak hours. Scenarios A (59 residences) and B (59 residences and Clubhouse) change PM southbound delay by roughly 10 seconds, with roughly 17 seconds for Scenario C (59 residences and Clubhouse/golf use), which represents the peak condition 4 months a year.

On the contrary, the Willow View Estates As-of-Right scenario (Residence B zoning, 285 residences) represents higher LOS E delays for the AM and Weekend Midday hours, and more than twice the delay – 126 to 136 seconds of delay, 65 to 75 more than without development – during the PM peak hour.

The As-of-Right scenario requires mitigation because of the magnitude and frequency of the delay increase, a typical day-to-day condition rather than an infrequent peak condition.

Furthermore, if the As-of-Right scenario includes a new access on Broadway, the northbound approach is not expected to operate well. With 40% of site traffic utilizing this driveway, anticipated delays are well above the LOS F threshold during every peak hour, in the typical, day-to-day condition: over 360 seconds in any peak hour.

This intersection is unsignalized and it could warrant a traffic light under the As-of-Right scenario, or significant widening on Prospect Avenue. There are limited options available, and the anticipated options would introduce stopped traffic on Broadway and/or remove street parking from Prospect Avenue to accommodate widening.

5.5 Albro Lane and Atlantic Avenue

Each lane group at this intersection will maintain its Level of Service A during each time period, under each scenario that was analyzed. The difference between scenarios is less than 1 second; there is no discernable difference. This intersection will not require traffic mitigation under any of the analyzed scenarios.

Table 5-1, Level of Service Summaries, follows at the end of this section.

Table 5-1

Broadway at Meadow Drive Level of Service

				2022 ±285 single-family homes As of Right						2022 with the proposed zoning: 59 single-family homes, hospitality, golf								
AM Peak Hour	**2019 Volumes**			**No new driveway**			**New driveway opposite Prospect Avenue**			**2022 Scenario A**			**2022 Scenario B**			**2022 Scenario C**		
Movement	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**
Eastbound TR	5.3	0.57	A	10.7	0.70	B	8.0	0.64	A	6.0	0.61	A	6.2	0.62	A	6.6	0.63	A
Westbound LT	1.0	0.50	A	1.8	0.62	A	1.5	0.59	A	1.1	0.53	A	1.2	0.55	A	1.3	0.56	A
Northbound LR	37.7	0.42	D	51.1	0.85	D	42.3	0.80	D	42.3	0.69	D	42.2	0.69	D	42.2	0.71	D
INTERSECTION	*4.4*		*A*	*11.7*		*B*	*8.1*		*A*	*5.7*		A	*5.9*		A	*6.3*		A
PM Peak Hour																		
Eastbound TR	4.7	0.52	A	8.3	0.66	A	6.0	0.57	A	5.1	0.55	A	5.1	0.55	A	5.5	0.56	A
Westbound LT	1.1	0.54	A	7.4	0.83	A	2.6	0.72	A	1.3	0.58	A	1.3	0.58	A	1.4	0.60	A
Northbound LR	37.2	0.39	D	41.7	0.79	D	41.8	0.74	D	40.1	0.59	D	40.5	0.60	D	41.9	0.70	D
INTERSECTION	*3.9*		*A*	*10.7*		*B*	*6.7*		*A*	*4.7*		A	*4.8*		A	*5.6*		A
Weekend Peak Hour																		
Eastbound TR	5.0	0.55	A	8.7	0.67	A	6.2	0.59	A	5.4	0.58	A	5.5	0.59	A	6.1	0.61	A
Westbound LT	0.7	0.41	A	4.3	0.66	A	1.8	0.58	A	0.9	0.45	A	1.0	0.47	A	1.1	0.50	A
Northbound LR	36.0	0.26	D	42.6	0.80	D	41.9	0.74	D	39.4	0.55	D	40.3	0.59	D	41.9	0.71	D
INTERSECTION	*3.9*		*A*	*10.2*		*B*	*6.8*		*A*	*5.0*		A	*5.3*		A	*6.2*		A

Table 5-1 (continued)

Broadway at Pine Street Level of Service

			2022 ±285 single-family homes As of Right				2022 with the proposed zoning: 59 single-family homes, hospitality, golf					
AM Peak Hour	**2019 Volumes**		**No new driveway**		**New driveway opposite Prospect Avenue**		**2022 Scenario A**		**2022 Scenario B**		**2022 Scenario C**	
Movement	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Eastbound Left-Through	5.3	A	9.7	A	9.4	A	9.4	A	9.4	A	9.4	A
Westbound Through-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Southbound Left-Right	15.8	C	18.2	C	16.9	C	16.7	C	16.8	C	16.9	C
Intersection	*0.2*	*A*	*0.2*	*A*	*0.2*	*A*	*0.2*	*A*	*0.2*	*A*	*0.2*	*A*
PM Peak Hour												
Eastbound Left-Through	9.6	A	10.0	A	9.8	A	9.8	A	9.8	A	9.8	A
Westbound Through-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Southbound Left-Right	26.4	D	34.1	D	29.6	D	28.9	D	28.9	D	29.7	D
Intersection	*0.6*	*A*	*0.7*	*A*	*0.7*	*A*	*0.7*	*A*	*0.7*	*A*	*0.7*	*A*
Weekend Peak Hour												
Eastbound Left-Through	8.7	A	9.0	A	8.8	A	8.8	A	8.8	A	8.9	A
Westbound Through-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
Southbound Left-Right	17.0	C	20.1	C	18.2	C	18.1	C	18.4	C	18.9	C
Intersection	*0.3*	*A*	*0.3*	*A*	*0.3*	*A*	*0.3*	*A*	*0.3*	*A*	*0.3*	*A*

Table 5-1 (continued)

Broadway at Woodmere Boulevard Level of Service

				2022 ±285 single-family homes As of Right						2022 with the proposed zoning: 59 single-family homes, hospitality, golf								
AM Peak Hour	**2019 Volumes**			**No new driveway**			**New driveway opposite Prospect Avenue**			**2022 Scenario A**			**2022 Scenario B**			**2022 Scenario C**		
Movement	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**	**Delay**	**v/c ratio**	**LOS**
Eastbound LTR	17.4	0.66	B	19.9	0.75	B	20.3	0.75	C	18.8	0.71	B	18.8	0.71	B	18.9	0.73	B
Westbound LTR	8.8	0.53	A	9.6	0.57	A	9.6	0.57	A	9.4	0.55	A	9.5	0.56	A	9.6	0.57	A
Northbound LTR	30.4	0.48	C	30.3	0.50	C	30.3	0.50	C	30.3	0.49	C	30.3	0.49	C	30.3	0.50	C
Southbound LTR	34.3	0.71	C	34.4	0.72	C	34.4	0.72	C	34.4	0.72	C	34.4	0.72	C	34.4	0.72	C
INTERSECTION	*17.9*		*B*	*19.2*		*B*	*19.3*		*B*	*18.6*		B	*18.6*		B	*18.7*		B
PM Peak Hour																		
Eastbound LTR	15.1	0.51	B	23.4	0.57	C	23.6	0.57	C	15.7	0.53	B	15.7	0.54	B	15.8	0.54	B
Westbound LTR	10.5	0.55	B	12.2	0.63	B	12.2	0.63	B	11.2	0.59	B	11.2	0.59	B	11.3	0.59	B
Northbound LTR	30.9	0.61	C	31.7	0.64	C	31.7	0.64	C	31.1	0.62	C	31.1	0.62	C	31.0	0.62	C
Southbound LTR	34.8	0.74	C	35.2	0.75	D	35.2	0.75	D	35.0	0.75	C	35.0	0.75	C	35.1	0.75	D
INTERSECTION	*18.5*		*B*	*21.8*		*C*	*21.9*		*C*	*19.0*		B	*19.0*		B	*19.1*		B
Weekend Peak Hour																		
Eastbound LTR	15.4	0.60	B	17.1	0.68	B	17.4	0.68	B	16.3	0.64	B	16.3	0.64	B	16.6	0.66	B
Westbound LTR	7.0	0.43	A	7.9	0.50	A	7.9	0.50	A	7.4	0.46	A	7.5	0.47	A	7.6	0.48	A
Northbound LTR	29.9	0.34	C	29.8	0.36	C	29.8	0.36	C	29.8	0.35	C	29.8	0.35	C	29.8	0.36	C
Southbound LTR	34.2	0.68	C	34.0	0.69	C	34.0	0.69	C	34.1	0.69	C	34.1	0.69	C	34.1	0.69	C
INTERSECTION	*16.2*		*B*	*17.0*		*B*	*17.1*		*B*	*16.7*		B	*16.7*		B	*16.8*		B

Table 5-1 (continued)

Broadway at Prospect Avenue Level of Service

			2022 ±285 single-family homes As of Right				2022 with the proposed zoning: 59 single-family homes, hospitality, golf					
AM Peak Hour	**2019 Volumes**		**No new driveway**		**New driveway opposite Prospect**		**2022 Scenario A**		**2022 Scenario B**		**2022 Scenario C**	
Movement	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
EB Left-Thru	9.8	A	10.4	B	10.1	B	10.1	B	10.1	B	10.1	B
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
* *Northbound*					**527.7**	**F**						
SB Left-Right	32.8	D	**46.0**	**E**	**43.9**	**E**	35.1	E	36.9	E	38.9	E
Intersection	*2.0*	*A*	*2.5*	*A*	***20.2***	***C***	*2.0*	*A*	*2.1*	*A*	*2.2*	*A*
PM Peak Hour												
EB Left-Thru	10.0	A	10.4	B	10.2	B	10.2	B	10.2	B	10.3	B
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
* *Northbound*					**400.2**	**F**						
SB Left-Right	61.0	F	**136.3**	**F**	**126.0**	**F**	71.2	F	71.2	F	78.8	F
Intersection	*4.2*	*A*	*8.6*	*A*	***16.6***	***C***	*4.8*	*A*	*4.8*	*A*	*5.2*	*A*
Weekend Peak Hour												
EB Left-Thru	9.3	A	9.7	A	9.4	A	9.4	A	9.5	A	9.5	A
WB Thru-Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
* *Northbound*					**380.3**	**F**						
SB Left-Right	29.0	D	**47.4**	**E**	**45.6**	**E**	32.0	D	33.9	D	37.1	E
Intersection	*2.4*	*A*	*3.5*	*A*	***14.6***	***B***	*2.6*	*A*	*2.7*	*A*	*2.9*	*A*

** The northbound approach only exists if Nassau County approves a driveway on Broadway opposite Prospect Avenue (not guaranteed)*

Table 5-1 (continued)

Albro Lane at Atlantic Avenue Level of Service

			2022 ±285 single-family homes As of		2022 with the proposed zoning: 59 single-family homes, hospitality, golf					
AM Peak Hour	**2019 Volumes**				**2022 Scenario A**		**2022 Scenario B**		**2022 Scenario C**	
Movement	**Delay**	**LOS**	**Delay***	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
NB Left-Right	7.7	A	7.8	A	7.7	A	7.7	A	7.7	A
EB Thru-Right	7.5	A	7.6	A	7.5	A	7.6	A	7.6	A
WB Left-Thru	7.4	A	7.5	A	7.5	A	7.5	A	7.5	A
Intersection	*7.4*	*A*	*7.5*	*A*	*7.5*	*A*	*7.5*	*A*	*7.5*	*A*
PM Peak Hour										
NB Left-Right	7.5	A	7.6	A	7.6	A	7.6	A	7.6	A
EB Thru-Right	6.8	A	7.1	A	6.9	A	6.9	A	7.0	A
WB Left-Thru	7.6	A	7.7	A	7.6	A	7.6	A	7.6	A
Intersection	*7.6*	*A*	*7.6*	*A*	*7.6*	*A*	*7.6*	*A*	*7.6*	*A*
Weekend Peak Hour										
NB Left-Right	7.1	A	7.2	A	7.1	A	7.1	A	7.1	A
EB Thru-Right	6.5	A	6.9	A	6.7	A	6.8	A	6.8	A
WB Left-Thru	7.2	A	7.3	A	7.2	A	7.2	A	7.2	A
Intersection	*7.1*	*A*	*7.2*	*A*	*7.1*	*A*	*7.1*	*A*	*7.1*	*A*

** The As of Right scenario generates the same traffic at this intersection with or without its proposed new driveway on Broadway opposite Prospect Avenue*

6. Daily Traffic Patterns

In addition to peak hour differences, the 285-residence (as of right) development would have vastly different *daily (24-hour)* traffic volumes than 59 residences with golf and hospitality use. Single-family homes generate traffic throughout the day and throughout the year; and the existing As of Right Residence B zoning (285 residences) would generate much more traffic than the full buildout under the proposed Coastal Conservation District under any Scenario (59 residences and Clubhouse/golf use), during individual timeframes and for the overall day.

The Clubhouse and a golf course are less active (if not dormant) for extended periods. The Clubhouse does not have events most days, and there are little to no Clubhouse trips outside the start and end of event. The golf course is completely dormant for roughly six months a year, and for roughly 10-14 hours per day during golf season.

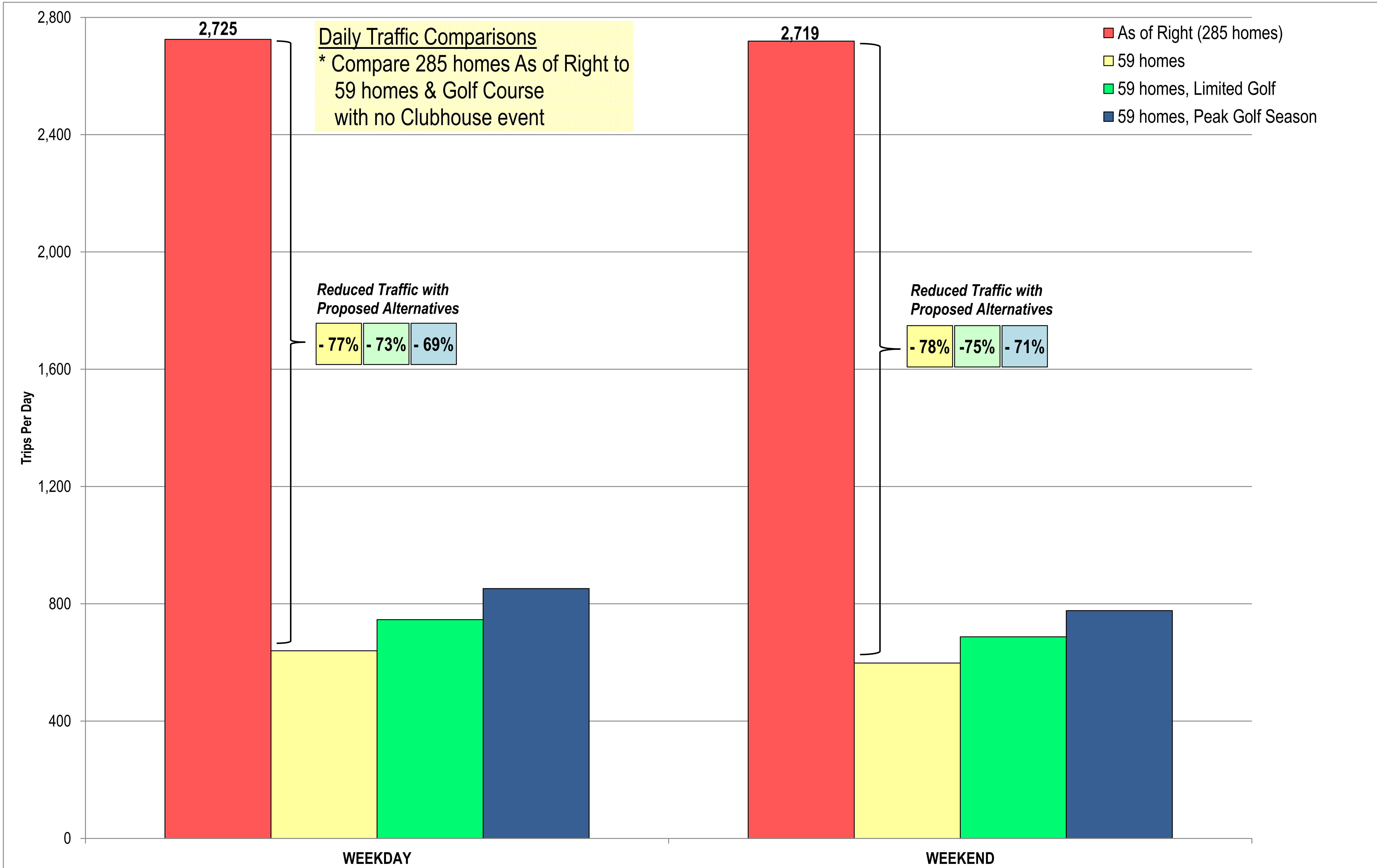
The As of Right scenario (285 residences) represents a much more dense land development, displacing hospitality/golf uses that are often dormant, with single-family homes that generate traffic throughout the day and year-round.

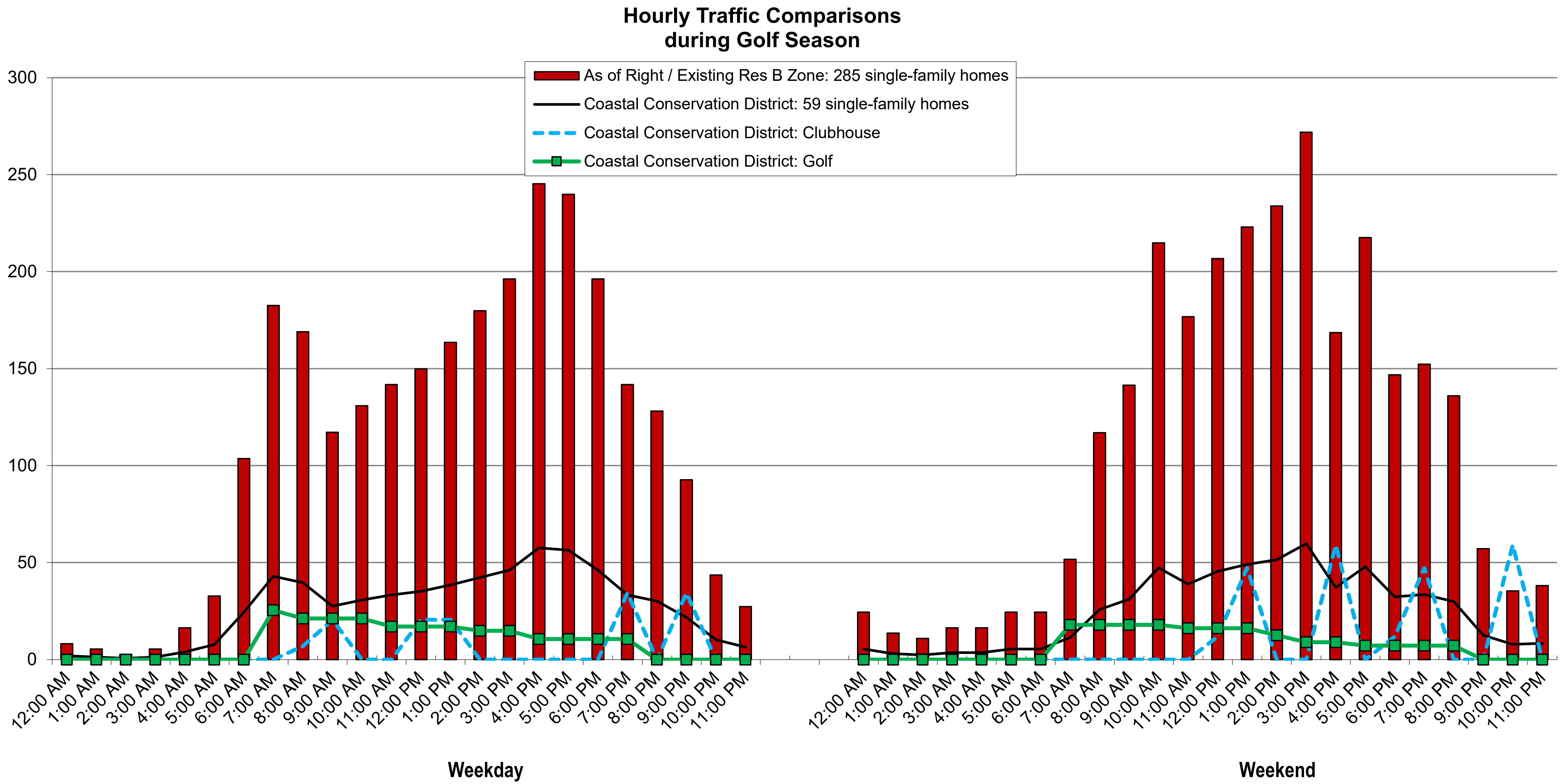
Because of the increased density of the As of Right scenario (285 residences), this scenario generates almost five times the traffic of the proposed zoning (59 residences and Clubhouse/golf use) – up to more than 2,000 additional vehicles per day, in fact. This would be almost a 20% increase in daily volume – a significant increase – on Broadway, a two-lane roadway.

The following charts depict the differences in daily (24-hour) site-generated traffic. Figure 6-1 represents total daily volumes.

Figure 6-2 and Figure 6-3 follow and present hourly traffic patterns[6].

[6] Hourly patterns incorporate Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)* data for single-family homes.


Daily Traffic Comparisons
* Compare 285 homes As of Right to
59 homes & Golf Course
with no Clubhouse event
2,725
2,719
Reduced Traffic with
Proposed Alternatives
- 77%
- 73%
- 69%
Reduced Traffic with
Proposed Alternatives
- 78%
-75%
- 71%
As of Right (285 homes)
59 homes
59 homes, Limited Golf
59 homes, Peak Golf Season
Trips Per Day
2,800
2,400
2,000
1,600
1,200
800
400
0
WEEKDAY
WEEKEND


Hourly Traffic Comparisons
during Golf Season
As of Right / Existing Res B Zone: 285 single-family homes
Coastal Conservation District: 59 single-family homes
Coastal Conservation District: Clubhouse
Coastal Conservation District: Golf
300
250
200
150
100
50
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
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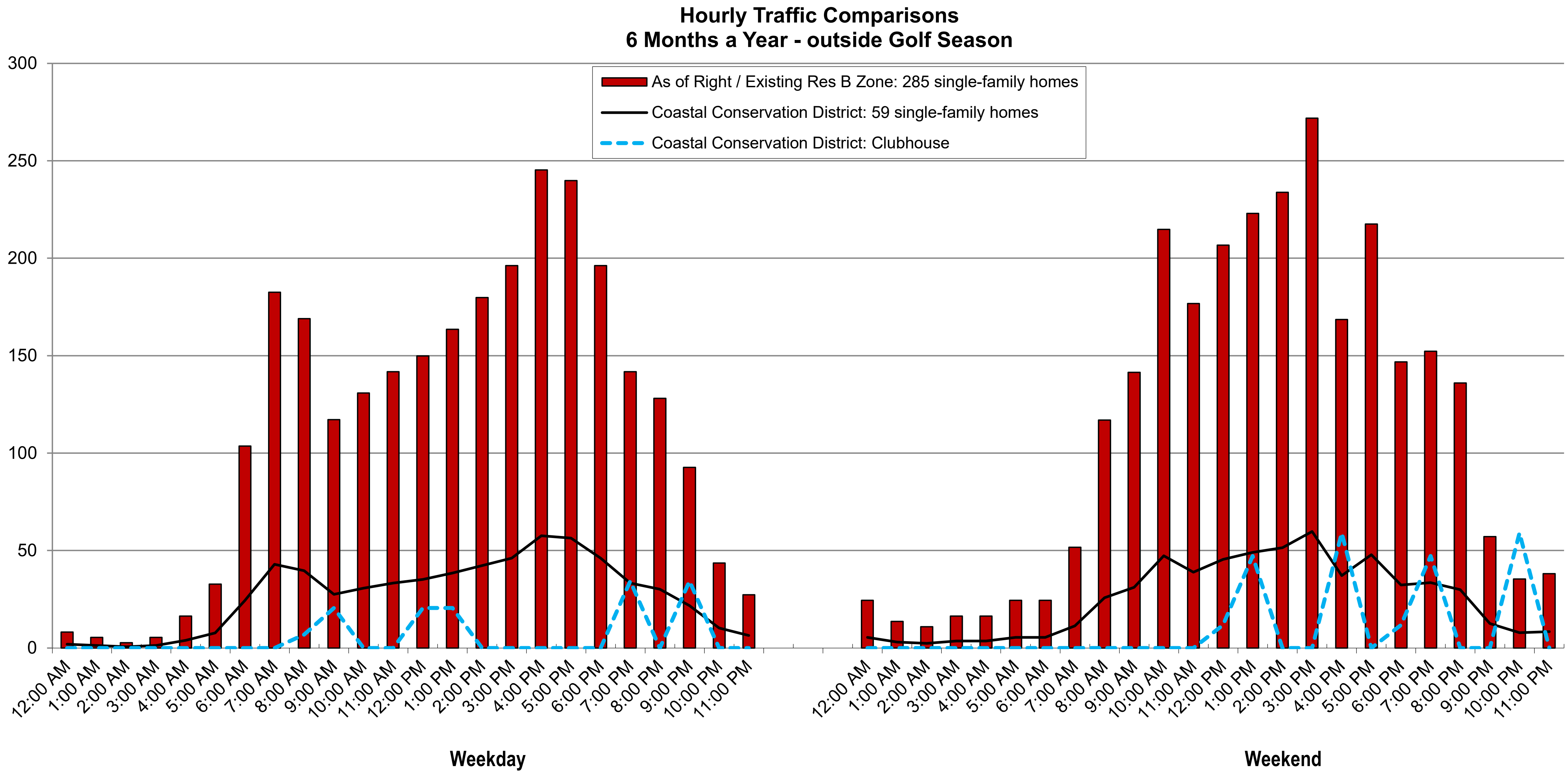
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Weekday
Weekend



Hourly Traffic Comparisons
6 Months a Year - outside Golf Season
As of Right / Existing Res B Zone: 285 single-family homes
Coastal Conservation District: 59 single-family homes
Coastal Conservation District: Clubhouse
300
250
200
150
100
50
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Weekday
Weekend

7. Summary and Conclusions

Three municipalities (the Town of Hempstead, the Village of Woodsburgh, and the Village of Lawrence) have entered into an Intermunicipal Agreement to further their agreement to develop a Coastal Conservation District for the Woodmere Club site. This traffic study considers three scenarios combining 59 single-family homes, hospitality, and golf (Scenarios A, B, and C) and compares them to an As-of-Right scenario as represented on the Willow View Estates Subdivision Plan.

1. The Woodmere Club is on the southwest corner of Broadway and Meadow Drive on ±118 acres comprising sections of Woodmere (in the Town of Hempstead) and the Villages of Woodsburgh and Lawrence.
2. The three scenarios are as follows:
   - **Scenario A:** 59 single-family homes
   - **Scenario B:** 59 single-family homes, and the Clubhouse with added hospitality use
   - **Scenario C:** 59 single-family homes, the Clubhouse, and a 9-hole golf course
3. The following key intersections were included in this report:
   a. Broadway at Meadow Drive
   b. Broadway at Pine Street
   c. Broadway at Woodmere Boulevard
   d. Broadway at Prospect Avenue
   e. Albro Lane at Atlantic Avenue
4. The peak hour periods for this study are the weekday AM period (between 7:00 and 9:00 a.m.), weekday PM period (between 4:00 and 6:00 p.m.), and the Sunday midday period (between 11:00 a.m. and 2:00 p.m.). In the Five Towns, Sunday is the busier weekend day. Future weekend conditions are described as the Weekend peak hour to reflect Sunday or Saturday.
5. The existing volumes were counted in November 2019 and adjusted to June (peak month) conditions based on New York State Department of Transportation data for similar Long Island suburban roadways.
6. The No Action condition is called the As-of-Right condition in this report because without the Proposed Action, the property owner intends to apply to subdivide and redevelop the site with 285 residences. The As-of-Right condition was projected by applying a 0.5% per year ambient growth rate, accounting for other planned projects in the area that may come online by 2022, and adding in the anticipated traffic from the Willow View Estates Subdivision Plan.
7. Scenarios A, B, and C (59 residences/hospitality/golf) were projected by applying the 0.5% per year ambient growth rate, accounting for other planned projects in the area, and adding in the anticipated traffic from each scenario.

8. The As-of-Right scenario (285 residences) would generate 45% to 78% more traffic during peak hours on a day-to-day basis, compared to any of the With-Action scenarios (59 residences with Clubhouse/golf use). Of note, Scenarios B and C reflect periodic peak activity that does not persist each day or throughout the year. The Clubhouse does not have events every day, and golf season is only about 6 months a year, of which 2 months have limited activity gearing up or down for the season.

	As-of-Right			Scenario A			Scenario B			Scenario C		
	285 single-family homes			59 single-family homes			59 single-family homes/Clubhouse			59 single-family homes/Clubhouse/golf		
	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend	AM	PM	Weekend
Enter	53	178	143	11	38	36	34	41	63	52	57	86
Exit	158	104	122	35	23	32	37	25	36	45	44	60
Total	211	282	265	46	61	68	71	66	99	97	101	146

9. The As-of-Right analysis considers the potential for Willow View Estates to have a new driveway on Broadway opposite Prospect Avenue, as well as no new driveway.
10. Scenarios A, B, and C do not require mitigation at any of the study intersections.
11. The Broadway/Prospect Avenue intersection would experience a noticeable difference in delay for southbound Prospect Avenue, and with a new driveway the northbound delays would be unacceptably high (over 360 seconds per vehicle, well within LOS F). As-of-Right development might require a traffic signal or other expansive traffic mitigation. Potential mitigation options would themselves impact existing traffic, e.g. a signal that introduces new stops on Broadway and/or street widening that removes existing on-street parking.
12. If 285 residences are built As of Right with no new driveway opposite Prospect Avenue, this would increase Meadow Drive delay by ±8 seconds during the weekday AM peak hour.
13. On a 24-hour basis, the As of Right Residence B zoning (285 residences) would generate traffic every day, throughout the day, and significantly more traffic at every time of day compared to development under the proposed Coastal Conservation District, which includes the Clubhouse and golf which often generate little to no traffic for extended periods of time. The 285 residences would generate almost five times as much traffic, or up to more than 2,000 additional vehicles per day compared to the proposed Coastal Conservation District (59 residences, Clubhouse/golf). The 285 residences would increase daily traffic volume on Broadway by almost 20%.
14. Based on the analyses and the conclusions herein, it is our professional opinion that the Proposed Action (full buildout under the proposed zoning, Scenarios A, B, or C) will not create off-site traffic impacts, whereas the As-of-Right scenario (existing Residence B zoning, 285 residences) will create significant adverse impacts at Broadway/Prospect Avenue and almost 80% more traffic during peak and off-peak hours. In fact, the anticipated 24-hour volume under As of Right Residence B zoning would increase traffic on Broadway by almost 20%.

APPENDIX A:
TRAFFIC COUNT DATA

Intersection Peak Hour Counts

1. Broadway at Meadow Drive
2. Broadway at Pine Street
3. Broadway at Woodmere Boulevard
4. Broadway at Prospect Avenue
5. Albro Lane at Atlantic Avenue

NYSDOT Roadway Counts (24-hour volumes)

These are the most recent publicly available NYSDOT counts in the area. They are included to demonstrate relative Saturday-Sunday volume and/or order-of-magnitude hourly and daily traffic.

1. Broadway
2. Meadow Drive
3. Woodmere Boulevard
4. Prospect Avenue
5. Keene Lane

Intersection Traffic Counts:

Sunday, November 17, 2019 from 11:00 a.m. to 2:00 p.m.
Tuesday, November 19, 2019 from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

1. Broadway at Meadow Drive
2. Broadway at Pine Street
3. Broadway at Woodmere Boulevard
4. Broadway at Prospect Avenue
5. Albro Lane at Atlantic Avenue

Study Name 1. BROADWAY AT MEADOW DRIVE TUES
Start Date 11-19-2019
Start Time 7:00 AM

	WESTBOUND		NORTHBOUND		EASTBOUND	
	BROADWAY		MEADOW DR		BROADWAY	
Start Time	Left	Thru	Left	Right	Thru	Right
7:00 AM	4	114	4	5	144	1
7:15 AM	2	153	1	2	139	7
7:30 AM	4	141	3	3	175	3
7:45 AM	3	155	8	2	164	4
8:00 AM	8	161	10	5	172	1
8:15 AM	4	159	4	2	186	2
8:30 AM	0	146	11	3	180	3
8:45 AM	4	138	6	4	177	1
4:00 PM	1	151	3	0	142	11
4:15 PM	0	147	9	4	129	16
4:30 PM	5	171	6	2	135	12
4:45 PM	1	172	8	2	143	13
5:00 PM	5	180	11	3	163	8
5:15 PM	5	144	6	4	154	8
5:30 PM	9	163	7	1	115	12
5:45 PM	3	164	7	2	155	3
HVs						
AM		8%	11%		7%	
PM		5%	5%		4%	

Shaded cells denote the start of each peak hour (e.g. 7:45 to 8:45 A.M. on Tuesday)

HVs = Heavy Vehicles as a percentage of the traffic count in each direction (northbound, southbound, eastbound, and westbound)

Study Name 1. BROADWAY AT MEADOW DRIVE SUN
Start Date 11-17-2019
Start Time 11:00 AM

	WESTBOUND		NORTHBOUND		EASTBOUND	
	BROADWAY		MEADOW DR		BROADWAY	
Start Time	Left	Thru	Left	Right	Thru	Right
11:00 AM	2	89	1	3	129	5
11:15 AM	5	100	1	1	156	8
11:30 AM	2	108	4	4	152	0
11:45 AM	7	133	5	5	171	6
12:00 PM	3	137	4	2	161	2
12:15 PM	3	109	7	3	132	6
12:30 PM	5	117	4	1	161	1
12:45 PM	5	133	7	4	157	6
1:00 PM	5	139	2	1	136	4
1:15 PM	5	119	4	4	137	1
1:30 PM	3	117	4	0	161	3
1:45 PM	4	111	10	5	156	4
HVs		0%	4%		0%	

Study Name **2. BROADWAY AT PINE STREET TUES**
Start Date **11-19-2019**
Start Time **7:00 AM**

	WESTBOUND		EASTBOUND		SOUTHBOUND	
	BROADWAY		BROADWAY		PINE ST	
Start Time	Thru	Right	Left	Thru	Left	Right
7:00 AM	116	2	1	145	0	0
7:15 AM	153	1	0	146	0	2
7:30 AM	143	1	1	178	0	5
7:45 AM	158	5	1	167	1	4
8:00 AM	170	1	0	173	0	6
8:15 AM	163	0	0	188	0	3
8:30 AM	157	0	2	183	0	2
8:45 AM	139	5	2	177	1	6
4:00 PM	154	0	6	152	1	2
4:15 PM	153	3	10	145	0	5
4:30 PM	177	0	10	147	0	6
4:45 PM	177	3	3	155	1	9
5:00 PM	191	0	4	170	1	3
5:15 PM	148	2	10	161	1	2
5:30 PM	167	3	10	127	0	3
5:45 PM	168	3	1	158	0	2
HVs						
AM	8%			7%		19%
PM	5%			4%		13%

Study Name **2. BROADWAY AT PINE STREET SUN**
Start Date **11-17-2019**
Start Time **11:00 AM**

	WESTBOUND		EASTBOUND		SOUTHBOUND	
	BROADWAY		BROADWAY		PINE ST	
Start Time	Thru	Right	Left	Thru	Left	Right
11:00 AM	90	0	2	129	0	6
11:15 AM	100	1	7	156	0	3
11:30 AM	110	2	4	152	1	3
11:45 AM	138	0	1	171	1	2
12:00 PM	141	0	1	161	0	1
12:15 PM	114	2	4	132	0	1
12:30 PM	120	1	2	161	0	5
12:45 PM	139	1	5	157	0	1
1:00 PM	140	1	3	136	0	5
1:15 PM	123	0	5	137	0	1
1:30 PM	119	2	2	161	0	3
1:45 PM	121	0	1	156	3	2
HVs	0%			0%		0%

Study Name 3. BROADWAY AT WOODMERE BLVD TUES
Start Date 11-19-2019
Start Time 7:00 AM

	WESTBOUND			NORTHBOUND			EASTBOUND			SOUTHBOUND		
	BROADWAY			WOODMERE BLVD			BROADWAY			WOODMERE BLVD		
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:00 AM	1	122	6	2	9	1	10	129	1	7	8	6
7:15 AM	1	131	13	6	15	0	4	122	2	6	5	9
7:30 AM	1	129	7	3	13	4	16	142	3	7	8	11
7:45 AM	2	129	11	17	25	3	9	144	11	22	15	23
8:00 AM	6	121	17	12	17	1	15	130	15	16	25	21
8:15 AM	5	124	9	16	21	2	12	145	14	11	27	13
8:30 AM	2	119	5	13	10	0	24	138	11	10	14	22
8:45 AM	5	114	12	22	24	6	17	137	16	13	16	17
4:00 PM	9	118	6	23	10	1	21	63	19	23	31	6
4:15 PM	6	106	14	20	14	4	15	76	21	29	39	12
4:30 PM	3	139	12	22	19	3	20	80	20	25	29	8
4:45 PM	1	157	9	20	16	1	14	83	29	26	34	2
5:00 PM	2	133	13	26	12	2	19	90	29	16	29	9
5:15 PM	3	120	12	23	17	2	17	74	32	19	44	9
5:30 PM	2	125	16	26	29	2	15	73	21	23	41	14
5:45 PM	5	132	9	27	14	1	28	87	23	22	30	10
HVs												
AM	10%			8%			7%			12%		
PM	4%			9%			3%			8%		

Study Name 3. BROADWAY AT WOODMERE BLVD SUN
Start Date 11-17-2019
Start Time 11:00 AM

	WESTBOUND			NORTHBOUND			EASTBOUND			SOUTHBOUND		
	BROADWAY			WOODMERE BLVD			BROADWAY			WOODMERE BLVD		
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11:00 AM	5	72	6	6	7	3	15	100	8	15	14	5
11:15 AM	4	82	9	11	8	5	7	127	2	14	13	10
11:30 AM	2	90	9	13	15	1	20	144	5	12	6	12
11:45 AM	4	113	10	14	15	0	20	137	7	14	17	16
12:00 PM	3	95	9	5	9	4	25	119	14	21	21	21
12:15 PM	3	90	13	7	14	4	9	120	6	19	12	12
12:30 PM	2	102	13	11	8	2	16	128	8	12	12	18
12:45 PM	2	107	20	9	12	1	27	114	6	18	15	17
1:00 PM	2	119	16	11	10	8	15	100	11	15	17	17
1:15 PM	0	94	12	9	6	4	19	106	8	24	17	20
1:30 PM	2	94	12	7	11	1	12	131	12	10	11	17
1:45 PM	7	99	13	3	8	2	17	132	13	14	14	21
HVs	2%			0%			0%			2%		

Study Name **4. BROADWAY AT PROSPECT AVENUE TUES**
Start Date **11-19-2019**
Start Time **7:00 AM**

	WESTBOUND			EASTBOUND			SOUTHBOUND		
	BROADWAY			BROADWAY			PROSPECT AVE		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
7:00 AM	114	1	0	6	137	0	3	7	0
7:15 AM	160	0	0	5	144	0	2	5	0
7:30 AM	154	2	0	13	179	0	3	7	0
7:45 AM	161	6	0	25	170	0	6	8	0
8:00 AM	177	6	0	21	162	0	3	17	0
8:15 AM	164	3	0	19	186	0	4	11	0
8:30 AM	157	4	0	16	201	0	8	12	0
8:45 AM	154	3	0	14	183	0	3	14	0
4:00 PM	148	9	0	23	185	0	8	10	0
4:15 PM	162	3	0	23	170	0	7	12	0
4:30 PM	174	8	0	14	177	0	14	15	0
4:45 PM	177	10	0	30	142	0	7	14	0
5:00 PM	188	10	0	18	173	0	16	9	0
5:15 PM	148	8	0	14	195	0	7	15	0
5:30 PM	165	9	0	16	149	0	9	14	0
5:45 PM	170	6	0	22	151	0	6	21	0
HVs									
AM	8%			6%			19%		
PM	6%			4%			7%		

Study Name **4. BROADWAY AT PROPECT AVENUE SUN**
Start Date **11-17-2019**
Start Time **11:00 AM**

	WESTBOUND			EASTBOUND			SOUTHBOUND		
	BROADWAY			BROADWAY			PROSPECT AVE		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
11:00 AM	89	4	0	27	123	0	8	10	1
11:15 AM	97	5	0	23	164	0	2	9	0
11:30 AM	100	9	0	17	148	0	6	17	0
11:45 AM	140	5	0	23	177	0	6	20	0
12:00 PM	140	3	0	18	160	0	4	19	0
12:15 PM	112	6	0	11	131	0	8	12	0
12:30 PM	116	8	0	19	168	0	6	13	0
12:45 PM	132	8	0	17	167	0	9	15	0
1:00 PM	143	6	0	17	123	0	7	15	0
1:15 PM	111	9	0	17	142	0	6	10	0
1:30 PM	117	8	0	15	168	0	4	15	0
1:45 PM	123	1	0	16	155	0	5	12	1
HVs	1%			1%			1%		

Study Name **5. ALBRO LANE AT ATLANTIC AVENUE TUES**
Start Date **11-19-2019**
Start Time **7:00 AM**

	ATLANTIC AVE Westbound			ABRO LN Northbound			ATLANTIC AVE Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
7:00 AM	3	3	0	2	2	0	0	0	0
7:15 AM	0	3	0	1	0	0	0	0	0
7:30 AM	1	4	0	0	0	0	1	0	0
7:45 AM	0	11	0	2	0	0	0	1	0
8:00 AM	6	11	0	0	0	0	1	0	0
8:15 AM	1	3	0	0	0	0	0	1	0
8:30 AM	0	14	0	2	0	0	1	2	0
8:45 AM	0	11	0	1	0	0	2	0	0
4:00 PM	2	18	0	1	1	0	0	0	0
4:15 PM	3	13	0	2	2	0	0	0	0
4:30 PM	5	21	0	3	0	0	0	1	0
4:45 PM	0	18	0	1	1	0	0	0	0
5:00 PM	2	21	0	0	0	0	2	0	0
5:15 PM	2	12	0	2	0	0	1	0	0
5:30 PM	2	22	0	0	1	0	0	0	0
5:45 PM	1	20	0	1	1	0	0	1	0
HVs									
AM	9%			25%			50%		
PM	4%			22%			0%		

Study Name **5. ALBRO LANE AT ATLANTIC AVENUE SUN**
Start Date **11-17-2019**
Start Time **11:00 AM**

	ATLANTIC AVE Westbound			ALBRO LN Northbound			ATLANTIC AVE Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
11:00 AM	0	7	0	0	1	0	0	1	0
11:15 AM	3	5	0	1	0	0	0	0	0
11:30 AM	1	2	0	0	0	0	1	0	0
11:45 AM	1	3	0	1	0	0	0	1	0
12:00 PM	2	4	0	1	0	0	0	0	0
12:15 PM	2	11	0	1	0	0	0	2	0
12:30 PM	1	6	0	4	0	0	0	0	0
12:45 PM	2	10	0	1	2	0	1	0	0
1:00 PM	3	6	0	1	0	0	0	1	0
1:15 PM	3	5	0	3	2	0	0	0	0
1:30 PM	1	3	0	0	0	0	0	1	0
1:45 PM	2	7	0	1	1	0	1	0	0
HVs	0%			0%			0%		

New York State Department of Transportation Roadway Counts
(24-hour Volumes)

These are the most recent publicly available NYSDOT counts in the area. They are included to demonstrate relative Saturday-Sunday volume and/or order-of-magnitude hourly and daily traffic.

1. Broadway
2. Meadow Drive
3. Woodmere Boulevard
4. Prospect Avenue
5. Keene Lane

STATION: **038604**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR C220** ROAD NAME: **BROADWAY** FROM: **PROSPECT AVE** TO: **WOODMERE BLVD** COUNTY: **Nassau**
DIRECTION: Eastbound FACTOR GROUP: 30 REC. SERIAL #: 0249 FUNC. CLASS: 16 VILLAGE: **WOODSBURGH**
STATE DIR CODE: 1 WK OF YR: 29 PLACEMENT: bet Prospect & Elm NHS: no LION#:
DATE OF COUNT: 07/20/2011 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: WW 30 ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: DOT-R10WW30 HPMS SAMPLE:

COUNT TAKEN BY: ORG CODE: TTG INITIALS: RB PROCESSED BY: ORG CODE: DOT INITIALS: MLA

DATE	DAY	AM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	PM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T																											
13	W																											
14	T																											
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																		**767**	**595**	**483**	**390**	**291**	**221**	**145**			
21	T	**89**	**28**	**16**	**14**	**34**	**105**	**228**	**490**	**587**	**598**	**491**	**497**	**503**	**478**	**536**	**715**	**818**	**716**	**632**	**521**	**409**	**355**	**253**	**174**	9287	818	16
22	F	**80**	**43**	**18**	**17**	**41**	**90**	**238**	**500**	**682**	**620**	**581**	**560**	**530**	**587**	**520**	**693**	**750**	**656**	**578**	**413**	**256**	**231**	**188**	**135**	9007	750	16
23	S	**70**	**46**	**24**	**21**	**34**	**49**	**112**	**234**	**229**	**276**	**303**	**294**	**313**	**334**	**339**	**407**	**419**	**432**	**391**	**343**	**341**	**342**	**386**	**267**	6006	432	17
24	S	**200**	**83**	**53**	**28**	**23**	**47**	**100**	**171**	**235**	**329**	**397**	**440**	**445**	**460**	**486**	**500**	**530**	**614**	**467**	**488**	**439**	**306**	**158**	**108**	7107	614	17
25	M	**52**	**28**	**9**	**10**	**35**	**94**	**226**	**489**	**583**	**571**	**475**	**535**	**465**	**496**	**545**	**696**	**701**	**589**	**516**	**431**	**294**	**202**	**162**	**112**	8316	701	16
26	T	**56**	**26**	**13**	**14**	**29**	**96**	**229**	**481**	**568**	**647**	**478**	**544**	**491**	**545**	**498**	**656**	**810**	**717**	**641**	**478**	**353**	**260**	**168**	**118**	8916	810	16
27	W	**67**	**19**	**22**	**12**	**27**	**112**	**235**	**485**	**613**	**578**	**498**	**541**	**530**	**519**	**526**	**682**	**835**	**760**	**664**	**577**	**446**	**315**	**201**	**135**	9399	835	16
28	T	**60**	**32**	**32**	**13**	**34**	**95**	**234**	**508**	**580**	**571**	**580**	**545**															
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
70	**30**	**20**	**14**	**33**	**100**	**232**	**492**	**602**	**598**	**517**	**537**	**497**	**510**	**526**	**687**	**791**	**710**	**610**	**498**	**378**	**285**	**201**	**137**	**9075**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
9	187	6	121	791	9%	1.000	1.100

ESTIMATED (one way)

AADT
8250

STATION: **038604**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR C220** ROAD NAME: **BROADWAY**
FROM: **PROSPECT AVE** TO: **WOODMERE BLVD** COUNTY: **Nassau**
DIRECTION: Westbound FACTOR GROUP: 30
REC. SERIAL #: 1960 FUNC. CLASS: 16 VILLAGE: **WOODSBURGH**
STATE DIR CODE: 2 WK OF YR: 29
PLACEMENT: Bet Prospect & Elm NHS: no LION#:
DATE OF COUNT: 07/20/2011
@ REF MARKER: JURIS: County BIN:
NOTES LANE 1: WW 30
ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: DOT-R10WW30 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: TTG INITIALS: RB
PROCESSED BY: ORG CODE: DOT INITIALS: MLA

DATE	DAY	12 TO 1 (AM)	1 TO 2 (AM)	2 TO 3 (AM)	3 TO 4 (AM)	4 TO 5 (AM)	5 TO 6 (AM)	6 TO 7 (AM)	7 TO 8 (AM)	8 TO 9 (AM)	9 TO 10 (AM)	10 TO 11 (AM)	11 TO 12 (AM)	12 TO 1 (PM)	1 TO 2 (PM)	2 TO 3 (PM)	3 TO 4 (PM)	4 TO 5 (PM)	5 TO 6 (PM)	6 TO 7 (PM)	7 TO 8 (PM)	8 TO 9 (PM)	9 TO 10 (PM)	10 TO 11 (PM)	11 TO 12 (PM)	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T																											
13	W																											
14	T																											
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																		**558**	**519**	**462**	**349**	**295**	**223**	**122**			
21	T	**72**	**33**	**18**	**13**	**21**	**60**	**218**	**377**	**458**	**524**	**459**	**492**	**556**	**498**	**488**	**514**	**539**	**574**	**600**	**446**	**362**	**323**	**220**	**131**	7996	600	18
22	F	**66**	**35**	**31**	**11**	**25**	**54**	**211**	**355**	**480**	**478**	**448**	**482**	**520**	**549**	**543**	**518**	**540**	**555**	**505**	**350**	**211**	**197**	**166**	**120**	7450	555	17
23	S	**76**	**43**	**23**	**23**	**23**	**36**	**88**	**153**	**240**	**285**	**365**	**425**	**507**	**388**	**353**	**281**	**277**	**250**	**291**	**297**	**184**	**243**	**286**	**224**	5361	507	12
24	S	**150**	**76**	**44**	**33**	**20**	**31**	**125**	**196**	**251**	**317**	**347**	**508**	**567**	**487**	**458**	**415**	**391**	**333**	**334**	**281**	**271**	**234**	**143**	**106**	6118	567	12
25	M	**52**	**24**	**12**	**7**	**26**	**62**	**186**	**334**	**466**	**489**	**475**	**463**	**446**	**448**	**467**	**483**	**491**	**533**	**509**	**446**	**316**	**276**	**186**	**99**	7296	533	17
26	T	**42**	**26**	**16**	**11**	**24**	**58**	**203**	**377**	**485**	**555**	**462**	**497**	**509**	**490**	**511**	**505**	**502**	**570**	**545**	**412**	**328**	**268**	**180**	**133**	7709	570	17
27	W	**49**	**34**	**24**	**7**	**31**	**70**	**213**	**390**	**497**	**510**	**487**	**498**	**546**	**551**	**490**	**495**	**492**	**563**	**550**	**452**	**385**	**292**	**222**	**138**	7986	563	17
28	T	**68**	**26**	**35**	**13**	**24**	**72**	**217**	**352**	**530**	**514**	**509**	**507**															
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	ADT
59	**31**	**25**	**11**	**25**	**63**	**208**	**364**	**486**	**512**	**473**	**490**	**514**	**497**	**489**	**499**	**506**	**560**	**545**	**444**	**348**	**291**	**206**	**125**	**7771**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
9	187	6	121	560	7%	1.000	1.100

ESTIMATED (one way)

AADT

7065

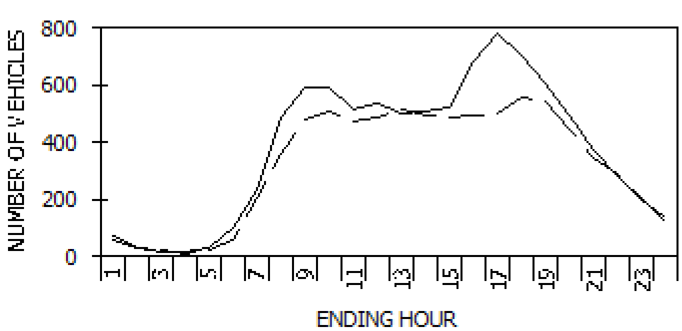
New York State Department of Transportation
Classification Count Average Weekday Data Report

ROAD #:	CR C220	ROAD NAME: BROADWAY	YEAR: 2011	STATION:	038604
COUNTY NAME:	Nassau		MONTH: July		
REGION CODE:	0				
FROM:	PROSPECT AVE				
TO:	WOODMERE BLVD				
REF-MARKER:					
END MILEPOINT:	0110237	NO. OF LANES: 2			
FUNC-CLASS:	16	HPMS NO:			
STATION NO:	8604	LION#:			
COUNT TAKEN BY:	ORG CODE: TTG INITIALS: RB				
PROCESSED BY:	ORG CODE: DOT INITIALS: MLA	BATCH ID: DOT-R10WW30			

DIRECTION	East	West	TOTAL
NUMBER OF VEHICLES	**9019**	**7739**	**16758**
NUMBER OF AXLES	**18125**	**15535**	**33660**
% HEAVY VEHICLES (F4-F13)	**1.71%**	**1.20%**	**1.47%**
% TRUCKS AND BUSES (F3-F13)	**12.57%**	**11.68%**	**12.16%**
AXLE CORRECTION FACTOR	**1.00**	**1.00**	**1.00**

	VEHICLE CLASS	**F1**	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**	**F9**	**F10**	**F11**	**F12**	**F13**	**TOTAL**
	NO. OF AXLES	2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	1	65	3	1	0	0	0	0	0	0	0	0	0	**70**
	2:00	0	27	2	0	0	0	0	0	0	0	0	0	0	**29**
	3:00	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
	4:00	0	9	4	0	0	1	0	0	0	0	0	0	0	**14**
	5:00	0	28	4	0	0	1	0	0	0	0	0	0	0	**33**
	6:00	0	84	12	1	1	0	0	0	0	0	0	0	0	**98**
	7:00	1	206	21	1	1	1	0	0	0	0	0	0	0	**231**
	8:00	1	416	59	4	5	1	0	2	1	0	0	0	0	**489**
	9:00	1	486	80	12	8	2	0	2	1	0	0	0	0	**592**
	10:00	0	504	75	4	6	3	0	1	0	0	0	0	0	**593**
DIRECTION	11:00	1	431	70	4	5	2	0	1	0	0	0	0	0	**514**
East	12:00	0	446	76	5	4	3	0	1	0	0	0	0	0	**535**
	13:00	0	421	69	3	4	0	0	0	1	0	0	0	0	**498**
	14:00	1	427	67	3	3	2	0	1	1	0	0	0	0	**505**
	15:00	2	447	64	2	6	2	0	1	1	0	0	0	0	**525**
	16:00	2	588	83	3	4	3	0	1	0	0	0	0	0	**684**
	17:00	2	683	87	6	4	1	0	2	0	0	0	0	0	**785**
	18:00	1	632	69	1	2	1	0	1	0	0	0	0	0	**707**
	19:00	2	557	44	1	2	1	0	1	0	0	0	0	0	**608**
	20:00	1	461	32	0	1	0	0	0	0	0	0	0	0	**495**
	21:00	0	351	23	0	1	0	0	0	0	0	0	0	0	**375**
	22:00	0	266	17	0	0	0	0	0	0	0	0	0	0	**283**
	23:00	0	188	10	1	1	0	0	0	0	0	0	0	0	**200**
	24:00	1	127	7	0	0	0	0	1	0	0	0	0	0	**136**
	TOTAL VEHICLES	**17**	**7868**	**980**	**52**	**58**	**24**	**0**	**15**	**5**	**0**	**0**	**0**	**0**	**9019**
	TOTAL AXLES	34	15736	1960	130	116	72	0	52	25	0	0	0	0	18125
	1:00	0	57	2	0	0	0	0	0	0	0	0	0	0	**59**
ENDING HOUR	2:00	0	30	1	0	0	0	0	0	0	0	0	0	0	**31**
	3:00	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
	4:00	0	10	0	0	0	0	0	0	0	0	0	0	0	**10**
	5:00	0	23	1	0	0	0	0	0	0	0	0	0	0	**24**
	6:00	0	53	6	2	0	0	0	0	1	0	0	0	0	**62**
	7:00	0	174	30	1	1	1	0	0	0	0	0	0	0	**207**
	8:00	0	292	60	2	3	2	0	1	1	0	0	0	0	**361**
	9:00	1	380	85	9	4	2	0	2	0	0	0	0	0	**483**
	10:00	1	429	70	2	5	2	0	0	1	0	0	0	0	**510**
	11:00	1	404	60	3	3	1	0	1	1	0	0	0	0	**474**
DIRECTION	12:00	1	419	61	2	3	2	0	0	0	0	0	0	0	**488**
West	13:00	0	453	56	2	2	1	0	0	0	0	0	0	0	**514**
	14:00	0	426	61	2	2	2	0	1	1	0	0	0	0	**495**
	15:00	0	426	56	2	2	1	0	0	0	0	0	0	0	**487**
	16:00	0	428	62	5	1	0	0	0	0	0	0	0	0	**496**
	17:00	0	444	53	3	3	1	0	0	0	0	0	0	0	**504**
	18:00	1	508	46	1	1	1	0	0	0	0	0	0	0	**558**
	19:00	0	508	35	0	0	0	0	0	0	0	0	0	0	**543**
	20:00	0	417	25	0	1	0	0	0	0	0	0	0	0	**443**
	21:00	0	330	17	0	0	0	0	0	0	0	0	0	0	**347**
	22:00	0	279	10	0	0	0	0	0	0	0	0	0	0	**289**
	23:00	0	198	8	0	0	0	0	0	0	0	0	0	0	**206**
	24:00	0	119	5	0	0	0	0	0	0	0	0	0	0	**124**
	TOTAL VEHICLES	**5**	**6830**	**811**	**36**	**31**	**16**	**0**	**5**	**5**	**0**	**0**	**0**	**0**	**7739**
	TOTAL AXLES	10	13660	1622	90	62	48	0	18	25	0	0	0	0	15535
	GRAND TOTAL VEHICLES	**22**	**14698**	**1791**	**88**	**89**	**40**	**0**	**20**	**10**	**0**	**0**	**0**	**0**	**16758**
	GRAND TOTAL AXLES	44	29396	3582	220	178	120	0	70	50	0	0	0	0	33660

TRAFFIC FLOW BY DIRECTION



--- East - -West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
East	**17**	**785**	**A.M.**	**10**	**1103**
West	**18**	**558**	**P.M.**	**17**	**1289**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

New York State Department of Transportation
Speed Count Average Weekday Report

Station:	038604	Start date:	Wed 07/20/2011 17:00
Road #:	CR C220 Road name: BROADWAY	End date:	Thu 07/28/2011 12:45
From:	PROSPECT AVE	County:	Nassau
To:	WOODMERE BLVD	Town:	WOODSBURGH
Direction:	East	Speed limit:	30
		LION#:	

Count duration:	188 hours
Functional class:	16
Factor group:	30
Batch ID:	DOT-R10WW30
Count taken by:	Org: TTG Init: RB
Processed by:	Org: DOT Init: MLA

Counts have been summarized into NYSDOT EI standard bins

Speeds, mph

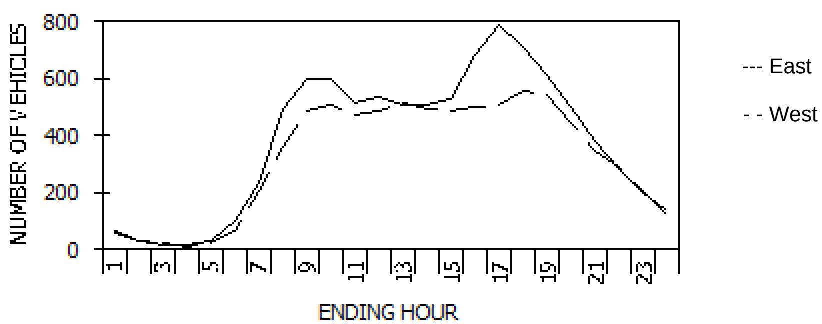
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	1	4	17	25	16	4	2	0	0	0	0	0	8.7	2.9	0.0	0.0	0.0	36.7	37.6	43.7	69
2:00	0	1	2	7	10	5	2	2	0	0	0	0	0	13.8	6.9	0.0	0.0	0.0	36.4	37.3	44.7	29
3:00	0	0	1	4	4	5	1	2	0	0	0	0	0	17.6	11.8	0.0	0.0	0.0	38.4	39.4	47.3	17
4:00	0	0	1	2	4	4	3	1	0	0	0	0	0	26.7	6.7	0.0	0.0	0.0	39.4	40.7	48.0	15
5:00	0	0	0	4	13	9	4	1	0	0	0	0	0	16.1	3.2	0.0	0.0	0.0	39.5	39.5	45.5	31
6:00	0	0	2	13	37	29	13	5	1	0	0	0	0	19.0	6.0	1.0	0.0	0.0	39.6	39.8	46.6	100
7:00	1	0	8	44	87	63	21	6	0	1	0	0	0	12.1	3.0	0.4	0.4	0.0	37.9	38.6	44.5	231
8:00	4	11	47	177	181	56	14	2	1	0	0	0	0	3.4	0.6	0.2	0.0	0.0	34.1	35.3	40.0	493
9:00	12	23	120	259	158	26	3	1	0	0	0	0	0	0.7	0.2	0.0	0.0	0.0	31.4	32.9	38.1	602
10:00	8	24	120	265	150	26	3	0	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	31.6	32.8	38.0	596
11:00	3	9	90	248	133	31	3	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	32.6	33.2	38.4	517
12:00	9	22	124	230	121	28	3	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	31.2	32.5	38.0	537
13:00	7	15	92	206	145	35	4	1	0	0	0	0	0	1.0	0.2	0.0	0.0	0.0	32.2	33.4	38.8	505
14:00	5	13	96	212	142	35	5	0	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	32.4	33.4	38.8	508
15:00	6	16	99	226	142	31	6	0	0	0	0	0	0	1.1	0.0	0.0	0.0	0.0	32.2	33.2	38.6	526
16:00	10	32	181	301	135	24	4	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	30.9	32.1	37.3	687
17:00	22	46	250	313	136	23	2	0	0	0	0	0	0	0.3	0.0	0.0	0.0	0.0	29.7	31.3	36.6	792
18:00	14	28	168	302	167	27	4	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	31.0	32.5	37.8	710
19:00	8	20	93	275	170	38	5	1	0	0	0	0	0	1.0	0.2	0.0	0.0	0.0	32.3	33.4	38.7	610
20:00	9	17	76	206	146	37	6	1	0	0	0	0	0	1.4	0.2	0.0	0.0	0.0	32.2	33.6	39.0	498
21:00	3	7	43	155	135	31	4	1	0	0	0	0	0	1.3	0.3	0.0	0.0	0.0	33.5	34.5	39.3	379
22:00	2	3	40	128	87	21	4	1	0	0	0	0	0	1.7	0.3	0.0	0.0	0.0	33.3	33.9	39.1	286
23:00	1	3	16	70	78	24	5	2	1	0	0	0	0	4.0	1.5	0.5	0.0	0.0	34.8	35.7	40.5	200
24:00	1	1	7	43	52	25	5	2	1	0	0	0	0	5.8	2.2	0.7	0.0	0.0	35.7	36.6	42.5	137
Avg. Daily Total	125	292	1680	3707	2458	649	128	31	4	1	0	0	0	1.8	0.4	0.1	0.0	0.0	32.2	33.3	38.9	9075
Percent	1.4%	3.2%	18.5%	40.8%	27.1%	7.2%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	1.4%	4.6%	23.1%	64.0%	91.0%	98.2%	99.6%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	5	12	70	154	102	27	5	1	0	0	0	0	0									378

	Avg. Speed	50th% Speed	85th% Speed
East	32.2	33.3	38.9
West	32.4	33.7	39.1

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	17	792	A.M.	10	1106
West	18	560	P.M.	17	1297

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation
Speed Count Average Weekday Report

Station:	038604	Start date:	Wed 07/20/2011 17:00	Count duration:	188 hours
Road #:	CR C220 Road name: BROADWAY	End date:	Thu 07/28/2011 12:45	Functional class:	16
From:	PROSPECT AVE	County:	Nassau	Factor group:	30
To:	WOODMERE BLVD	Town:	WOODSBURGH	Batch ID:	DOT-R10WW30
Direction:	West	Speed limit:	30	Count taken by:	Org: TTG Init: RB
		LION#:		Processed by:	Org: DOT Init: MLA

Counts have been summarized into NYSDOT EI standard bins

Speeds, mph

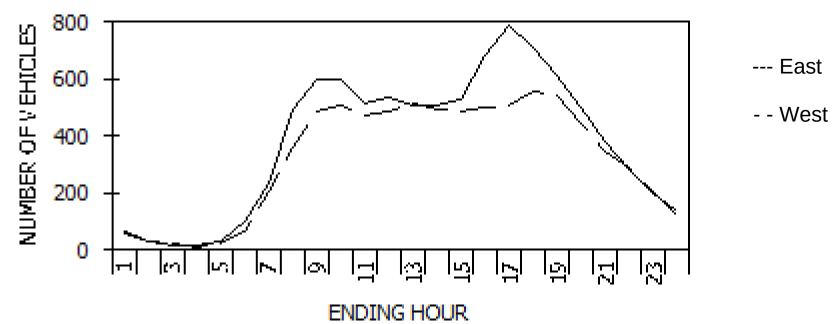
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	1	0	5	18	22	10	3	1	0	0	0	0	0	6.7	1.7	0.0	0.0	0.0	35.0	36.4	42.6	60
2:00	0	1	2	5	12	7	3	1	0	0	0	0	0	12.9	3.2	0.0	0.0	0.0	37.0	38.2	44.6	31
3:00	0	0	1	4	9	6	3	1	0	0	0	0	0	16.7	4.2	0.0	0.0	0.0	38.5	38.9	45.7	24
4:00	0	0	0	2	4	3	1	0	0	0	0	0	0	10.0	0.0	0.0	0.0	0.0	38.5	38.8	44.2	10
5:00	0	0	1	5	6	8	3	1	0	0	0	0	0	16.7	4.2	0.0	0.0	0.0	38.7	40.0	45.7	24
6:00	0	0	2	10	17	20	10	3	1	0	0	0	0	22.2	6.3	1.6	0.0	0.0	39.6	40.7	47.3	63
7:00	1	1	4	34	86	62	16	4	1	0	0	0	0	10.0	2.4	0.5	0.0	0.0	38.0	38.8	44.2	209
8:00	4	6	41	132	132	42	6	1	0	0	0	0	0	1.9	0.3	0.0	0.0	0.0	33.8	35.0	39.8	364
9:00	22	14	86	216	122	24	3	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	30.6	32.9	38.2	487
10:00	9	9	76	251	133	30	2	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	32.2	33.3	38.4	510
11:00	12	10	69	211	136	32	3	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	32.0	33.5	38.7	473
12:00	10	14	86	218	126	32	3	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	31.8	33.1	38.5	489
13:00	11	6	77	215	166	36	3	1	0	0	0	0	0	0.8	0.2	0.0	0.0	0.0	32.5	33.9	38.9	515
14:00	9	12	90	220	135	26	4	1	0	0	0	0	0	1.0	0.2	0.0	0.0	0.0	31.9	33.2	38.4	497
15:00	8	10	90	216	136	27	2	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	32.0	33.2	38.4	489
16:00	8	11	86	224	135	31	4	0	0	0	0	0	0	0.8	0.0	0.0	0.0	0.0	32.1	33.3	38.6	499
17:00	18	13	108	216	123	23	4	0	0	0	0	0	0	0.8	0.0	0.0	0.0	0.0	30.8	32.7	38.1	505
18:00	12	11	90	248	158	34	6	1	0	0	0	0	0	1.3	0.2	0.0	0.0	0.0	32.1	33.4	38.7	560
19:00	10	10	90	236	159	36	4	0	0	0	0	0	0	0.7	0.0	0.0	0.0	0.0	32.2	33.5	38.7	545
20:00	7	5	60	193	142	31	5	1	0	0	0	0	0	1.4	0.2	0.0	0.0	0.0	32.9	33.9	39.0	444
21:00	5	6	51	152	106	23	4	1	0	0	0	0	0	1.4	0.3	0.0	0.0	0.0	32.7	33.7	38.9	348
22:00	3	4	51	134	80	15	2	0	0	0	0	0	0	0.7	0.0	0.0	0.0	0.0	32.4	33.3	38.4	289
23:00	4	2	17	76	81	21	4	1	0	0	0	0	0	2.4	0.5	0.0	0.0	0.0	33.8	35.3	39.7	206
24:00	2	2	7	41	44	22	4	1	0	0	0	0	0	4.1	0.8	0.0	0.0	0.0	34.7	36.1	42.0	123
Avg. Daily Total	156	147	1190	3277	2270	601	102	19	2	0	0	0	0	1.6	0.3	0.0	0.0	0.0	32.4	33.7	39.1	7764
Percent	2.0%	1.9%	15.3%	42.2%	29.2%	7.7%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	2.0%	3.9%	19.2%	61.4%	90.7%	98.4%	99.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	6	6	50	137	95	25	4	1	0	0	0	0	0									324

	Avg. Speed	50th% Speed	85th% Speed
East	32.2	33.3	38.9
West	32.4	33.7	39.1

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	17	792	A.M.	10	1106
West	18	560	P.M.	17	1297

TRAFFIC FLOW BY DIRECTION



New York State Department of Transportation
Traffic Count Hourly Report

ROAD #:	ROAD NAME: **MEADOW DRIVE**	FROM: **BROADWAY**	TO: **KEEN LANE**
DIRECTION: Northbound	FACTOR GROUP: 30	REC. SERIAL #: EB24	FUNC. CLASS: 16
STATE DIR CODE: 6	WK OF YR: 8	PLACEMENT: 65 FT NORTH OF PORTER PL	NHS: no
DATE OF COUNT: 02/15/2016		@ REF MARKER:	JURIS: County
NOTES LANE 1: North		ADDL DATA:	CC Stn:
		COUNT TYPE: AXLE PAIRS	BATCH ID: DOT-R10V08cTTG5196
COUNT TAKEN BY: ORG CODE: TTG INITIALS: j		PROCESSED BY: ORG CODE: R10 INITIALS: afa	

COUNTY: **Nassau**
VILLAGE:
LION#:
BIN:
RR CROSSING:
HPMS SAMPLE:

DATE	DAY	AM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	PM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	M																											
2	T																											
3	W																											
4	T																											
5	F																											
6	S																											
7	S																											
8	M																											
9	T																											
10	W																											
11	T																											
12	F																											
13	S																											
14	S																											
15	M										**28**	**26**	**22**	**23**	**24**	**19**	**22**	**16**	**28**	**0**	**0**	**0**	**0**	**0**	**0**			
16	T	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**37**	**28**	**14**	**15**	**20**	**12**	**10**	**23**	**33**	**18**	**16**	**17**	**7**	**7**	**9**	**12**	281	37	8
17	W	**0**	**0**	**1**	**1**	**2**	**3**	**9**	**22**	**34**	**26**	**23**	**22**	**18**	**24**	**22**	**21**	**28**	**25**	**18**	**19**	**12**	**4**	**5**	**1**	340	34	8
18	T	**1**	**0**	**2**	**0**	**0**	**6**	**14**	**23**	**31**	**26**	**21**	**17**	**13**	**14**	**18**	**21**	**29**	**20**	**19**	**16**	**16**	**11**	**5**	**3**	326	31	8
19	F	**1**	**1**	**1**	**0**	**0**	**3**	**9**	**20**	**32**	**21**																	
20	S																											
21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											
29	M																											
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)		**0**	**0**	**1**	**0**	**0**	**3**	**8**	**17**	**34**	**26**	**21**	**19**	**18**	**18**	**17**	**22**	**26**	**23**	**13**	**13**	**9**	**6**	**5**	**4**	**ADT 303**		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
5	97	5	97	34	11%	1.000	0.973

ESTIMATED

AADT
311

STATION: **031682**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: ROAD NAME: **MEADOW DRIVE** FROM: **BROADWAY** TO: **KEEN LANE** COUNTY: **Nassau**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: EB24 FUNC. CLASS: 16 VILLAGE:
STATE DIR CODE: 7 WK OF YR: 8 PLACEMENT: 65 FT NORTH OF PORTER PL NHS: no LION#:
DATE OF COUNT: 02/15/2016 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: South ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R10V08cTTG5196 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: TTG INITIALS: j PROCESSED BY: ORG CODE: R10 INITIALS: afa

DATE	DAY	12 TO 1 AM	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1 PM	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	M																											
2	T																											
3	W																											
4	T																											
5	F																											
6	S																											
7	S																											
8	M																											
9	T																											
10	W																											
11	T																											
12	F																											
13	S																											
14	S																											
15	M										**26**	**22**	**22**	**29**	**19**	**25**	**26**	**31**	**27**	**0**	**0**	**0**	**0**	**0**	**0**			
16	T	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**24**	**15**	**12**	**15**	**15**	**21**	**13**	**22**	**19**	**22**	**18**	**15**	**12**	**9**	**9**	**4**	249	24	8
17	W	**0**	**0**	**1**	**3**	**2**	**4**	**7**	**22**	**29**	**18**	**20**	**20**	**28**	**13**	**14**	**17**	**16**	**22**	**17**	**11**	**12**	**16**	**11**	**0**	303	29	8
18	T	**3**	**0**	**4**	**0**	**3**	**6**	**8**	**14**	**27**	**21**	**18**	**18**	**10**	**15**	**18**	**18**	**20**	**21**	**21**	**15**	**12**	**11**	**12**	**7**	302	27	8
19	F	**2**	**2**	**1**	**1**	**2**	**2**	**5**	**18**	**34**	**24**																	
20	S																											
21	S																											
22	M																											
23	T																											
24	W																											
25	T																											
26	F																											
27	S																											
28	S																											
29	M																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	ADT
1	**0**	**2**	**1**	**2**	**3**	**5**	**14**	**28**	**21**	**18**	**19**	**20**	**17**	**18**	**21**	**22**	**23**	**14**	**10**	**9**	**9**	**8**	**3**	**288**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
5	97	5	97	28	10%	1.000	0.973

ESTIMATED

AADT

296

STATION: **034205**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: ROAD NAME: **KEENE LANE** FROM: **WOODMERE BLVD** TO: **IVY HILL ROAD** COUNTY: **Nassau**
DIRECTION: Eastbound FACTOR GROUP: 30 REC. SERIAL #: EE01 FUNC. CLASS: 17 VILLAGE:
STATE DIR CODE: 3 WK OF YR: 3 PLACEMENT: 198ft E of Wood Ln NHS: no LION#:
DATE OF COUNT: 01/11/2016 @ REF MARKER: JURIS: County BIN:
NOTES LANE 1: East ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R10V03aTTG5196 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: SUF INITIALS: j PROCESSED BY: ORG CODE: DOT INITIALS: WW

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M											**17**	**18**	**5**	**9**	**21**	**13**	**24**	**11**	**10**	**4**	**9**	**6**	**3**	**1**			
12	T	**0**	**1**	**1**	**0**	**0**	**3**	**3**	**12**	**21**	**16**	**9**	**17**	**12**	**12**	**15**	**13**	**16**	**12**	**12**	**13**	**6**	**8**	**3**	**2**	207	21	8
13	W	**2**	**1**	**0**	**0**	**0**	**2**	**2**	**11**	**16**	**17**	**18**	**18**	**6**	**12**	**9**	**18**	**18**	**5**	**15**	**7**	**12**	**6**	**3**	**2**	200	18	10
14	T	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**12**	**28**	**11**	**12**																
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
1	**1**	**0**	**0**	**0**	**2**	**2**	**12**	**22**	**15**	**14**	**18**	**8**	**11**	**15**	**15**	**19**	**9**	**12**	**8**	**9**	**7**	**3**	**2**	**205**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	73	4	73	22	11%	0.991	0.941

ESTIMATED

AADT
218

STATION: **037373**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR CRE68** ROAD NAME: **WOODMERE BLVD** FROM: **BROADWAY** TO: **W BROADWAY** COUNTY: **Nassau**
DIRECTION: Northbound FACTOR GROUP: 30 REC. SERIAL #: JG84 FUNC. CLASS: 17 TOWN:
STATE DIR CODE: 6 WK OF YR: 50 PLACEMENT: 59FT S of Station Pl NHS: no LION#:
DATE OF COUNT: 12/08/2015 @ REF MARKER: JURIS: Village BIN:
NOTES LANE 1: North ADDL DATA: Class Speed CC Stn: RR CROSSING: 338373L
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R10 WW50e Class HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: TTG INITIALS: PN PROCESSED BY: ORG CODE: DOT INITIALS: JLB

DATE	DAY	AM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	PM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	W																											
3	T																											
4	F																											
5	S																											
6	S																											
7	M																											
8	T																					157	120	57	25			
9	W	21	4	3	2	6	33	81	194	289	254	186	168	218	188	207	293	334	234	260	195	164	100	61	25	3520	334	16
10	T	21	12	4	1	6	29	85	200	259	246	185	184	202	251	248	267	323	260	240	187	150	114	86	51	3611	323	16
11	F	22	7	4	2	10	35	73	178	282	253	210	234	268	332	339												
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F																											
19	S																											
20	S																											
21	M																											
22	T																											
23	W																											
24	T																											
25	F																											
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											
31	T																											
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)		21	8	4	2	7	32	80	191	277	251	194	195	210	220	228	280	328	247	250	191	157	111	68	34	ADT 3586		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor	ESTIMATED AADT
3	67	3	64	328	9%	1.000	0.986	3637

STATION: **037373**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR CRE68** ROAD NAME: **WOODMERE BLVD** FROM: **BROADWAY** TO: **W BROADWAY** COUNTY: **Nassau**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: JG16 FUNC. CLASS: 17 TOWN:
STATE DIR CODE: 7 WK OF YR: 50 PLACEMENT: 59FT S of Station Pl NHS: no LION#:
DATE OF COUNT: 12/08/2015 @ REF MARKER: JURIS: Village BIN:
NOTES LANE 1: South ADDL DATA: Class Speed CC Stn: RR CROSSING: 338373L
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-R10 WW50e Class HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: TTG INITIALS: PN PROCESSED BY: ORG CODE: DOT INITIALS: JLB

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	W																											
3	T																											
4	F																											
5	S																											
6	S																											
7	M																											
8	T																					**188**	**117**	**85**	**31**			
9	W	**14**	**9**	**2**	**2**	**5**	**13**	**66**	**276**	**374**	**296**	**220**	**235**	**238**	**224**	**236**	**314**	**286**	**268**	**298**	**240**	**190**	**149**	**88**	**38**	4081	374	8
10	T	**16**	**11**	**1**	**6**	**8**	**13**	**69**	**261**	**359**	**281**	**209**	**256**	**244**	**238**	**259**	**324**	**269**	**279**	**274**	**208**	**182**	**152**	**103**	**68**	4090	359	8
11	F	**31**	**16**	**6**	**2**	**2**	**18**	**61**	**259**	**356**	**321**	**301**	**282**	**311**	**333**	**310**												
12	S																											
13	S																											
14	M																											
15	T																											
16	W																											
17	T																											
18	F																											
19	S																											
20	S																											
21	M																											
22	T																											
23	W																											
24	T																											
25	F																											
26	S																											
27	S																											
28	M																											
29	T																											
30	W																											
31	T																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																								ADT
20	**12**	**3**	**3**	**5**	**15**	**65**	**265**	**363**	**299**	**243**	**258**	**241**	**231**	**248**	**319**	**278**	**274**	**286**	**224**	**187**	**139**	**92**	**46**	**4116**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	67	3	64	363	9%	1.000	0.986

ESTIMATED

AADT

4174

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR E680** ROAD NAME: **WOODMERE BLVD** FROM: **BARBERRY LANE** TO: **BROADWAY** COUNTY: **Nassau**
DIRECTION: Northbound FACTOR GROUP: 30 REC. SERIAL #: 1760 FUNC. CLASS: 17 TOWN: **HEMPSTEAD**
STATE DIR CODE: 1 WK OF YR: 29 PLACEMENT: .20 MILE N OF KEENE LN NHS: no LION#:
DATE OF COUNT: 07/14/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 0: NORTH ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-DOTr10cw29 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS PROCESSED BY: ORG CODE: DOT INITIALS: afa

DATE	DAY	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
		AM												PM														
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**143**	**118**	**129**	**147**	**136**	**144**	**161**	**99**	**80**	**53**	**54**	**21**			
15	T	**13**	**6**	**1**	**1**	**1**	**21**	**32**	**94**	**188**	**169**	**137**	**173**	**153**	**140**	**146**	**141**	**150**	**213**	**112**	**153**	**139**	**71**	**43**	**31**	2328	213	17
16	F	**25**	**11**	**2**	**7**	**2**	**8**	**28**	**70**	**162**	**198**	**137**	**154**	**112**							**124**	**82**	**64**	**39**	**24**			
17	S	**92**	**39**	**13**	**2**	**4**	**3**	**8**	**19**	**52**	**77**	**73**	**87**	**78**	**88**	**82**	**58**	**85**	**70**	**64**	**55**	**34**	**71**	**69**	**39**	1262	92	0
18	S	**26**	**25**	**10**	**9**	**1**	**2**	**12**	**45**	**36**	**73**	**105**	**106**	**104**	**102**	**82**	**76**	**94**	**85**	**90**	**96**	**102**	**60**	**44**	**26**	1411	106	11
19	M	**16**	**9**	**2**	**1**	**2**	**16**	**32**	**89**	**177**	**151**	**164**	**152**	**129**	**144**	**135**	**118**	**126**	**167**	**105**	**50**	**82**	**35**	**38**	**19**	1959	177	8
20	T	**13**	**0**	**0**	**2**	**1**	**20**	**32**	**78**	**115**	**166**	**125**	**116**	**88**	**155**	**113**	**120**	**119**	**145**	**124**	**81**	**75**	**34**	**59**	**25**	1806	166	9
21	W	**12**	**12**	**7**	**1**	**6**	**14**	**30**	**88**	**165**	**181**	**157**	**128**															
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	ADT
	16	**7**	**2**	**3**	**2**	**16**	**31**	**83**	**159**	**170**	**142**	**143**	**126**	**137**	**129**	**130**	**131**	**164**	**124**	**95**	**93**	**47**	**47**	**24**	**2021**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	162	5	102	170	8%	0.985	1.096

ESTIMATED (one way)

AADT
1844

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **CR E680** ROAD NAME: **WOODMERE BLVD** FROM: **BARBERRY LANE** TO: **BROADWAY** COUNTY: **Nassau**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: 1765 FUNC. CLASS: 17 TOWN: **HEMPSTEAD**
STATE DIR CODE: 2 WK OF YR: 29 PLACEMENT: .20 MILE N OF KEENE LN NHS: no LION#:
DATE OF COUNT: 07/14/2010 @ REF MARKER: JURIS: County BIN:
NOTES LANE 0: SOUTH ADDL DATA: CC Stn: RR CROSSING:
COUNT TYPE: AXLE PAIRS BATCH ID: DOT-DOTr10cw29 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: DOT INITIALS: DKS PROCESSED BY: ORG CODE: DOT INITIALS: afa

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	T																											
2	F																											
3	S																											
4	S																											
5	M																											
6	T																											
7	W																											
8	T																											
9	F																											
10	S																											
11	S																											
12	M																											
13	T																											
14	W													**116**	**101**	**121**	**115**	**148**	**166**	**149**	**121**	**95**	**75**	**62**	**37**			
15	T	**14**	**4**	**1**	**4**	**5**	**59**	**58**	**83**	**121**	**121**	**128**	**126**	**119**	**131**	**110**	**117**	**180**	**146**	**135**	**131**	**115**	**87**	**67**	**46**	2108	180	16
16	F	**28**	**7**	**5**	**8**	**3**	**18**	**29**	**107**	**150**	**128**	**102**	**126**	**154**	**124**	**108**	**149**	**180**	**162**	**144**	**110**	**45**	**51**	**58**	**22**	2018	180	16
17	S	**26**	**15**	**11**	**5**	**4**	**4**	**10**	**17**	**31**	**46**	**70**	**69**	**75**	**67**	**74**	**62**	**70**	**75**	**67**	**55**	**46**	**64**	**82**	**47**	1092	82	22
18	S	**43**	**30**	**16**	**5**	**6**	**5**	**15**	**29**	**37**	**67**	**84**	**87**	**102**	**104**	**84**	**74**	**129**	**103**	**95**	**95**	**92**	**71**	**48**	**43**	1464	129	16
19	M	**11**	**10**	**2**	**0**	**7**	**12**	**20**	**65**	**106**	**131**	**110**	**79**	**90**	**109**	**134**	**118**	**134**	**128**	**141**	**104**	**60**	**63**	**58**	**24**	1716	141	18
20	T	**17**	**5**	**1**	**0**	**2**	**5**	**15**	**69**	**94**	**80**	**112**																
21	W																											
22	T																											
23	F																											
24	S																											
25	S																											
26	M																											
27	T																											
28	W																											
29	T																											
30	F																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	ADT
20	**5**	**2**	**4**	**3**	**27**	**30**	**80**	**116**	**113**	**111**	**108**	**106**	**112**	**120**	**115**	**152**	**145**	**140**	**117**	**89**	**74**	**61**	**35**	**1885**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
7	143	4	77	152	8%	0.985	1.096

ESTIMATED (one way)

AADT

1720

STATION: **037374**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **0590** ROAD NAME: **PROSPECT AVE** FROM: **BROADWAY** TO: **WEST BROADWAY** COUNTY: **Nassau**
DIRECTION: Northbound FACTOR GROUP: 30 REC. SERIAL #: 0624 FUNC. CLASS: 19 VILLAGE: **CEDARHURST**
STATE DIR CODE: 1 WK OF YR: 6 PLACEMENT: OVER LIRR FAR ROCKAWAY NHS: no BIN:
DATE OF COUNT: 02/07/2008 @ REF MARKER: JURIS: Village RR CROSSING:
NOTES LANE 1: NORTH ADDL DATA: CC Stn: HPMS SAMPLE:
COUNT TYPE: AXLE PAIRS BATCH ID: R10-DOTr10cw07
COUNT TAKEN BY: ORG CODE: DOT INITIALS: TS PROCESSED BY: ORG CODE: DOT INITIALS:

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T											**88**	**117**	**112**	**101**	**144**	**133**	**173**	**142**	**125**	**80**	**54**	**52**	**43**	**16**			
8	F	**7**	**4**	**0**	**1**	**4**	**11**	**34**	**113**					**113**	**175**	**176**	**179**	**148**	**73**	**29**	**16**	**20**	**15**	**14**	**7**			
9	S	**2**	**7**	**2**	**1**	**2**	**5**	**7**	**16**	**14**	**39**	**40**	**52**	**64**	**53**	**38**	**29**	**32**	**31**	**73**	**79**	**67**	**50**	**42**	**29**	774	79	19
10	S	**18**	**11**	**1**	**2**	**1**	**1**	**10**	**22**	**49**	**70**	**101**	**140**	**131**	**120**	**102**	**106**	**90**	**80**	**53**	**58**	**48**	**38**	**25**	**16**	1293	140	11
11	M	**4**	**1**	**0**	**2**	**3**	**9**	**26**	**117**	**125**	**121**	**79**	**85**	**93**	**107**	**147**	**123**	**170**	**165**	**102**	**73**	**65**	**47**	**14**	**13**	1691	170	16
12	T	**8**	**3**	**0**	**2**	**4**	**9**	**31**	**108**	**141**	**128**	**87**	**120**	**97**	**115**	**144**	**152**	**155**	**149**	**80**	**64**	**50**	**29**	**25**	**6**	1707	155	16
13	W	**4**	**1**	**2**	**2**	**4**	**13**	**29**	**118**	**127**	**115**	**90**	**74**	**79**	**83**	**115**	**116**	**142**	**131**	**94**	**70**	**47**	**37**	**29**	**11**	1533	142	16
14	T	**6**	**2**	**0**	**1**	**4**	**11**	**32**	**121**																			
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	ADT
6	**2**	**0**	**2**	**4**	**11**	**30**	**114**	**130**	**120**	**85**	**98**	**94**	**101**	**136**	**130**	**158**	**145**	**99**	**71**	**53**	**41**	**28**	**12**	**1670**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	162	5	96	158	9%	0.989	0.983

ESTIMATED (one way)

AADT
1699

STATION: **037374**

New York State Department of Transportation
Traffic Count Hourly Report

ROAD #: **0590** ROAD NAME: **PROSPECT AVE** FROM: **BROADWAY** TO: **WEST BROADWAY** COUNTY: **Nassau**
DIRECTION: Southbound FACTOR GROUP: 30 REC. SERIAL #: 0624 FUNC. CLASS: 19 VILLAGE: **CEDARHURST**
STATE DIR CODE: 2 WK OF YR: 6 PLACEMENT: OVER LIRR FAR ROCKAWAY NHS: no BIN:
DATE OF COUNT: 02/07/2008 @ REF MARKER: JURIS: Village RR CROSSING:
NOTES LANE 1: SOUTH ADDL DATA: CC Stn: HPMS SAMPLE:
COUNT TYPE: AXLE PAIRS BATCH ID: R10-DOTr10cw07
COUNT TAKEN BY: ORG CODE: DOT INITIALS: TS PROCESSED BY: ORG CODE: DOT INITIALS:

DATE	DAY	AM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	PM 12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T											**71**	**83**	**70**	**84**	**92**	**92**	**111**	**89**	**94**	**75**	**49**	**29**	**26**	**12**			
8	F	**7**	**1**	**2**	**2**	**3**	**8**	**15**	**99**					**136**	**124**	**115**	**108**	**89**	**51**	**36**	**15**	**22**	**12**	**8**	**9**			
9	S	**0**	**3**	**1**	**2**	**3**	**5**	**6**	**10**	**18**	**18**	**24**	**23**	**35**	**37**	**22**	**32**	**28**	**30**	**55**	**59**	**74**	**47**	**36**	**26**	594	74	20
10	S	**22**	**6**	**6**	**2**	**2**	**3**	**9**	**20**	**32**	**67**	**60**	**95**	**102**	**97**	**109**	**83**	**81**	**91**	**70**	**53**	**30**	**22**	**20**	**7**	1089	109	14
11	M	**2**	**4**	**0**	**0**	**6**	**5**	**12**	**105**	**98**	**87**	**74**	**65**	**69**	**65**	**95**	**81**	**92**	**92**	**86**	**56**	**50**	**25**	**17**	**6**	1192	105	7
12	T	**2**	**1**	**1**	**1**	**0**	**9**	**15**	**91**	**86**	**78**	**60**	**76**	**74**	**67**	**85**	**83**	**76**	**67**	**56**				**12**	**4**			
13	W	**3**	**2**	**2**	**1**	**3**	**5**	**19**	**80**	**110**	**85**	**55**	**55**	**59**	**60**	**85**	**81**	**78**	**97**	**66**	**62**	**33**	**23**	**16**	**19**	1099	110	8
14	T	**3**	**0**	**1**	**3**	**2**	**6**	**13**	**94**																			
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)		**4**	**1**	**2**	**2**	**2**	**7**	**15**	**93**	**97**	**82**	**64**	**69**	**67**	**68**	**88**	**83**	**88**	**85**	**75**	**63**	**44**	**26**	**18**	**10**	**ADT 1153**		

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	159	5	93	97	8%	0.989	0.983

ESTIMATED (one way)

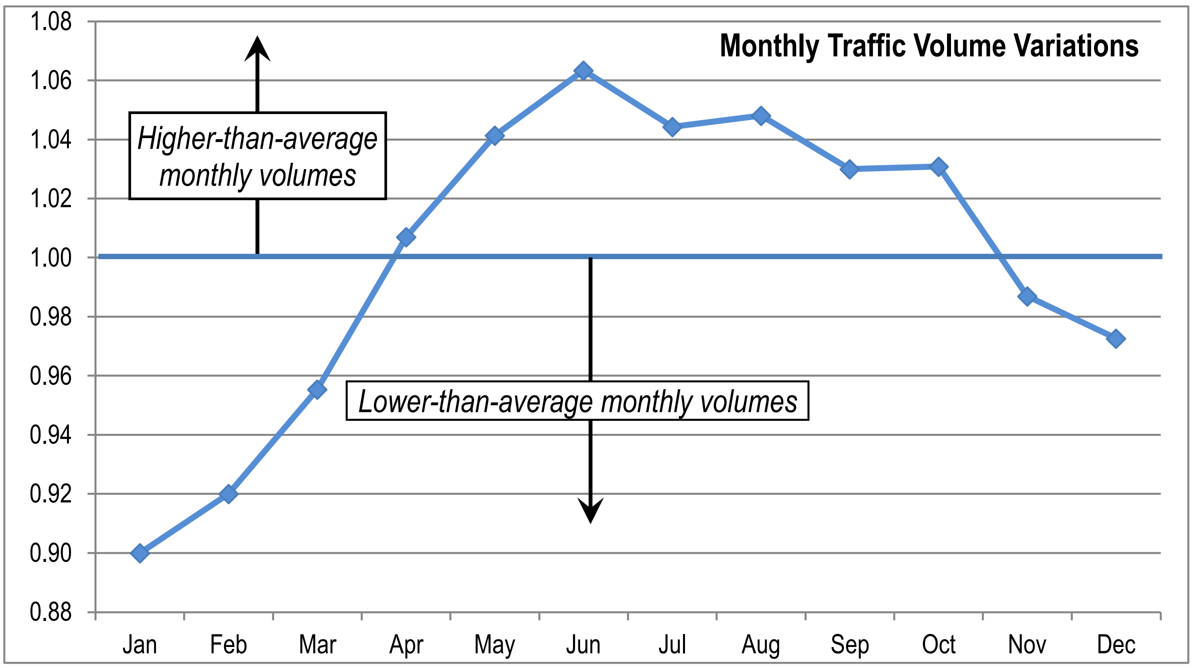
AADT

1173

APPENDIX B:
SEASONAL ADJUSTMENT

As described in the Traffic Study, when traffic counts cannot be obtained during one of the busier months of the year (generally spring through mid-autumn), a more conservative scenario (i.e., a busier month) can be modeled using standard traffic engineering practice in New York State, increasing off-peak counts by a New York State Department of Transportation (NYSDOT) "monthly adjustment factor" as a reasonable substitute for peak season traffic counts.

Monthly traffic variation can be visualized as follows:



The adjustment factors are month-specific, they reflect weekdays vs. weekends, and they are updated annually. The NYSDOT determines these factors by regularly monitoring nearly 200 24-hour, 365-day continuous count stations across the state, plus another ±12,000 24-hour shorter-term count stations. A factor of 1.0 reflects the average day of the year; factors less than or greater than 1.0 reflect smaller- and higher-than-average volume, respectively.

To adjust from one month to another, traffic volumes are multiplied by the ratio of the two months' factors. For example, if the June factor is 1.0 and the March factor is 0.8, volumes in March tend to be 80% of what they are in June; to adjust from March to June requires multiplying by $^{1}/_{0.8}$, or 1.25 (an increase of 25%).

The intersections in this report were adjusted from November to June using the two months' seasonal factors, multiplying weekday counts by 1.077 and multiplying weekend counts by 1.108 as shown in Table 1 below.

APPENDIX B (continued):
SEASONAL ADJUSTMENT

Table 1: Seasonal Adjustment Factors

Month	Weekday Factor	Adjust to June	Weekend Factor	Adjust to June
January	0.942	1.182	0.726	1.267
February	0.963	1.156	0.759	1.212
March	1.000	1.113	0.811	1.134
April	1.054	1.056	0.861	1.069
May	1.090	1.021	0.903	1.019
June	***1.113***	***1.000***	***0.920***	***1.000***
July	1.093	1.018	0.903	1.019
August	1.097	1.015	0.913	1.008
September	1.078	1.032	0.899	1.023
October	1.079	1.032	0.886	1.038
November	***1.033***	***1.077***	***0.830***	***1.108***
December	1.018	1.093	0.784	1.173

Weekday adjustment:

- June factor 1.113
- November factor 1.033
- Adjustment = 1.113 / 1.033 = 1.077

Weekend adjustment:

- June factor 0.920
- November factor 0.830
- Adjustment = 0.920 / 0.830 = 1.108

APPENDIX C:
LEVEL OF SERVICE DESCRIPTIONS

Level of service is a measure of traffic flow quality, which denotes the average delays that motorists face as they travel through an intersection. A motorist's delay is caused by several factors, including the presence of a traffic control (i.e., a signal or stop sign), geometry, other vehicles on the road, and incidents.

Total delay is the difference between the actual travel time, and the ideal travel time that would happen if there weren't any traffic controls, geometric delays, incidents, or other vehicles on the road. The HCS program only quantifies the "control delay," the portion of total delay attributed to the signal or stop sign. Control delay includes delays due to initial deceleration, stopped time, queue move-up time, and final acceleration.

The level of service (LOS) at **signalized** intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

The LOS at **two-way stop controlled** (**TWSC**) intersections depends on the capacity of each minor movement, not for the intersection as a whole. The capacity of a controlled leg is based on the distribution of gaps in the major street traffic flow, driver judgment in selecting a gap through which to move, and the follow-up time required by each driver in a queue.

The LOS at **All-Way stop controlled** (**AWSC**) intersections is also defined for each minor movement, and depends on the capacity, departure headway, and service time. A movement's delay is a function of the volume-to-capacity (v/c) ratio, service time, and departure headway.

The right of way at an AWSC intersection is controlled by stop signs on every leg of an intersection. Though the driver on the right generally has right of way, actual traffic flow at AWSC intersections generally follows one of two patterns:

1. Vehicles from opposite legs (i.e., northbound and southbound, or eastbound and westbound) arrive close to the same time; this is considered "2-phase" operation.
2. Vehicles from all four legs arrive separately. This is considered "4-phase" operation.

Service time is the time it takes an average vehicle to enter the intersection after stopping, and it depends on the probability that someone is on an opposing leg when a vehicle reaches the stop line. When the opposing legs are empty, a motorist can enter the intersection right after stopping. But if there are one or more vehicles on the opposing legs, the driver must wait for consensus from the other drivers before entering the intersection. The more opposing vehicles there are, the longer the service time will be, although subsequent delay increases get smaller with each additional vehicle. This probability depends on several factors, including the geometry of the intersection, lane configuration, and vehicular volumes.

Levels of service range between LOS A (relatively congestion-free) and LOS F (congested):

Level of Service A indicates very low control delays. This occurs when progression is extremely favorable; most vehicles arrive during the green phase and do not stop at all. Short traffic signal cycles may contribute to low delay.

Level of Service B generally occurs with good progression and/or short signal cycle lengths at signalized intersections. More vehicles stop than for LOS A, causing higher average delays.

APPENDIX C (continued):
LEVEL OF SERVICE DESCRIPTIONS

Level of Service C has higher delays than LOS B. This may result from fair progression and/or longer cycle lengths. Individual cycle failures, where motorists wait through an entire signal cycle, may begin to appear. The number of vehicles stopping is significant, though many still pass through without stopping.

Level of Service D has the influence of congestion becoming more noticeable. This may result from some combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (v/c) ratios. The proportion of stopping vehicles increases, and individual cycle failures are noticeable.

Level of Service E is considered the limit of acceptable delay. This LOS generally indicates poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures occur often.

Level of Service F is considered unacceptable to most drivers. The condition occurs with oversaturation (when arrival flow exceeds the intersection's capacity, denoted by the v/c ratio*) but it may also occur at v/c ratios below 1.0 with many individual cycle failures.

The following conditions are used to determine **Signalized** levels of service:

Average Control Delay (seconds per vehicle)	Level of Service (v/c Ratio)	
	v/c ≤ 1.0	v/c > 1.0
≤ 10.0	Level of Service A	Level of Service F
> 10.0 and ≤ 20.0	Level of Service B	Level of Service F
> 20.0 and ≤ 35.0	Level of Service C	Level of Service F
> 35.0 and ≤ 55.0	Level of Service D	Level of Service F
> 55.0 and ≤ 80.0	Level of Service E	Level of Service F
> 80.0	Level of Service F	Level of Service F

The expectation is that TWSC and AWSC intersections are designed to carry smaller traffic volumes than signalized intersections. Therefore, the delay threshold times are lower for the same LOS grades. The following delays are used to determine **Unsignalized** levels of service:

Average Control Delay (seconds per vehicle)	Level of Service (v/c Ratio)	
	v/c ≤ 1.0	v/c > 1.0
≤ 10.0	Level of Service A	Level of Service F
> 10.0 and ≤ 15.0	Level of Service B	Level of Service F
> 15.0 and ≤ 25.0	Level of Service C	Level of Service F
> 25.0 and ≤ 35.0	Level of Service D	Level of Service F
> 35.0 and ≤ 50.0	Level of Service E	Level of Service F
> 50.0	Level of Service F	Level of Service F

** For individual lane groups (not overall approaches or intersections), HCM 6 automatically defines the signalized level of service as LOS F if the v/c ratio is above 1.0.*

APPENDIX D:

EXISTING (SEASONALLY ADJUSTED) LEVEL OF SERVICE/CAPACITY WORKSHEETS

Signalized Intersections

1. Broadway at Meadow Drive
2. Broadway at Woodmere Boulevard

Unsignalized Intersections

1. Broadway at Pine Street
2. Broadway at Prospect Avenue
3. Albro Lane at Atlantic Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	756	11	16	669	36	13
Future Volume (veh/h)	756	11	16	669	36	13
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	779	11	16	690	37	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1369	19	58	1348	87	31
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1767	25	15	1740	1164	409
Grp Volume(v), veh/h	0	790	706	0	51	0
Grp Sat Flow(s),veh/h/ln	0	1792	1755	0	1605	0
Q Serve(g_s), s	0.0	14.2	0.0	0.0	2.4	0.0
Cycle Q Clear(g_c), s	0.0	14.2	0.0	0.0	2.4	0.0
Prop In Lane		0.01	0.02		0.73	0.25
Lane Grp Cap(c), veh/h	0	1389	1406	0	120	0
V/C Ratio(X)	0.00	0.57	0.50	0.00	0.42	0.00
Avail Cap(c_a), veh/h	0	1389	1406	0	301	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.77	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.6	0.0	0.0	35.3	0.0
Incr Delay (d2), s/veh	0.0	1.7	1.0	0.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.4	0.0	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.3	1.0	0.0	37.7	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	790			706	51	
Approach Delay, s/veh	5.3			1.0	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		68.0				68.0		12.0
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		16.2				2.0		4.4
Green Ext Time (p_c), s		7.1				6.3		0.1

Intersection Summary			
HCM 6th Ctrl Delay			4.4
HCM 6th LOS			A

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	766	699	6	1	16
Future Vol, veh/h	3	766	699	6	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	790	721	6	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	727	0	-	0	1520	724
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	796	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	854	-	-	-	119	399
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	416	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	854	-	-	-	118	399
Mov Cap-2 Maneuver	-	-	-	-	118	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	416	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	854	-	-	-	350
HCM Lane V/C Ratio	0.004	-	-	-	0.05
HCM Control Delay (s)	9.2	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	600	55	16	531	45	62	79	6	64	87	85
Future Volume (veh/h)	65	600	55	16	531	45	62	79	6	64	87	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	68	625	57	17	553	47	65	82	6	67	91	89
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	117	936	83	59	1027	86	148	162	10	119	123	105
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	102	1415	125	19	1553	130	443	859	53	331	654	555
Grp Volume(v), veh/h	750	0	0	617	0	0	153	0	0	247	0	0
Grp Sat Flow(s),veh/h/ln	1642	0	0	1701	0	0	1355	0	0	1540	0	0
Q Serve(g_s), s	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0
Cycle Q Clear(g_c), s	28.2	0.0	0.0	15.0	0.0	0.0	8.0	0.0	0.0	12.2	0.0	0.0
Prop In Lane	0.09		0.08	0.03		0.08	0.42		0.04	0.27		0.36
Lane Grp Cap(c), veh/h	1136	0	0	1172	0	0	319	0	0	347	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.53	0.00	0.00	0.48	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	1136	0	0	1172	0	0	444	0	0	474	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	0.0	0.0	7.1	0.0	0.0	29.3	0.0	0.0	31.2	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.7	0.0	0.0	1.1	0.0	0.0	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	0.0	5.0	0.0	0.0	2.7	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	0.0	8.8	0.0	0.0	30.4	0.0	0.0	34.3	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		750			617			153			247	
Approach Delay, s/veh		17.4			8.8			30.4			34.3	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.9		21.1		58.9		21.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		30.2		14.2		17.0		10.0				
Green Ext Time (p_c), s		5.3		0.8		4.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	774	710	20	23	52
Future Vol, veh/h	87	774	710	20	23	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	6	6	8	8	19	19
Mvmt Flow	90	798	732	21	24	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	753	0	-	0	1721	743
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	978	-
Critical Hdwy	4.16	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.254	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	839	-	-	-	118	421
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	339	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	839	-	-	-	95	421
Mov Cap-2 Maneuver	-	-	-	-	95	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	339	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	32.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	839	-	-	-	205
HCM Lane V/C Ratio	0.107	-	-	-	0.377
HCM Control Delay (s)	9.8	0	-	-	32.8
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	1.6

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	4	8	42	4	0
Future Vol, veh/h	2	4	8	42	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	3	5	11	57	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.4	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	16%
Vol Thru, %	0%	33%	84%
Vol Right, %	0%	67%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	6	50
LT Vol	4	0	8
Through Vol	0	2	42
RT Vol	0	4	0
Lane Flow Rate	5	8	68
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.01	0.077
Departure Headway (Hd)	4.656	4.41	4.101
Convergence, Y/N	Yes	Yes	Yes
Cap	767	813	878
Service Time	2.695	2.428	2.107
HCM Lane V/C Ratio	0.007	0.01	0.077
HCM Control Delay	7.7	7.5	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

HCM 6th Signalized Intersection Summary
1: Meadow Drive & Broadway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	641	44	17	718	33	12
Future Volume (veh/h)	641	44	17	718	33	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	682	47	18	764	35	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1319	91	59	1381	90	34
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1702	117	17	1783	1204	447
Grp Volume(v), veh/h	0	729	782	0	49	0
Grp Sat Flow(s),veh/h/ln	0	1820	1799	0	1685	0
Q Serve(g_s), s	0.0	12.0	0.0	0.0	2.2	0.0
Cycle Q Clear(g_c), s	0.0	12.0	0.0	0.0	2.2	0.0
Prop In Lane		0.06	0.02		0.71	0.27
Lane Grp Cap(c), veh/h	0	1410	1441	0	126	0
V/C Ratio(X)	0.00	0.52	0.54	0.00	0.39	0.00
Avail Cap(c_a), veh/h	0	1410	1441	0	316	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.76	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.4	0.0	0.0	35.2	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.1	0.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.4	0.0	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.7	1.1	0.0	37.2	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	729			782	49	
Approach Delay, s/veh	4.7			1.1	37.2	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	68.0	68.0	12.0
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	14.0	2.0	4.2
Green Ext Time (p_c), s	6.3	7.4	0.1

Intersection Summary	
HCM 6th Ctrl Delay	3.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	676	746	5	9	16
Future Vol, veh/h	29	676	746	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	31	719	794	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	799	0	-	0	1578	797
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	781	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	815	-	-	-	113	370
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	433	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	815	-	-	-	106	370
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	433	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	815	-	-	-	195
HCM Lane V/C Ratio	0.038	-	-	-	0.136
HCM Control Delay (s)	9.6	0	-	-	26.4
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	345	120	9	576	54	102	80	8	90	159	37
Future Volume (veh/h)	70	345	120	9	576	54	102	80	8	90	159	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	71	352	122	9	588	55	104	82	8	92	162	38
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	146	695	228	50	1029	95	183	126	10	147	203	44
Arrive On Green	0.42	0.42	0.42	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	150	1101	361	8	1632	151	519	575	47	401	927	199
Grp Volume(v), veh/h	545	0	0	652	0	0	194	0	0	292	0	0
Grp Sat Flow(s),veh/h/ln	1613	0	0	1791	0	0	1141	0	0	1527	0	0
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	17.8	0.0	0.0	16.8	0.0	0.0	13.2	0.0	0.0	14.8	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.54		0.04	0.32		0.13
Lane Grp Cap(c), veh/h	1068	0	0	1175	0	0	320	0	0	394	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.55	0.00	0.00	0.61	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	1068	0	0	1175	0	0	394	0	0	480	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	8.6	0.0	0.0	29.0	0.0	0.0	30.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	6.1	0.0	0.0	3.5	0.0	0.0	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	0.0	10.5	0.0	0.0	30.9	0.0	0.0	34.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		545			652			194			292	
Approach Delay, s/veh		15.1			10.5			30.9			34.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.4		23.6		56.4		23.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		19.8		16.8		18.8		15.2				
Green Ext Time (p_c), s		4.4		0.8		5.0		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			18.5
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	740	740	39	47	57
Future Vol, veh/h	82	740	740	39	47	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	4	4	6	6	7	7
Mvmt Flow	85	771	771	41	49	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	812	0	-	0	1733	792
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	941	-
Critical Hdwy	4.14	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.236	-	-	-	3.563	3.363
Pot Cap-1 Maneuver	806	-	-	-	118	405
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	372	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	806	-	-	-	96	405
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	372	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	61
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	806	-	-	-	165
HCM Lane V/C Ratio	0.106	-	-	-	0.657
HCM Control Delay (s)	10	0	-	-	61
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	3.8

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	1	11	79	6	3
Future Vol, veh/h	2	1	11	79	6	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	3	1	14	100	8	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.8	7.6	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	67%	0%	12%
Vol Thru, %	0%	67%	88%
Vol Right, %	33%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	9	3	90
LT Vol	6	0	11
Through Vol	0	2	79
RT Vol	3	1	0
Lane Flow Rate	11	4	114
Geometry Grp	1	1	1
Degree of Util (X)	0.014	0.004	0.127
Departure Headway (Hd)	4.411	3.804	4.015
Convergence, Y/N	Yes	Yes	Yes
Cap	807	939	897
Service Time	2.463	1.834	2.023
HCM Lane V/C Ratio	0.014	0.004	0.127
HCM Control Delay	7.5	6.8	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	709	18	19	530	16	13
Future Volume (veh/h)	709	18	19	530	16	13
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	779	20	21	582	18	14
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1429	37	68	1413	68	53
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1844	47	28	1824	910	708
Grp Volume(v), veh/h	0	799	603	0	33	0
Grp Sat Flow(s),veh/h/ln	0	1891	1851	0	1668	0
Q Serve(g_s), s	0.0	13.2	0.0	0.0	1.5	0.0
Cycle Q Clear(g_c), s	0.0	13.2	0.0	0.0	1.5	0.0
Prop In Lane		0.03	0.03		0.55	0.42
Lane Grp Cap(c), veh/h	0	1466	1481	0	125	0
V/C Ratio(X)	0.00	0.55	0.41	0.00	0.26	0.00
Avail Cap(c_a), veh/h	0	1466	1481	0	313	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.87	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.5	0.0	0.0	34.9	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.7	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	0.3	0.0	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.0	0.7	0.0	36.0	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	799			603	33	
Approach Delay, s/veh	5.0			0.7	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	68.0	68.0	12.0
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	15.2	2.0	3.5
Green Ext Time (p_c), s	7.2	5.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	3.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	724	542	3	3	9
Future Vol, veh/h	14	724	542	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	15	796	596	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	599	0	-	0	1424	598
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	826	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	988	-	-	-	151	506
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	433	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	988	-	-	-	147	506
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	433	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	314
HCM Lane V/C Ratio	0.016	-	-	-	0.042
HCM Control Delay (s)	8.7	0	-	-	17
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
3: Woodmere Boulevard & Broadway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	558	39	13	443	50	41	51	11	73	69	74
Future Volume (veh/h)	78	558	39	13	443	50	41	51	11	73	69	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	85	607	42	14	482	54	45	55	12	79	75	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	149	998	67	58	1099	121	143	158	29	140	105	96
Arrive On Green	0.45	0.45	0.45	0.68	0.68	0.68	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	146	1470	98	17	1620	178	468	924	167	467	615	562
Grp Volume(v), veh/h	734	0	0	550	0	0	112	0	0	234	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	0	1815	0	0	1559	0	0	1645	0	0
Q Serve(g_s), s	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	24.9	0.0	0.0	11.0	0.0	0.0	4.7	0.0	0.0	10.8	0.0	0.0
Prop In Lane	0.12		0.06	0.03		0.10	0.40		0.11	0.34		0.34
Lane Grp Cap(c), veh/h	1214	0	0	1278	0	0	330	0	0	342	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.43	0.00	0.00	0.34	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	1214	0	0	1278	0	0	491	0	0	504	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	5.9	0.0	0.0	29.3	0.0	0.0	31.8	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	1.1	0.0	0.0	0.6	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	0.0	3.7	0.0	0.0	1.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	7.0	0.0	0.0	29.9	0.0	0.0	34.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		734			550			112			234	
Approach Delay, s/veh		15.4			7.0			29.9			34.2	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.3		19.7		60.3		19.7				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		26.9		12.8		13.0		6.7				
Green Ext Time (p_c), s		5.6		0.9		4.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	79	705	563	24	27	71
Future Vol, veh/h	79	705	563	24	27	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	89	792	633	27	30	80

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	660	0	-	0	1617	647
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	970	-
Critical Hdwy	4.11	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	933	-	-	-	138	491
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	369	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	933	-	-	-	115	491
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	369	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	29
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	933	-	-	-	258
HCM Lane V/C Ratio	0.095	-	-	-	0.427
HCM Control Delay (s)	9.3	0	-	-	29
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	37	8	2
Future Vol, veh/h	1	3	9	37	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	4	11	44	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.5	7.2	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	20%
Vol Thru, %	0%	25%	80%
Vol Right, %	20%	75%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	4	46
LT Vol	8	0	9
Through Vol	0	1	37
RT Vol	2	3	0
Lane Flow Rate	12	5	55
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.005	0.06
Departure Headway (Hd)	4.043	3.512	3.964
Convergence, Y/N	Yes	Yes	Yes
Cap	885	1021	908
Service Time	2.067	1.526	1.969
HCM Lane V/C Ratio	0.014	0.005	0.061
HCM Control Delay	7.1	6.5	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

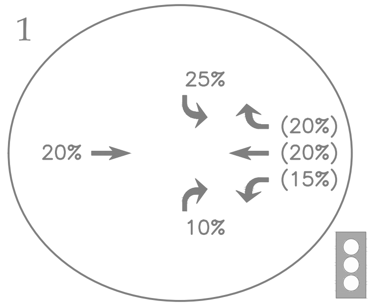
APPENDIX E:

OTHER PLANNED PROJECT TRIP GENERATION DATA

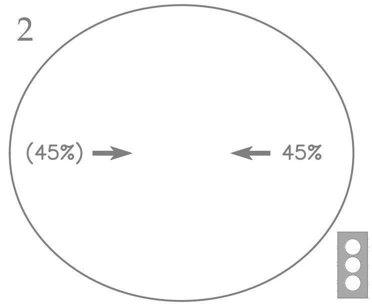
Village of Cedarhurst Zoning Initiative

Site #1 for the Village of Cedarhurst Zoning Initiative is not expected to generate traffic on a regular basis on Broadway past The Woodmere Club

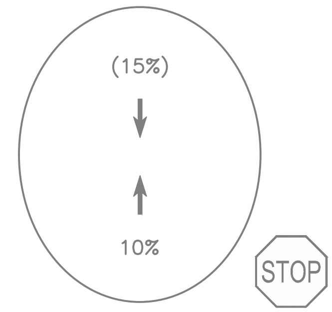
LEGEND: Enter (Exit)



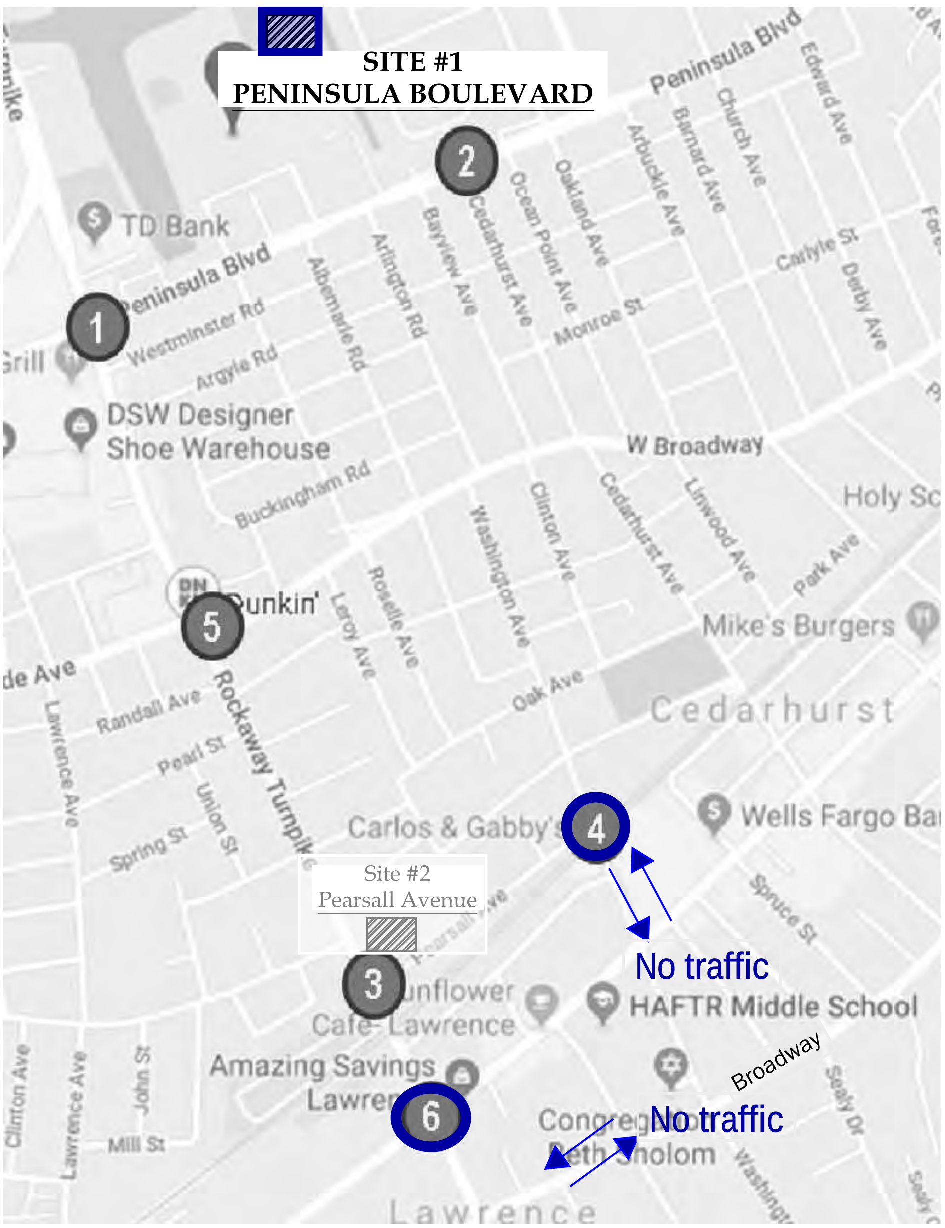
Rockaway Turnpike at Peninsula Boulevard-Bay Boulevard

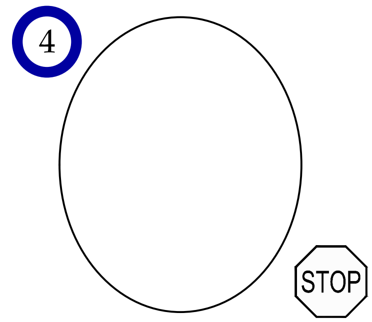


Cedarhurst Avenue at Peninsula Boulevard

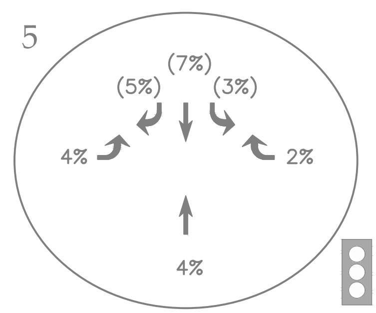


Rockaway Turnpike at Pearsall Avenue

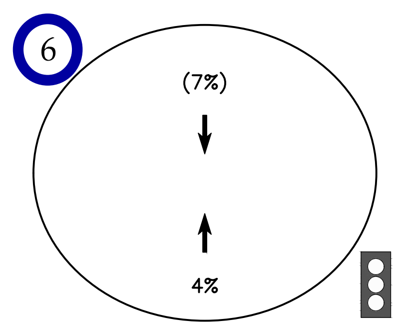




Washington Avenue at Pearsall Avenue



Rockaway Turnpike at Burnside Avenue



Central Avenue at Rockaway Turnpike

Cameron Engineering & Associates, LLP
177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
1411 Broadway, Suite 610, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

Distribution Of Site 1 Traffic

Up to 15% of the traffic from the Village of Cedarhurst Zoning Initiative Site 2 might regularly utilize Broadway past The Club [southeast of Locations 4 and 6 (Washington Avenue at Pearsall Avenue & Central Avenue at Rockaway Turnpike)]

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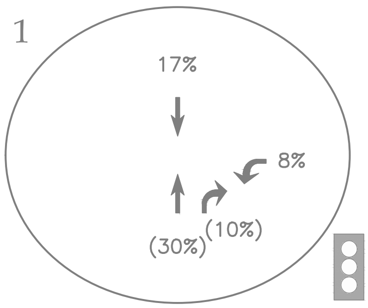
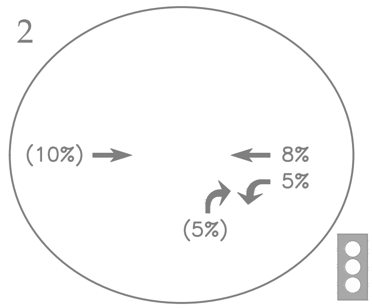
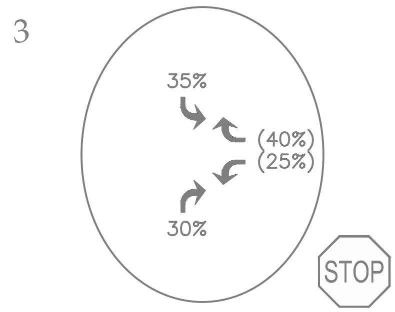


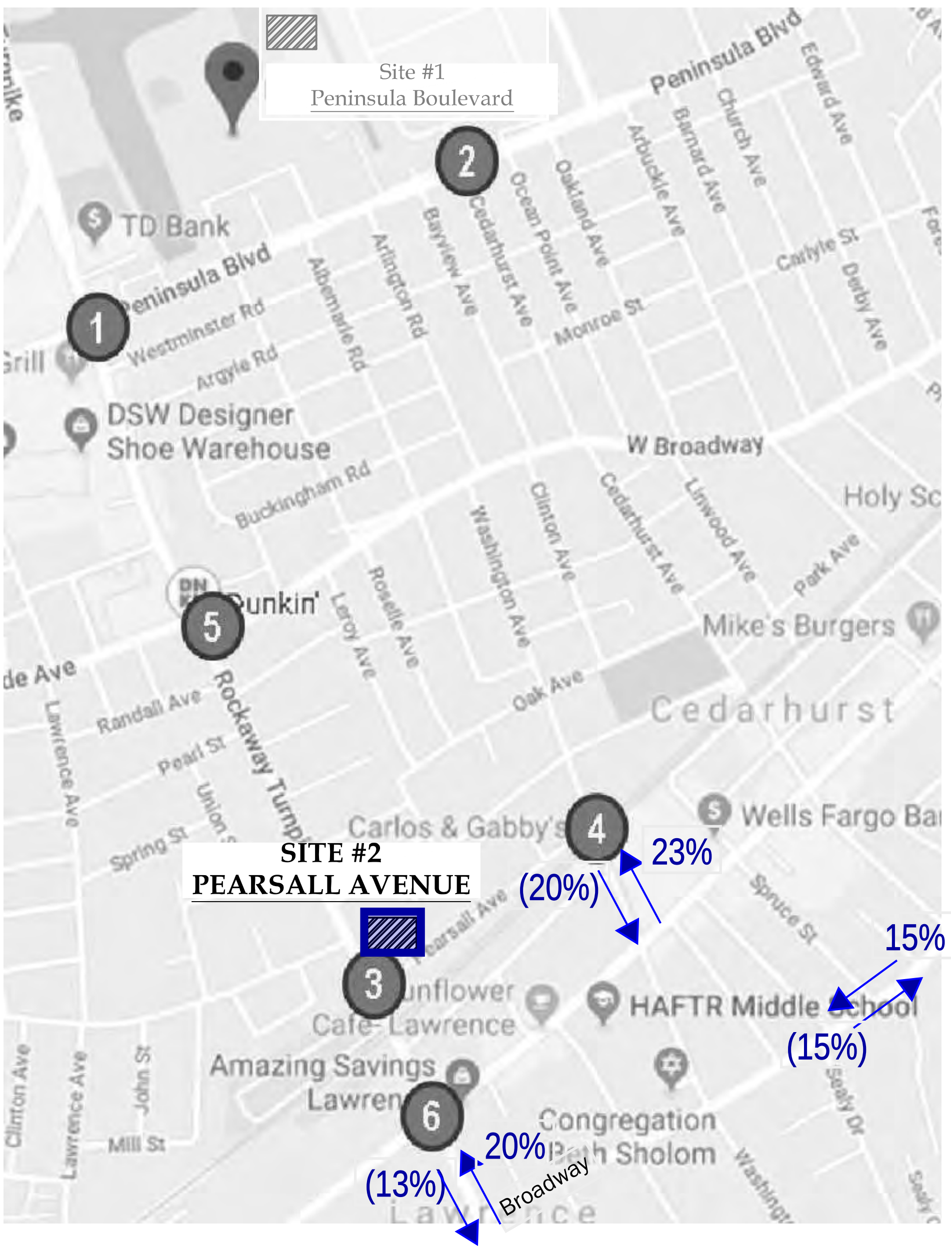
Rockaway Turnpike at Peninsula Boulevard-Bay Boulevard

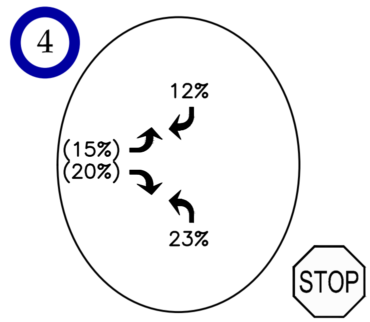


Cedarhurst Avenue at Peninsula Boulevard

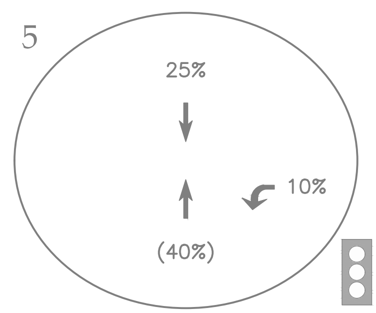


Rockaway Turnpike at Pearsall Avenue

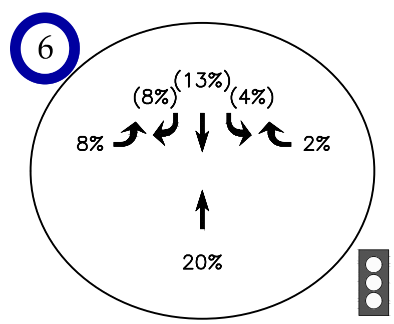




Washington Avenue at Pearsall Avenue



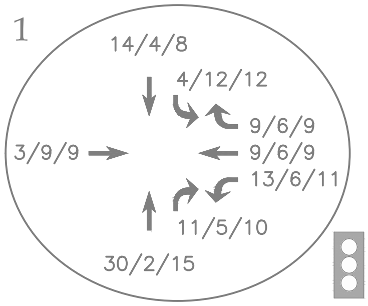
Rockaway Turnpike at Burnside Avenue



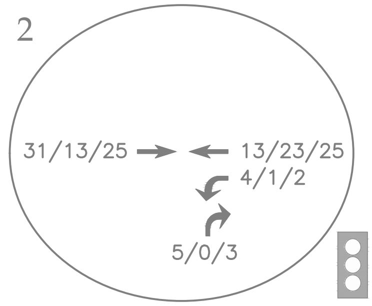
Central Avenue at Rockaway Turnpike

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
1411 Broadway, Suite 610, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

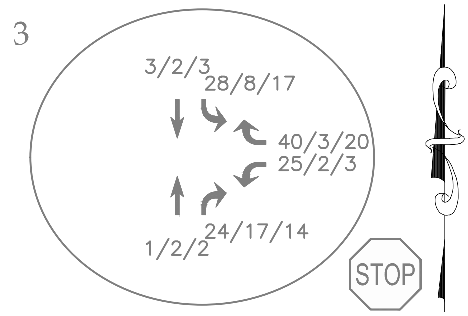
Distribution Of Site 2 Traffic



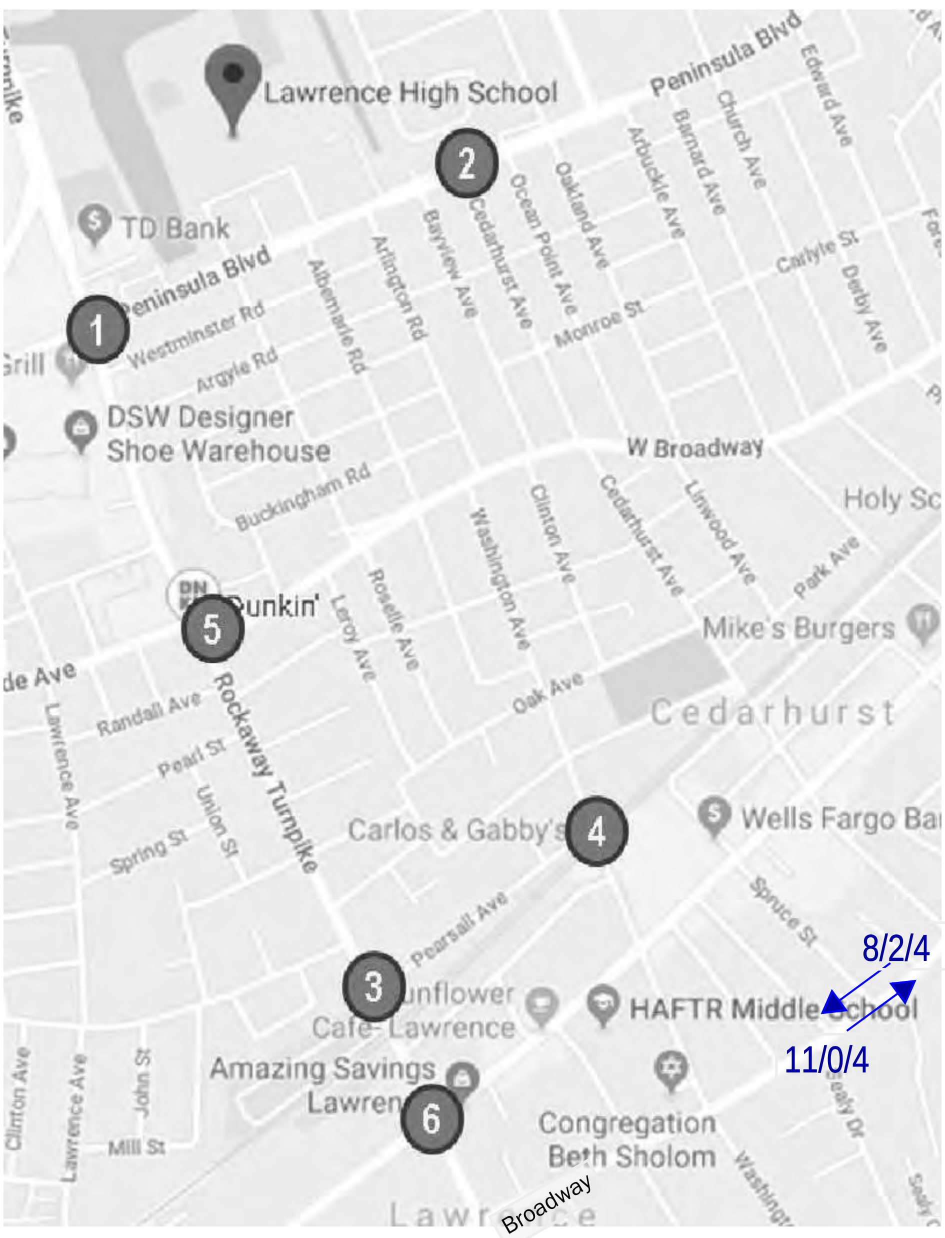
Rockaway Turnpike at Peninsula Boulevard-Bay Boulevard

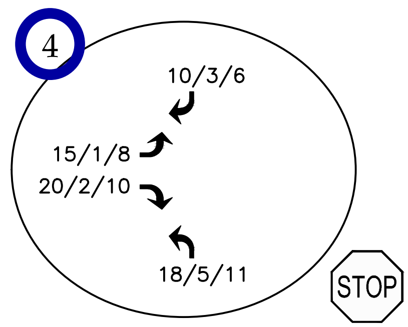


Cedarhurst Avenue at Peninsula Boulevard

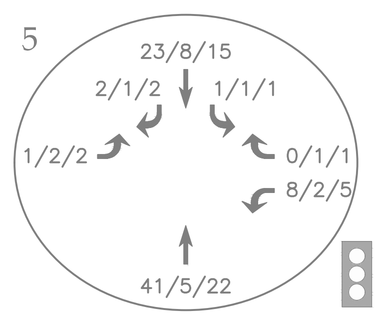


Rockaway Turnpike at Pearsall Avenue

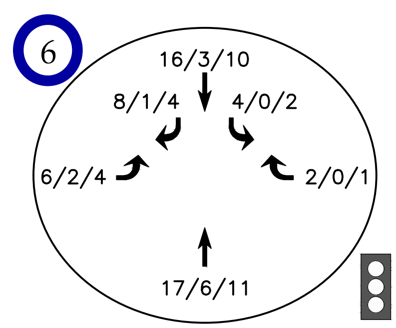




Washington Avenue at Pearsall Avenue



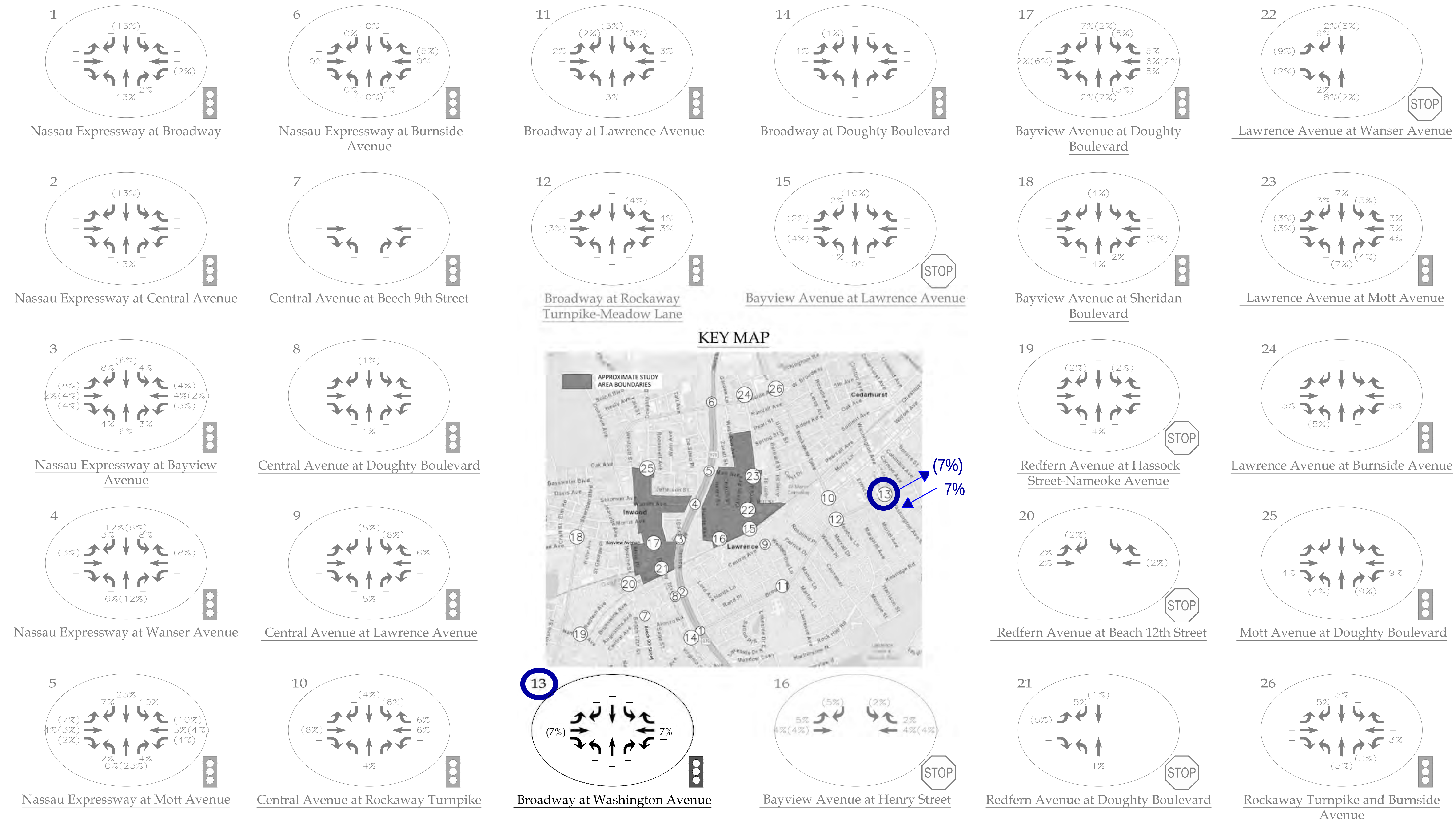
Rockaway Turnpike at Burnside Avenue



Central Avenue at Rockaway Turnpike

Town of Hempstead Zoning Initiative

Up to 7% of the traffic from the Town of Hempstead Zoning Initiative might utilize Broadway past The Woodmere Club, which is roughly 1 mile east of Location 13 (Washington Avenue at Broadway)



KEY LEGEND
Enter(Exit)

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
1411 Broadway, Suite 610, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

Distribution of Net New Traffic

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
1411 Broadway, Suite 610, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

KEY LEGEND
AM/PM/Weekend

AM, PM, and Weekend Peak Hour Net New 3-Year Traffic

APPENDIX F:

NO ACTION – AS OF RIGHT
LEVEL OF SERVICE/CAPACITY WORKSHEETS

1) With no new access to Broadway
2) With new driveway on Broadway opposite Prospect Avenue

Signalized Intersections

1. Broadway at Meadow Drive
2. Broadway at Woodmere Boulevard

Unsignalized Intersections

1. Broadway at Pine Street
2. Broadway at Prospect Avenue
3. Albro Lane at Atlantic Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	791	43	38	694	131	76
Future Volume (veh/h)	791	43	38	694	131	76
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	815	44	39	715	135	78
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1168	63	81	1134	158	91
Arrive On Green	0.69	0.69	1.00	1.00	0.16	0.16
Sat Flow, veh/h	1689	91	49	1640	999	577
Grp Volume(v), veh/h	0	859	754	0	214	0
Grp Sat Flow(s),veh/h/ln	0	1780	1689	0	1583	0
Q Serve(g_s), s	0.0	23.0	0.0	0.0	10.5	0.0
Cycle Q Clear(g_c), s	0.0	23.0	0.0	0.0	10.5	0.0
Prop In Lane		0.05	0.05		0.63	0.36
Lane Grp Cap(c), veh/h	0	1231	1215	0	251	0
V/C Ratio(X)	0.00	0.70	0.62	0.00	0.85	0.00
Avail Cap(c_a), veh/h	0	1231	1215	0	297	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.73	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	7.4	0.0	0.0	32.8	0.0
Incr Delay (d2), s/veh	0.0	3.3	1.8	0.0	18.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.7	0.6	0.0	5.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	10.7	1.8	0.0	51.1	0.0
LnGrp LOS	A	B	A	A	D	A
Approach Vol, veh/h	859			754	214	
Approach Delay, s/veh	10.7			1.8	51.1	
Approach LOS	B			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	61.3	61.3	18.7
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	25.0	2.0	12.5
Green Ext Time (p_c), s	7.6	7.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰↑	↑↱		Y	
Traffic Vol, veh/h	3	833	818	7	1	16
Future Vol, veh/h	3	833	818	7	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	859	843	7	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	850	0	-	0	1712	847
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	865	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	767	-	-	-	90	337
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	767	-	-	-	89	337
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	385	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	767	-	-	-	290
HCM Lane V/C Ratio	0.004	-	-	-	0.06
HCM Control Delay (s)	9.7	0	-	-	18.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	683	62	16	570	46	66	80	7	65	89	89
Future Volume (veh/h)	72	683	62	16	570	46	66	80	7	65	89	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	75	711	65	17	594	48	69	83	7	68	93	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	117	929	82	58	1026	82	151	158	11	120	125	109
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	103	1416	126	18	1564	124	446	818	58	324	647	561
Grp Volume(v), veh/h	851	0	0	659	0	0	159	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1645	0	0	1706	0	0	1323	0	0	1533	0	0
Q Serve(g_s), s	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	34.5	0.0	0.0	16.9	0.0	0.0	8.6	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.09		0.08	0.03		0.07	0.43		0.04	0.27		0.37
Lane Grp Cap(c), veh/h	1128	0	0	1166	0	0	321	0	0	354	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1128	0	0	1166	0	0	436	0	0	472	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.9	0.0	0.0	7.6	0.0	0.0	29.1	0.0	0.0	31.0	0.0	0.0
Incr Delay (d2), s/veh	3.0	0.0	0.0	2.0	0.0	0.0	1.2	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	0.0	0.0	5.7	0.0	0.0	2.8	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	0.0	0.0	9.6	0.0	0.0	30.3	0.0	0.0	34.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		851			659			159			254	
Approach Delay, s/veh		19.9			9.6			30.3			34.4	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.5		21.5		58.5		21.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		36.5		14.6		18.9		10.6				
Green Ext Time (p_c), s		4.5		0.8		5.2		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			19.2
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	2.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	839	822	29	26	53
Future Vol, veh/h	89	839	822	29	26	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	6	6	8	8	19	19
Mvmt Flow	92	865	847	30	27	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	877	0	-	0	1911	862
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	4.16	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.254	-	-	-	3	3
Pot Cap-1 Maneuver	753	-	-	-	99	400
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	353	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	753	-	-	-	76	400
Mov Cap-2 Maneuver	-	-	-	-	76	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	353	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	46
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	753	-	-	-	166
HCM Lane V/C Ratio	0.122	-	-	-	0.491
HCM Control Delay (s)	10.4	0	-	-	46
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	2.4

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	4	8	51	4	0
Future Vol, veh/h	5	4	8	51	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	7	5	11	69	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.5	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	14%
Vol Thru, %	0%	56%	86%
Vol Right, %	0%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	9	59
LT Vol	4	0	8
Through Vol	0	5	51
RT Vol	0	4	0
Lane Flow Rate	5	12	80
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.015	0.091
Departure Headway (Hd)	4.685	4.553	4.099
Convergence, Y/N	Yes	Yes	Yes
Cap	761	787	878
Service Time	2.732	2.574	2.107
HCM Lane V/C Ratio	0.007	0.015	0.091
HCM Control Delay	7.8	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.3

HCM 6th Signalized Intersection Summary
1: Meadow Drive & Broadway

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	152	89	739	96	54
Future Volume (veh/h)	653	152	89	739	96	54
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	695	162	95	786	102	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1053	245	128	936	128	72
Arrive On Green	0.73	0.73	1.00	1.00	0.12	0.12
Sat Flow, veh/h	1444	337	107	1284	1062	594
Grp Volume(v), veh/h	0	857	881	0	160	0
Grp Sat Flow(s),veh/h/ln	0	1780	1391	0	1666	0
Q Serve(g_s), s	0.0	20.1	29.1	0.0	7.5	0.0
Cycle Q Clear(g_c), s	0.0	20.1	49.2	0.0	7.5	0.0
Prop In Lane		0.19	0.11		0.64	0.36
Lane Grp Cap(c), veh/h	0	1298	1064	0	201	0
V/C Ratio(X)	0.00	0.66	0.83	0.00	0.79	0.00
Avail Cap(c_a), veh/h	0	1298	1064	0	312	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.67	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	5.7	2.3	0.0	34.2	0.0
Incr Delay (d2), s/veh	0.0	2.6	5.1	0.0	7.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	1.5	0.0	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.3	7.4	0.0	41.7	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	857			881	160	
Approach Delay, s/veh	8.3			7.4	41.7	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	64.3	64.3	15.7
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	22.1	51.2	9.5
Green Ext Time (p_c), s	8.0	1.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	796	830	5	9	16
Future Vol, veh/h	30	796	830	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	32	847	883	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	888	0	-	0	1797	886
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	911	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	754	-	-	-	83	328
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	375	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	754	-	-	-	76	328
Mov Cap-2 Maneuver	-	-	-	-	76	-
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	375	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	34.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	754	-	-	-	150
HCM Lane V/C Ratio	0.042	-	-	-	0.177
HCM Control Delay (s)	10	0	-	-	34.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	385	126	9	652	55	111	81	8	92	162	44
Future Volume (veh/h)	75	385	126	9	652	55	111	81	8	92	162	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	77	393	129	9	665	56	113	83	8	94	165	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	141	687	213	50	1027	86	189	121	10	148	205	51
Arrive On Green	0.21	0.21	0.21	0.62	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	145	1104	343	7	1649	138	522	533	43	393	903	225
Grp Volume(v), veh/h	599	0	0	730	0	0	204	0	0	304	0	0
Grp Sat Flow(s),veh/h/ln	1592	0	0	1794	0	0	1098	0	0	1521	0	0
Q Serve(g_s), s	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	25.7	0.0	0.0	20.6	0.0	0.0	14.7	0.0	0.0	15.5	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.55		0.04	0.31		0.15
Lane Grp Cap(c), veh/h	1042	0	0	1162	0	0	320	0	0	405	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.63	0.00	0.00	0.64	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	1042	0	0	1162	0	0	383	0	0	478	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	9.6	0.0	0.0	29.0	0.0	0.0	29.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	2.6	0.0	0.0	2.6	0.0	0.0	5.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	0.0	7.6	0.0	0.0	3.8	0.0	0.0	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	0.0	12.2	0.0	0.0	31.7	0.0	0.0	35.2	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		599			730			204			304	
Approach Delay, s/veh		23.4			12.2			31.7			35.2	
Approach LOS		C			B			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2		55.8		24.2				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		27.7		17.5		22.6		16.7				
Green Ext Time (p_c), s		4.4		0.7		5.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	852	819	45	57	58
Future Vol, veh/h	83	852	819	45	57	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	4	4	6	6	7	7
Mvmt Flow	86	888	853	47	59	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	900	0	-	0	1937	877
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	1060	-
Critical Hdwy	4.14	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.236	-	-	-	3	3
Pot Cap-1 Maneuver	747	-	-	-	96	392
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	361	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	747	-	-	-	74	392
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	361	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	136.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	747	-	-	-	125
HCM Lane V/C Ratio	0.116	-	-	-	0.958
HCM Control Delay (s)	10.4	0	-	-	136.3
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	6.4

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	1	11	85	7	3
Future Vol, veh/h	11	1	11	85	7	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	14	1	14	108	9	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.7	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	11%
Vol Thru, %	0%	92%	89%
Vol Right, %	30%	8%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	12	96
LT Vol	7	0	11
Through Vol	0	11	85
RT Vol	3	1	0
Lane Flow Rate	13	15	122
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.017	0.136
Departure Headway (Hd)	4.472	3.962	4.024
Convergence, Y/N	Yes	Yes	Yes
Cap	795	901	893
Service Time	2.532	1.996	2.037
HCM Lane V/C Ratio	0.016	0.017	0.137
HCM Control Delay	7.6	7.1	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	731	97	84	549	83	68
Future Volume (veh/h)	731	97	84	549	83	68
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	803	107	92	603	91	75
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1190	159	142	904	113	93
Arrive On Green	0.72	0.72	1.00	1.00	0.13	0.13
Sat Flow, veh/h	1642	219	126	1248	905	746
Grp Volume(v), veh/h	0	910	695	0	167	0
Grp Sat Flow(s),veh/h/ln	0	1861	1374	0	1661	0
Q Serve(g_s), s	0.0	21.1	14.7	0.0	7.8	0.0
Cycle Q Clear(g_c), s	0.0	21.1	35.7	0.0	7.8	0.0
Prop In Lane		0.12	0.13		0.54	0.45
Lane Grp Cap(c), veh/h	0	1348	1046	0	208	0
V/C Ratio(X)	0.00	0.67	0.66	0.00	0.80	0.00
Avail Cap(c_a), veh/h	0	1348	1046	0	311	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.81	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	5.9	1.6	0.0	34.0	0.0
Incr Delay (d2), s/veh	0.0	2.7	2.7	0.0	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.8	0.8	0.0	3.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.7	4.3	0.0	42.8	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	910			695	167	
Approach Delay, s/veh	8.7			4.3	42.8	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		64.0				64.0		16.0
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		23.1				37.7		9.8
Green Ext Time (p_c), s		8.6				5.0		0.2

Intersection Summary		
HCM 6th Ctrl Delay		10.2
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	824	629	3	3	9
Future Vol, veh/h	15	824	629	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	905	691	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	694	0	-	0	1630	693
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	937	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	911	-	-	-	113	447
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	384	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	911	-	-	-	109	447
Mov Cap-2 Maneuver	-	-	-	-	109	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	911	-	-	-	252
HCM Lane V/C Ratio	0.018	-	-	-	0.052
HCM Control Delay (s)	9	0	-	-	20.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	623	44	14	514	51	47	52	11	74	70	81
Future Volume (veh/h)	84	623	44	14	514	51	47	52	11	74	70	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	91	677	48	15	559	55	51	57	12	80	76	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	146	983	67	57	1105	107	151	153	27	140	106	105
Arrive On Green	0.45	0.45	0.45	0.67	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	143	1459	100	16	1641	159	492	865	151	456	601	596
Grp Volume(v), veh/h	816	0	0	629	0	0	120	0	0	244	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1816	0	0	1507	0	0	1652	0	0
Q Serve(g_s), s	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	29.7	0.0	0.0	13.6	0.0	0.0	5.2	0.0	0.0	11.2	0.0	0.0
Prop In Lane	0.11		0.06	0.02		0.09	0.42		0.10	0.33		0.36
Lane Grp Cap(c), veh/h	1196	0	0	1269	0	0	330	0	0	351	0	0
V/C Ratio(X)	0.68	0.00	0.00	0.50	0.00	0.00	0.36	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1196	0	0	1269	0	0	481	0	0	505	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	6.5	0.0	0.0	29.1	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.0	1.4	0.0	0.0	0.7	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	0.0	4.7	0.0	0.0	2.1	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	0.0	7.9	0.0	0.0	29.8	0.0	0.0	34.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		816			629			120			244	
Approach Delay, s/veh		17.1			7.9			29.8			34.0	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.9		20.1		59.9		20.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		31.7		13.2		15.6		7.2				
Green Ext Time (p_c), s		5.6		0.9		5.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Intersection						
Int Delay, s/veh	3.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	798	644	31	34	72
Future Vol, veh/h	80	798	644	31	34	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	90	897	724	35	38	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	759	0	-	0	1819	742
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	1077	-
Critical Hdwy	4.11	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3	3
Pot Cap-1 Maneuver	857	-	-	-	112	467
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	360	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	89	467
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	360	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	47.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	-	-	198
HCM Lane V/C Ratio	0.105	-	-	-	0.602
HCM Control Delay (s)	9.7	0	-	-	47.4
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	3.4

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	3	9	43	8	2
Future Vol, veh/h	8	3	9	43	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	4	11	51	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.9	7.3	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	17%
Vol Thru, %	0%	73%	83%
Vol Right, %	20%	27%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	11	52
LT Vol	8	0	9
Through Vol	0	8	43
RT Vol	2	3	0
Lane Flow Rate	12	13	62
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.014	0.068
Departure Headway (Hd)	4.07	3.804	3.966
Convergence, Y/N	Yes	Yes	Yes
Cap	878	943	908
Service Time	2.1	1.819	1.972
HCM Lane V/C Ratio	0.014	0.014	0.068
HCM Control Delay	7.2	6.9	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

With a second driveway on
Broadway, opposite Prospect Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	791	22	38	694	68	76
Future Volume (veh/h)	791	22	38	694	68	76
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	815	23	39	715	70	78
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1268	36	83	1198	88	98
Arrive On Green	0.73	0.73	1.00	1.00	0.12	0.12
Sat Flow, veh/h	1738	49	49	1643	730	814
Grp Volume(v), veh/h	0	838	754	0	149	0
Grp Sat Flow(s),veh/h/ln	0	1787	1691	0	1554	0
Q Serve(g_s), s	0.0	19.1	0.0	0.0	7.5	0.0
Cycle Q Clear(g_c), s	0.0	19.1	0.0	0.0	7.5	0.0
Prop In Lane		0.03	0.05		0.47	0.52
Lane Grp Cap(c), veh/h	0	1304	1281	0	187	0
V/C Ratio(X)	0.00	0.64	0.59	0.00	0.80	0.00
Avail Cap(c_a), veh/h	0	1304	1281	0	291	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.73	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	5.5	0.0	0.0	34.2	0.0
Incr Delay (d2), s/veh	0.0	2.4	1.5	0.0	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	0.5	0.0	3.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.0	1.5	0.0	42.3	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	838			754	149	
Approach Delay, s/veh	8.0			1.5	42.3	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		64.4				64.4		15.6
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		21.1				2.0		9.5
Green Ext Time (p_c), s		7.6				7.3		0.2

Intersection Summary			
HCM 6th Ctrl Delay			8.1
HCM 6th LOS			A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	812	755	7	1	16
Future Vol, veh/h	3	812	755	7	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	837	778	7	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	785	0	-	0	1625	782
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	843	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	812	-	-	-	103	369
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	395	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	812	-	-	-	102	369
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	395	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	812	-	-	-	320
HCM Lane V/C Ratio	0.004	-	-	-	0.055
HCM Control Delay (s)	9.4	0	-	-	16.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th Signalized Intersection Summary
3: Woodmere Boulevard & Broadway

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	683	62	16	570	46	66	80	7	65	89	89
Future Volume (veh/h)	72	683	62	16	570	46	66	80	7	65	89	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	75	711	65	17	594	48	69	83	7	68	93	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	117	929	82	58	1026	82	151	158	11	120	125	109
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	103	1416	126	18	1564	124	446	818	58	324	647	561
Grp Volume(v), veh/h	851	0	0	659	0	0	159	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1645	0	0	1706	0	0	1323	0	0	1533	0	0
Q Serve(g_s), s	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	34.5	0.0	0.0	16.9	0.0	0.0	8.6	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.09		0.08	0.03		0.07	0.43		0.04	0.27		0.37
Lane Grp Cap(c), veh/h	1128	0	0	1166	0	0	321	0	0	354	0	0
V/C Ratio(X)	0.75	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1128	0	0	1166	0	0	436	0	0	472	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.9	0.0	0.0	7.6	0.0	0.0	29.1	0.0	0.0	31.0	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	2.0	0.0	0.0	1.2	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	0.0	0.0	5.7	0.0	0.0	2.8	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	0.0	9.6	0.0	0.0	30.3	0.0	0.0	34.4	0.0	0.0
LnGrp LOS	C	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		851			659			159			254	
Approach Delay, s/veh		20.3			9.6			30.3			34.4	
Approach LOS		C			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.5		21.5		58.5		21.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		36.5		14.6		18.9		10.6				
Green Ext Time (p_c), s		4.5		0.8		5.2		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	20.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	821	19	0	767	21	55	8	0	23	3	53
Future Vol, veh/h	89	821	19	0	767	21	55	8	0	23	3	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	6	6	2	2	8	8	2	2	2	19	2	19
Mvmt Flow	92	846	20	0	791	22	57	8	0	24	3	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	813	0	0	866	0	0	1871	1853	856	1846	1852	802
Stage 1	-	-	-	-	-	-	1040	1040	-	802	802	-
Stage 2	-	-	-	-	-	-	831	813	-	1044	1050	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	6	6.52	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.29	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.29	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3	4.018	3
Pot Cap-1 Maneuver	797	-	-	777	-	-	~ 55	74	357	108	74	432
Stage 1	-	-	-	-	-	-	278	307	-	405	396	-
Stage 2	-	-	-	-	-	-	364	392	-	290	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	797	-	-	777	-	-	~ 38	57	357	80	57	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 38	57	-	80	57	-
Stage 1	-	-	-	-	-	-	216	239	-	315	396	-
Stage 2	-	-	-	-	-	-	315	392	-	218	236	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	$ 527.7	43.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	40	797	-	-	777	-	-	171
HCM Lane V/C Ratio	1.624	0.115	-	-	-	-	-	0.476
HCM Control Delay (s)	$ 527.7	10.1	0	-	0	-	-	43.9
HCM Lane LOS	F	B	A	-	A	-	-	E
HCM 95th %tile Q(veh)	6.7	0.4	-	-	0	-	-	2.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	4	8	51	4	0
Future Vol, veh/h	5	4	8	51	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	7	5	11	69	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.5	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	14%
Vol Thru, %	0%	56%	86%
Vol Right, %	0%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	9	59
LT Vol	4	0	8
Through Vol	0	5	51
RT Vol	0	4	0
Lane Flow Rate	5	12	80
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.015	0.091
Departure Headway (Hd)	4.685	4.553	4.099
Convergence, Y/N	Yes	Yes	Yes
Cap	761	787	878
Service Time	2.732	2.574	2.107
HCM Lane V/C Ratio	0.007	0.015	0.091
HCM Control Delay	7.8	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	81	89	739	55	54
Future Volume (veh/h)	653	81	89	739	55	54
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	695	86	95	786	59	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1210	150	144	1081	80	77
Arrive On Green	0.75	0.75	1.00	1.00	0.10	0.10
Sat Flow, veh/h	1606	199	125	1434	827	799
Grp Volume(v), veh/h	0	781	881	0	117	0
Grp Sat Flow(s),veh/h/ln	0	1805	1559	0	1641	0
Q Serve(g_s), s	0.0	15.0	5.6	0.0	5.6	0.0
Cycle Q Clear(g_c), s	0.0	15.0	20.7	0.0	5.6	0.0
Prop In Lane		0.11	0.11		0.50	0.49
Lane Grp Cap(c), veh/h	0	1360	1224	0	158	0
V/C Ratio(X)	0.00	0.57	0.72	0.00	0.74	0.00
Avail Cap(c_a), veh/h	0	1360	1224	0	308	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.67	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.3	0.1	0.0	35.2	0.0
Incr Delay (d2), s/veh	0.0	1.8	2.5	0.0	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	0.8	0.0	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.0	2.6	0.0	41.8	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	781			881	117	
Approach Delay, s/veh	6.0			2.6	41.8	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	66.3	66.3	13.7
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	17.0	22.7	7.6
Green Ext Time (p_c), s	7.0	9.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	725	789	5	9	16
Future Vol, veh/h	30	725	789	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	32	771	839	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	844	0	-	0	1677	842
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	835	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	784	-	-	-	98	348
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	408	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	784	-	-	-	91	348
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	408	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	29.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	784	-	-	-	173
HCM Lane V/C Ratio	0.041	-	-	-	0.154
HCM Control Delay (s)	9.8	0	-	-	29.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	385	126	9	652	55	111	81	8	92	162	44
Future Volume (veh/h)	75	385	126	9	652	55	111	81	8	92	162	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	77	393	129	9	665	56	113	83	8	94	165	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	141	687	213	50	1027	86	189	121	10	148	205	51
Arrive On Green	0.21	0.21	0.21	0.62	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	145	1104	343	7	1649	138	522	533	43	393	903	225
Grp Volume(v), veh/h	599	0	0	730	0	0	204	0	0	304	0	0
Grp Sat Flow(s),veh/h/ln	1592	0	0	1794	0	0	1098	0	0	1521	0	0
Q Serve(g_s), s	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	25.7	0.0	0.0	20.6	0.0	0.0	14.7	0.0	0.0	15.5	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.55		0.04	0.31		0.15
Lane Grp Cap(c), veh/h	1042	0	0	1162	0	0	320	0	0	405	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.63	0.00	0.00	0.64	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	1042	0	0	1162	0	0	383	0	0	478	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	9.6	0.0	0.0	29.0	0.0	0.0	29.7	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	2.6	0.0	0.0	2.6	0.0	0.0	5.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	0.0	7.6	0.0	0.0	3.8	0.0	0.0	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	0.0	12.2	0.0	0.0	31.7	0.0	0.0	35.2	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		599			730			204			304	
Approach Delay, s/veh		23.6			12.2			31.7			35.2	
Approach LOS		C			B			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2		55.8		24.2				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		27.7		17.5		22.6		16.7				
Green Ext Time (p_c), s		4.4		0.7		5.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			21.9									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	16.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	83	790	62	0	782	39	36	5	0	48	9	58
Future Vol, veh/h	83	790	62	0	782	39	36	5	0	48	9	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	4	4	2	2	6	6	2	2	2	7	2	7
Mvmt Flow	86	823	65	0	815	41	38	5	0	50	9	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	856	0	0	888	0	0	1898	1884	856	1866	1896	836
Stage 1	-	-	-	-	-	-	1028	1028	-	836	836	-
Stage 2	-	-	-	-	-	-	870	856	-	1030	1060	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.12	6.52	6.22	6	6.52	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.17	5.52	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.518	4.018	3.318	3	4.018	3
Pot Cap-1 Maneuver	776	-	-	763	-	-	53	71	357	106	70	414
Stage 1	-	-	-	-	-	-	283	311	-	398	382	-
Stage 2	-	-	-	-	-	-	346	374	-	306	301	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	763	-	-	~ 33	55	357	82	54	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 33	55	-	82	54	-
Stage 1	-	-	-	-	-	-	220	242	-	310	382	-
Stage 2	-	-	-	-	-	-	288	374	-	233	234	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	$ 400.2	126
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	35	776	-	-	763	-	-	129
HCM Lane V/C Ratio	1.22	0.111	-	-	-	-	-	0.929
HCM Control Delay (s)	$ 400.2	10.2	0	-	0	-	-	126
HCM Lane LOS	F	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	4.5	0.4	-	-	0	-	-	6.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	1	11	85	7	3
Future Vol, veh/h	11	1	11	85	7	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	14	1	14	108	9	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.7	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	11%
Vol Thru, %	0%	92%	89%
Vol Right, %	30%	8%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	12	96
LT Vol	7	0	11
Through Vol	0	11	85
RT Vol	3	1	0
Lane Flow Rate	13	15	122
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.017	0.136
Departure Headway (Hd)	4.472	3.962	4.024
Convergence, Y/N	Yes	Yes	Yes
Cap	795	901	893
Service Time	2.532	1.996	2.037
HCM Lane V/C Ratio	0.016	0.017	0.137
HCM Control Delay	7.6	7.1	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	731	39	84	549	34	68
Future Volume (veh/h)	731	39	84	549	34	68
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	803	43	92	603	37	75
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1350	72	163	1041	50	102
Arrive On Green	0.76	0.76	1.00	1.00	0.09	0.09
Sat Flow, veh/h	1787	96	148	1378	531	1076
Grp Volume(v), veh/h	0	846	695	0	113	0
Grp Sat Flow(s),veh/h/ln	0	1883	1526	0	1621	0
Q Serve(g_s), s	0.0	16.0	4.7	0.0	5.4	0.0
Cycle Q Clear(g_c), s	0.0	16.0	20.6	0.0	5.4	0.0
Prop In Lane		0.05	0.13		0.33	0.66
Lane Grp Cap(c), veh/h	0	1422	1204	0	154	0
V/C Ratio(X)	0.00	0.59	0.58	0.00	0.74	0.00
Avail Cap(c_a), veh/h	0	1422	1204	0	304	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.81	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.4	0.2	0.0	35.2	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.6	0.0	6.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	0.5	0.0	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.2	1.8	0.0	41.9	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	846			695	113	
Approach Delay, s/veh	6.2			1.8	41.9	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		66.4				66.4		13.6
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		18.0				22.6		7.4
Green Ext Time (p_c), s		7.8				6.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	767	580	3	3	9
Future Vol, veh/h	15	767	580	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	843	637	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	640	0	-	0	1514	639
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	875	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	954	-	-	-	133	480
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	411	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	954	-	-	-	129	480
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	411	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	954	-	-	-	286
HCM Lane V/C Ratio	0.017	-	-	-	0.046
HCM Control Delay (s)	8.8	0	-	-	18.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	623	44	14	514	51	47	52	11	74	70	81
Future Volume (veh/h)	84	623	44	14	514	51	47	52	11	74	70	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	91	677	48	15	559	55	51	57	12	80	76	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	146	983	67	57	1105	107	151	153	27	140	106	105
Arrive On Green	0.45	0.45	0.45	0.67	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	143	1459	100	16	1641	159	492	865	151	456	601	596
Grp Volume(v), veh/h	816	0	0	629	0	0	120	0	0	244	0	0
Grp Sat Flow(s),veh/h/ln	1702	0	0	1816	0	0	1507	0	0	1652	0	0
Q Serve(g_s), s	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	29.7	0.0	0.0	13.6	0.0	0.0	5.2	0.0	0.0	11.2	0.0	0.0
Prop In Lane	0.11		0.06	0.02		0.09	0.42		0.10	0.33		0.36
Lane Grp Cap(c), veh/h	1196	0	0	1269	0	0	330	0	0	351	0	0
V/C Ratio(X)	0.68	0.00	0.00	0.50	0.00	0.00	0.36	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1196	0	0	1269	0	0	481	0	0	505	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	6.5	0.0	0.0	29.1	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.4	0.0	0.0	0.7	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.0	0.0	4.7	0.0	0.0	2.1	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	0.0	7.9	0.0	0.0	29.8	0.0	0.0	34.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		816			629			120			244	
Approach Delay, s/veh		17.4			7.9			29.8			34.0	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.9		20.1		59.9		20.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		31.7		13.2		15.6		7.2				
Green Ext Time (p_c), s		5.6		0.9		5.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	14.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	748	50	0	601	25	43	6	0	27	7	72
Future Vol, veh/h	80	748	50	0	601	25	43	6	0	27	7	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	2	2	1	1	2	2	2	1	2	1
Mvmt Flow	90	840	56	0	675	28	48	7	0	30	8	81

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	703	0	0	896	0	0	1782	1751	868	1741	1765	689
Stage 1	-	-	-	-	-	-	1048	1048	-	689	689	-
Stage 2	-	-	-	-	-	-	734	703	-	1052	1076	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	6	6.52	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3	4.018	3
Pot Cap-1 Maneuver	899	-	-	757	-	-	64	86	352	125	84	500
Stage 1	-	-	-	-	-	-	275	305	-	490	446	-
Stage 2	-	-	-	-	-	-	412	440	-	302	296	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	899	-	-	757	-	-	~ 41	69	352	98	67	500
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 41	69	-	98	67	-
Stage 1	-	-	-	-	-	-	219	243	-	391	446	-
Stage 2	-	-	-	-	-	-	339	440	-	234	236	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	$ 380.3	45.6
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	43	899	-	-	757	-	-	202
HCM Lane V/C Ratio	1.28	0.1	-	-	-	-	-	0.59
HCM Control Delay (s)	$ 380.3	9.4	0	-	0	-	-	45.6
HCM Lane LOS	F	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	5.4	0.3	-	-	0	-	-	3.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	3	9	43	8	2
Future Vol, veh/h	8	3	9	43	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	4	11	51	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.9	7.3	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	17%
Vol Thru, %	0%	73%	83%
Vol Right, %	20%	27%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	11	52
LT Vol	8	0	9
Through Vol	0	8	43
RT Vol	2	3	0
Lane Flow Rate	12	13	62
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.014	0.068
Departure Headway (Hd)	4.07	3.804	3.966
Convergence, Y/N	Yes	Yes	Yes
Cap	878	943	908
Service Time	2.1	1.819	1.972
HCM Lane V/C Ratio	0.014	0.014	0.068
HCM Control Delay	7.2	6.9	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

APPENDIX G:

CLUBHOUSE / CATERING HALL TRIP GENERATION CALCULATIONS

Traffic studies are charged with analyzing near-peak conditions anticipated to occur at least 20 times per year during the analyzed time periods, what AASHTO[1] refers to as the 20th highest hour. This is standard engineering practice to examine genuine day-to-day traffic and the need for mitigation. Busier conditions that occur less frequently are not appropriate to analyze with respect to required mitigation. For the catering function at The Clubhouse, this traffic study therefore considers events anticipated to occur at least twice per month (i.e. 24 times per year).

The Woodmere Club reportedly accommodates 50 guests in the dining room or up to 300 guests in the ballroom; the proposed zoning would not change this. Based on our analysis at other catering establishments and on personal experience, events with the highest guest counts are generally held outside the peak hours analyzed for this study: Friday/Saturday/Sunday night and Sunday late afternoon. An important added consideration is the large local Jewish demographic as it relates to this study analyzing June and the peak golf season in Alternative C (see Appendix H). The April-October golf season has up to ±50 days when Jewish weddings and Bar Mitzvahs (which tend to be large events) are prohibited.[2]

Smaller events with use of the dining room would comprise most events held during the weekday AM-PM and Weekend Midday peak hours analyzed for this report. And it is important to note that these events could happen several times a week, but likely not every day. Breakfast events would be the most common; lunchtime meetings would occur less frequently, particularly on weekdays. Weeknight events have their peak traffic after the end of the weekday PM peak hour. The resulting calculations for each peak hour are detailed below.

Weekday AM peak hour: The near-peak morning events would be at 85% capacity with attendees mostly using separate vehicles, an average occupancy of 1.1 guests per vehicle. These events are not anticipated every day but would occur frequently enough to require analysis. Morning events are generally at least one hour, so entering and exiting traffic happens during different hours. Since the AM peak hour starts before 8:00 a.m., it includes traffic associated with the start of the event (rare for morning events to end by 8:00 a.m.) Further, morning events would likely be comprised of a sizeable percentage of local traffic, where drivers are already in the area. It is not likely that the Clubhouse would attract groups based far outside the local area. Therefore, half of "morning meeting traffic" was considered to represent new trips.

Weekday PM peak hour: Evening events beginning at 6:00 p.m. or later are well after the PM peak hour at the study intersections that ends by 5:30 p.m. Weeknight Clubhouse events are not considered in this study; after the weekday PM peak hour ends, background traffic decreases.

Weekend Midday peak hours: This study considers smaller weekend events that might start before 2:00 p.m. (during the weekend midday peak period). This study considers 50 attendees

[1] AASHTO is the American Association of State Highway and Transportation Officials
[2] May through August (peak golf season) includes 24 days for the Omer, Shavuot, and the Three Weeks. Up to 36 additional days may also coincide with golf season: 25 days in September or October for the High Holidays, Sukkot, Simchat Torah, and Shemini Atzeret; and 11 days in March or April for Purim and Passover. The month can vary by ±4 weeks because Jewish holidays are based on a lunar calendar, but always occur in the noted 2-month windows.

per event (weekend events are more likely to be "full") at an average of 2 guests per vehicle based on local catering hall data and personal experience. Weekend events are more likely than weekday events to accommodate guests from well outside the area, so no "local traffic" adjustment was taken for weekend events.

Weekend events last longer than one hour, so peak entering traffic occurs in a different hour from peak exiting traffic. Based on research and local knowledge, this analysis adds 10% of the entering or exiting guest trips in the opposite direction (i.e. 25 in and 3 out at the start of the event; 3 in and 25 out at the end of the event). This accounts for vendors who are not on-site the entire time and/or on-demand ride service drop-off and pickup activity (e.g. Uber). Building staff and vendors tend to arrive and leave outside peak periods as a matter of course.

*Weekend Nighttime hours **(for reference only, not analyzed)**:* Near-peak events generally hold roughly 85% guest capacity (255 guests) at an average of 2.5 guests per vehicle (102 guest trips). These ratios are based on local catering hall data and on the knowledge of how people generally plan these types of events: a venue's capacity must exceed desired attendance, and generally 5-10% of invited guests are unable to attend. Event attendees typically arrive as couples or groups.

The resulting traffic generation per hour would be as shown below:

- Breakfast events (weekday/weekend morning): 39 in/4 out (50-person capacity*0.85/1.1)
  - Of these, 20 in/3 out are anticipated to be new trips using Broadway
- Lunch events (weekday/weekend midday): 25 in/3 out (50-person capacity/2)

A potential modification under the proposed code is to expand or retrofit The Clubhouse building to accommodate ±15 new overnight stay rooms/suites, which would function like a hotel for the purposes of a traffic study. Trip generation information was referenced from the *ITE Trip Generation Manual* (10th Edition). To be conservative, no credit was taken for Clubhouse guests who stay overnight before/after a nighttime event, and as shown below, lodging-related trips are minimal. The resulting trip generation would be as follows:

Table 2: Clubhouse Peak Hour Trips

	Catering-Related	Lodging-Related	Total
Weekday AM Peak Hour	Enter: 20 tph Exit: 0 tph Total: 20 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 23 tph Exit: 2 tph Total: 25 tph
Weekday PM Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph	Enter: 3 tph Exit: 2 tph Total: 5 tph
Weekend Midday Peak Hour with a catered event	Enter: 25 tph Exit: 3 tph Total: 28 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 27 tph Exit: 4 tph Total: 31 tph
Weekend Midday Peak Hour (no catered event)	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph	Enter: 2 tph Exit: 1 tph Total: 3 tph

APPENDIX H:

GOLF COURSE
TRIP GENERATION CALCULATIONS

This section includes research from the ITE *Trip Generation Manual* (10th Edition); Cameron Engineering Golf Course Traffic Counts, Summer 2017; and Town of Hempstead Merrick Golf Course data from 2017 through 2019.

The trip generation projections for Alternative C's programmed open space are based on local research into golf course traffic patterns, including at the Town's existing 9-hole course, USGA (United States Golf Association) data, and ITE (Institute of Transportation Engineers) data.

<u>Monthly Variation</u>: Golf courses are only open from spring through early fall. Peak season is generally mid-May through mid-September; mid-April through mid-May and mid-September to mid-October are when golf courses are gearing up or down for the season.

The golf course would generate zero trips for roughly 6 months a year and would generate limited traffic for 2 months a year. Peak golf activity only reflects about 4 months a year.

Long Island golf courses generally open around 7:00 a.m. on weekdays and 6:00 a.m. on weekends. June to August, opening time could be as early as 6:00 a.m. on weekdays as well. This study takes a conservative approach and considers golfers teeing off by 6:00 a.m. so that there would be some exiting traffic during the weekday AM peak hour. Otherwise, there would be no exiting AM peak hour traffic, since a 9-hole course takes at least about 2 hours to complete.

Closing times for a golf course depend on available daylight. The last tee-off may be set for golfers to finish by about 8:00 p.m. in the summer when days are longer, but the last hole may need to be played by 6:00 or 7:00 p.m. in April and September (earlier sunset times).

This study analyzes the golf course trip numbers with peak spring/summer activity, reflecting the busiest 4 months out of the year.

<u>*9-hole vs. 18-hole Golf Courses*</u>: A 9-hole course takes roughly 2-2½ hours to complete, half the time it takes to complete an 18-hole course. The first foursome tees off as soon as the course opens, and subsequent foursomes start as soon as the previous groups move on to the second hole. This pattern continues throughout the day whether the course has 9 or 18 holes. Therefore, traffic generation is similar or the same regardless of course size, while parking demand is notably smaller at 9-hole courses because fewer groups can be accommodated at any one time.

<u>Day-to-day</u>: The expected arrangement is for players to reserve tee times in advance, particularly during preferred times such as the start of the day through early afternoon. Walk-ins may be permitted and would be likeliest during down times, such as late afternoon/early evening. The USGA notes that a core appeal of 9- vs. 18-hole courses is the ±2 to 2½-hour time savings per round, and in fact, issued new game play rules in 2019 to speed up play.[3] It is not realistic that players would routinely and willingly spend an hour-plus waiting to tee off for a 2 to 2½ hour game, which would mean spending one third of their time at the course waiting to start.

For typical course difficulty and par counts, peak capacity is generally one foursome every ±9

[3] https://www.usga.org/rules-hub/2019-rules-notebook--amateur-championships/pace-of-play.html

minutes (6 or 7 foursomes per hour), generally tapering off later in the day during the summer. For information, the Golf Club at Middle Bay (in Oceanside) posts tee times, rarely more than 7 per hour. If single players or couples come to play, course staff combine smaller groups to create foursomes, particularly during peak periods.

Since 9-hole courses take at least 2 hours, there is limited exit activity compared to entry activity during the weekday AM peak hour (which ends by 9:00 a.m.)

This study projects peak season golf course trips based on multiple available data sources: foursome-related calculations, the ITE *Trip Generation Manual (10th Edition)*, Cameron Engineering June 2017-July 2017 traffic counts at four golf courses in southwest Nassau County[4], and data for the 2017, 2018, and 2019 golf seasons at the Town's 9-hole golf course in Merrick. Below are the results based on the average of the compiled data:

Table 3: Day to Day Golf Trip Generation – 4 months a year only

AM Peak Hour	Trips In	Trips Out	Total Trips
Middle Bay	27	3	30
Inwood	13	5	18
Woodmere	6	5	11
Merrick Calculation	17	3	20
ITE *Trip Generation Manual*	16	4	20
Peak Foursome Calculation	28	28	56
Average of Compiled AM Data	18	8	26
PM Peak Hour	Trips In	Trips Out	Total Trips
Middle Bay	19	25	44
Inwood	10	23	33
Woodmere	15	12	27
Merrick Calculation	17	17	34
ITE *Trip Generation Manual*	21	20	41
Peak Foursome Calculation	14	14	28
Average of Compiled PM Data	16	19	35
Weekend Midday Peak Hour	Trips In	Trips Out	Total Trips
Middle Bay	19	26	45
North Woodmere Park	28	26	54
Merrick Calculation	22	22	44
ITE *Trip Generation Manual*	20	20	40
Peak Foursome Calculation	28	28	56
Average of Compiled Weekend Midday Data	23	24	47

[4] Some locations were counted during only one or two timeframes; excluded timeframes are not shown

As noted earlier, peak golf season lasts roughly 4 months out of the year. On an annual basis, 67% of the time there will be fewer trips for the golf course than shown in Table 3. The annual traffic patterns would be summarized as follows, with limited (±50% of the peak) activity during the months when golf is gearing up for the season or winding down after the summer. For the purposes of this study, these periods are called "intermediate months" to distinguish them from the peak season and off-season.

Table 4: Day to Day Golf Trip Generation – By Month

	50% of the year Off Season 6 months October to April	**17% of the year** Intermediate Months mid-April to mid-May and mid-September to mid-October	**33% of the year** Peak Season 4 months mid-May to mid-September
Weekday AM Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 9 tph Exit: 4 tph Total: 13 tph	Enter: 18 tph Exit: 8 tph Total: 26 tph
Weekday PM Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 8 tph Exit: 10 tph Total: 18 tph	Enter: 16 tph Exit: 19 tph Total: 35 tph
Weekend Midday Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 12 tph Exit: 12 tph Total: 24 tph	Enter: 23 tph Exit: 24 tph Total: 47 tph

Seasonality is a noteworthy benefit of the proposed zoning code; for traffic generation purposes, catering and golf are complementary uses. Most of the time, there is limited or no additional traffic associated with a golf course use. There is a further seasonal benefit in that spring/summer golf often coincides with blackout dates for the local Jewish community, in that there are up to roughly 50 days in the spring and summer (but none from November to March) when Jewish weddings and Bar Mitzvahs are not allowed. This reduces the frequency of larger catered events at this particular site during times when golf is busiest, and vice versa. Appendix G (Catering Hall Trip Generation) includes a lengthier discussion on this.

Golf Outings: A 9-hole course can host outings and events, similar in frequency to an 18-hole course (i.e. one or two Mondays a month). Long Island golf outings are almost always on a Monday. A reasonable projection is for two outings per month in May and September and one a month in April and June to August. October outings on Long Island are rare. Annual frequency is too small to represent the 20^{th} highest hour; outings are discussed for reference only.

A 9-hole course takes roughly 2-2½ hours to complete, so whereas 18-hole course events usually start mid-morning, 9-hole course events generally start mid-afternoon. Start times are often geared towards ending play close to 6:00 or 6:30 p.m. so players can enjoy a catered dinner before they leave for the evening (this is sometimes called a "Nine and Dine" event). Of note, outings generate little to no weekday PM peak hour traffic because they begin before 4:00 and last until at least 7:00 p.m., notwithstanding some golfers may leave before dinner (not enough to change anticipated traffic on a weekly basis).

Based on Cameron Engineering counts at the Molloy Classic Golf Outing at the Hempstead Country Club in June 2017, and reducing those counts by 40% to conservatively adjust for the total difference between an 18-hole and 9-hole course. Unlike day-to-day play, outing traffic is concentrated at the start and end of the event. Cameron Engineering observed the end of the outing (4 trips in, 81 trips out). The 40% adjustment for a 9-hole course results in 3 projected trips in, 49 trips out, with the reverse pattern for the entry period (49 trips in, 3 trips out).

Below are the projected outing traffic volumes on one or two Mondays a month during the spring and summer:

Table 5: Outing Golf Traffic Patterns

	50% of the year Off Season October to April	**50% of the year** Golf Season April to October
Mondays Before 4:00 p.m.	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 49 tph Exit: 3 tph Total: 52 tph
Monday PM Peak Hour	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 0 tph Exit: 0 tph Total: 0 tph
Mondays At or after 7:00 p.m.	Enter: 0 tph Exit: 0 tph Total: 0 tph	Enter: 3 tph Exit: 49 tph Total: 52 tph

APPENDIX I:

PROPOSED ACTION / CHANGE OF ZONE
SCENARIO A

LEVEL OF SERVICE/CAPACITY WORKSHEETS

Signalized Intersections

1. Broadway at Meadow Drive
2. Broadway at Woodmere Boulevard

Unsignalized Intersections

1. Broadway at Pine Street
2. Broadway at Prospect Avenue
3. Albro Lane at Atlantic Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	791	18	21	694	57	27
Future Volume (veh/h)	791	18	21	694	57	27
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	815	19	22	715	59	28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1346	31	64	1321	86	41
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1748	41	23	1716	1068	507
Grp Volume(v), veh/h	0	834	737	0	88	0
Grp Sat Flow(s),veh/h/ln	0	1789	1739	0	1592	0
Q Serve(g_s), s	0.0	16.1	0.0	0.0	4.3	0.0
Cycle Q Clear(g_c), s	0.0	16.1	0.0	0.0	4.3	0.0
Prop In Lane		0.02	0.03		0.67	0.32
Lane Grp Cap(c), veh/h	0	1377	1385	0	128	0
V/C Ratio(X)	0.00	0.61	0.53	0.00	0.69	0.00
Avail Cap(c_a), veh/h	0	1377	1385	0	299	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.74	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.0	0.0	0.0	35.8	0.0
Incr Delay (d2), s/veh	0.0	2.0	1.1	0.0	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	0.4	0.0	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.0	1.1	0.0	42.3	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	834			737	88	
Approach Delay, s/veh	6.0			1.1	42.3	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	67.6	67.6	12.4
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	18.1	2.0	6.3
Green Ext Time (p_c), s	7.7	6.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	808	744	7	1	16
Future Vol, veh/h	3	808	744	7	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	833	767	7	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	774	0	-	0	1610	771
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	839	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	820	-	-	-	105	374
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	820	-	-	-	104	374
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	397	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	820	-	-	-	324
HCM Lane V/C Ratio	0.004	-	-	-	0.054
HCM Control Delay (s)	9.4	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	644	57	16	557	46	64	80	7	65	89	87
Future Volume (veh/h)	67	644	57	16	557	46	64	80	7	65	89	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	70	671	59	17	580	48	67	83	7	68	93	91
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	115	937	80	58	1024	83	149	161	11	120	125	106
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	100	1424	121	18	1556	127	441	838	60	328	653	554
Grp Volume(v), veh/h	800	0	0	645	0	0	157	0	0	252	0	0
Grp Sat Flow(s),veh/h/ln	1646	0	0	1701	0	0	1339	0	0	1535	0	0
Q Serve(g_s), s	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	31.1	0.0	0.0	16.3	0.0	0.0	8.3	0.0	0.0	12.5	0.0	0.0
Prop In Lane	0.09		0.07	0.03		0.07	0.43		0.04	0.27		0.36
Lane Grp Cap(c), veh/h	1132	0	0	1165	0	0	321	0	0	352	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.55	0.00	0.00	0.49	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1132	0	0	1165	0	0	440	0	0	473	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	0.0	7.5	0.0	0.0	29.1	0.0	0.0	31.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	1.9	0.0	0.0	1.1	0.0	0.0	3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	0.0	5.5	0.0	0.0	2.8	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	0.0	0.0	9.4	0.0	0.0	30.3	0.0	0.0	34.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		800			645			157			252	
Approach Delay, s/veh		18.8			9.4			30.3			34.4	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.6		21.4		58.6		21.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		33.1		14.5		18.3		10.3				
Green Ext Time (p_c), s		5.1		0.8		5.1		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			18.6
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	816	755	23	24	53
Future Vol, veh/h	89	816	755	23	24	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	6	6	8	8	19	19
Mvmt Flow	92	841	778	24	25	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	802	0	-	0	1815	790
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	1025	-
Critical Hdwy	4.16	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.254	-	-	-	3	3
Pot Cap-1 Maneuver	804	-	-	-	113	439
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	804	-	-	-	89	439
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	35.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	804	-	-	-	197
HCM Lane V/C Ratio	0.114	-	-	-	0.403
HCM Control Delay (s)	10.1	0	-	-	35.1
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	1.8

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	4	8	45	4	0
Future Vol, veh/h	3	4	8	45	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	4	5	11	61	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.5	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	15%
Vol Thru, %	0%	43%	85%
Vol Right, %	0%	57%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	7	53
LT Vol	4	0	8
Through Vol	0	3	45
RT Vol	0	4	0
Lane Flow Rate	5	9	72
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.012	0.082
Departure Headway (Hd)	4.666	4.471	4.1
Convergence, Y/N	Yes	Yes	Yes
Cap	765	802	877
Service Time	2.709	2.49	2.107
HCM Lane V/C Ratio	0.007	0.011	0.082
HCM Control Delay	7.7	7.5	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	68	33	739	48	21
Future Volume (veh/h)	653	68	33	739	48	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	695	72	35	786	51	22
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1271	132	78	1332	87	37
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1640	170	40	1719	1157	499
Grp Volume(v), veh/h	0	767	821	0	74	0
Grp Sat Flow(s),veh/h/ln	0	1810	1759	0	1678	0
Q Serve(g_s), s	0.0	13.2	0.0	0.0	3.4	0.0
Cycle Q Clear(g_c), s	0.0	13.2	0.0	0.0	3.4	0.0
Prop In Lane		0.09	0.04		0.69	0.30
Lane Grp Cap(c), veh/h	0	1403	1410	0	126	0
V/C Ratio(X)	0.00	0.55	0.58	0.00	0.59	0.00
Avail Cap(c_a), veh/h	0	1403	1410	0	315	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.72	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.5	0.0	0.0	35.8	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.3	0.0	4.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.5	0.0	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.1	1.3	0.0	40.1	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	767			821	74	
Approach Delay, s/veh	5.1			1.3	40.1	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	68.0	68.0	12.0
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	15.2	2.0	5.4
Green Ext Time (p_c), s	6.8	8.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	712	782	5	9	16
Future Vol, veh/h	30	712	782	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	32	757	832	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	837	0	-	0	1656	835
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	821	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	789	-	-	-	101	351
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	789	-	-	-	94	351
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	414	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	789	-	-	-	177
HCM Lane V/C Ratio	0.04	-	-	-	0.15
HCM Control Delay (s)	9.8	0	-	-	28.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	359	123	9	607	55	106	81	8	92	162	39
Future Volume (veh/h)	72	359	123	9	607	55	106	81	8	92	162	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	73	366	126	9	619	56	108	83	8	94	165	40
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	143	689	224	50	1025	92	186	125	10	149	206	46
Arrive On Green	0.42	0.42	0.42	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	148	1102	359	7	1638	147	520	557	45	400	918	204
Grp Volume(v), veh/h	565	0	0	684	0	0	199	0	0	299	0	0
Grp Sat Flow(s),veh/h/ln	1608	0	0	1792	0	0	1122	0	0	1522	0	0
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	18.9	0.0	0.0	18.4	0.0	0.0	13.8	0.0	0.0	15.2	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.54		0.04	0.31		0.13
Lane Grp Cap(c), veh/h	1057	0	0	1167	0	0	321	0	0	400	0	0
V/C Ratio(X)	0.53	0.00	0.00	0.59	0.00	0.00	0.62	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	1057	0	0	1167	0	0	389	0	0	478	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.1	0.0	0.0	9.0	0.0	0.0	28.9	0.0	0.0	29.8	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	0.0	6.7	0.0	0.0	3.7	0.0	0.0	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	0.0	11.2	0.0	0.0	31.1	0.0	0.0	35.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		565			684			199			299	
Approach Delay, s/veh		15.7			11.2			31.1			35.0	
Approach LOS		B			B			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.1		23.9		56.1		23.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		20.9		17.2		20.4		15.8				
Green Ext Time (p_c), s		4.5		0.7		5.3		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			19.0
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	775	774	41	50	58
Future Vol, veh/h	83	775	774	41	50	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	4	4	6	6	7	7
Mvmt Flow	86	807	806	43	52	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	849	0	-	0	1807	828
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	979	-
Critical Hdwy	4.14	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.236	-	-	-	3	3
Pot Cap-1 Maneuver	780	-	-	-	114	418
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	780	-	-	-	91	418
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	397	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	71.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	780	-	-	-	157
HCM Lane V/C Ratio	0.111	-	-	-	0.717
HCM Control Delay (s)	10.2	0	-	-	71.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	4.3

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	1	11	81	7	3
Future Vol, veh/h	4	1	11	81	7	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	5	1	14	103	9	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.9	7.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	12%
Vol Thru, %	0%	80%	88%
Vol Right, %	30%	20%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	5	92
LT Vol	7	0	11
Through Vol	0	4	81
RT Vol	3	1	0
Lane Flow Rate	13	6	116
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.007	0.13
Departure Headway (Hd)	4.449	3.889	4.019
Convergence, Y/N	Yes	Yes	Yes
Cap	800	918	896
Service Time	2.502	1.92	2.029
HCM Lane V/C Ratio	0.016	0.007	0.129
HCM Control Delay	7.6	6.9	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	731	38	35	549	33	28
Future Volume (veh/h)	731	38	35	549	33	28
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	803	42	38	603	36	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1387	73	93	1344	66	57
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1790	94	58	1734	879	757
Grp Volume(v), veh/h	0	845	641	0	68	0
Grp Sat Flow(s),veh/h/ln	0	1883	1792	0	1661	0
Q Serve(g_s), s	0.0	14.7	0.0	0.0	3.2	0.0
Cycle Q Clear(g_c), s	0.0	14.7	0.0	0.0	3.2	0.0
Prop In Lane		0.05	0.06		0.53	0.46
Lane Grp Cap(c), veh/h	0	1459	1436	0	125	0
V/C Ratio(X)	0.00	0.58	0.45	0.00	0.55	0.00
Avail Cap(c_a), veh/h	0	1459	1436	0	311	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.85	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.7	0.0	0.0	35.7	0.0
Incr Delay (d2), s/veh	0.0	1.7	0.9	0.0	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.3	0.0	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.4	0.9	0.0	39.4	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	845			641	68	
Approach Delay, s/veh	5.4			0.9	39.4	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	68.0	68.0	12.0
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	16.7	2.0	5.2
Green Ext Time (p_c), s	7.9	5.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	766	579	3	3	9
Future Vol, veh/h	15	766	579	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	842	636	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	639	0	-	0	1512	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	874	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	955	-	-	-	134	480
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	412	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	955	-	-	-	130	480
Mov Cap-2 Maneuver	-	-	-	-	130	-
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	412	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	955	-	-	-	287
HCM Lane V/C Ratio	0.017	-	-	-	0.046
HCM Control Delay (s)	8.8	0	-	-	18.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	589	41	14	475	51	43	52	11	74	70	77
Future Volume (veh/h)	80	589	41	14	475	51	43	52	11	74	70	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	87	640	45	15	516	55	47	57	12	80	76	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	146	990	67	58	1098	115	145	159	28	141	106	101
Arrive On Green	0.45	0.45	0.45	0.68	0.68	0.68	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	143	1465	100	18	1626	170	470	912	160	462	608	576
Grp Volume(v), veh/h	772	0	0	586	0	0	116	0	0	240	0	0
Grp Sat Flow(s),veh/h/ln	1708	0	0	1814	0	0	1542	0	0	1647	0	0
Q Serve(g_s), s	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	27.2	0.0	0.0	12.1	0.0	0.0	4.9	0.0	0.0	11.1	0.0	0.0
Prop In Lane	0.11		0.06	0.03		0.09	0.41		0.10	0.33		0.35
Lane Grp Cap(c), veh/h	1203	0	0	1271	0	0	333	0	0	348	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.46	0.00	0.00	0.35	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1203	0	0	1271	0	0	487	0	0	504	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.2	0.0	0.0	6.2	0.0	0.0	29.1	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.2	0.0	0.0	0.6	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	0.0	4.1	0.0	0.0	2.0	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	0.0	0.0	7.4	0.0	0.0	29.8	0.0	0.0	34.1	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		772			586			116			240	
Approach Delay, s/veh		16.3			7.4			29.8			34.1	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		20.0		60.0		20.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		29.2		13.1		14.1		6.9				
Green Ext Time (p_c), s		5.6		0.9		4.5		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		16.7
HCM 6th LOS		B

Intersection						
Int Delay, s/veh	2.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	745	599	26	29	72
Future Vol, veh/h	80	745	599	26	29	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	90	837	673	29	33	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	702	0	-	0	1705	688
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	1017	-
Critical Hdwy	4.11	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3	3
Pot Cap-1 Maneuver	900	-	-	-	131	501
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	386	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	900	-	-	-	107	501
Mov Cap-2 Maneuver	-	-	-	-	107	-
Stage 1	-	-	-	-	456	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	32
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	900	-	-	-	244
HCM Lane V/C Ratio	0.1	-	-	-	0.465
HCM Control Delay (s)	9.4	0	-	-	32
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2.3

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	3	9	39	8	2
Future Vol, veh/h	3	3	9	39	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	4	11	46	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.7	7.2	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	19%
Vol Thru, %	0%	50%	81%
Vol Right, %	20%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	6	48
LT Vol	8	0	9
Through Vol	0	3	39
RT Vol	2	3	0
Lane Flow Rate	12	7	57
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.007	0.063
Departure Headway (Hd)	4.051	3.664	3.964
Convergence, Y/N	Yes	Yes	Yes
Cap	883	979	908
Service Time	2.076	1.678	1.969
HCM Lane V/C Ratio	0.014	0.007	0.063
HCM Control Delay	7.1	6.7	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

APPENDIX J:

PROPOSED ACTION / CHANGE OF ZONE
SCENARIO B

LEVEL OF SERVICE/CAPACITY WORKSHEETS

Signalized Intersections

1. Broadway at Meadow Drive
2. Broadway at Woodmere Boulevard

Unsignalized Intersections

1. Broadway at Pine Street
2. Broadway at Prospect Avenue
3. Albro Lane at Atlantic Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	780	43	38	686	58	28
Future Volume (veh/h)	780	43	38	686	58	28
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	804	44	39	707	60	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1297	71	85	1261	87	42
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1687	92	49	1641	1061	513
Grp Volume(v), veh/h	0	848	746	0	90	0
Grp Sat Flow(s),veh/h/ln	0	1780	1690	0	1592	0
Q Serve(g_s), s	0.0	16.9	0.0	0.0	4.4	0.0
Cycle Q Clear(g_c), s	0.0	16.9	0.0	0.0	4.4	0.0
Prop In Lane		0.05	0.05		0.67	0.32
Lane Grp Cap(c), veh/h	0	1368	1346	0	130	0
V/C Ratio(X)	0.00	0.62	0.55	0.00	0.69	0.00
Avail Cap(c_a), veh/h	0	1368	1346	0	298	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.74	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.1	0.0	0.0	35.8	0.0
Incr Delay (d2), s/veh	0.0	2.1	1.2	0.0	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	0.5	0.0	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.2	1.2	0.0	42.2	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	848			746	90	
Approach Delay, s/veh	6.2			1.2	42.2	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	67.5	67.5	12.5
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	18.9	2.0	6.4
Green Ext Time (p_c), s	7.9	7.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	822	745	7	1	16
Future Vol, veh/h	3	822	745	7	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	847	768	7	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	775	0	-	0	1625	772
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	853	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	819	-	-	-	103	374
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	390	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	819	-	-	-	102	374
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	390	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	819	-	-	-	323
HCM Lane V/C Ratio	0.004	-	-	-	0.054
HCM Control Delay (s)	9.4	0	-	-	16.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	644	57	16	564	46	65	80	7	65	89	88
Future Volume (veh/h)	67	644	57	16	564	46	65	80	7	65	89	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	70	671	59	17	588	48	68	83	7	68	93	92
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	115	936	80	58	1024	82	150	160	11	120	125	108
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	100	1424	121	18	1559	125	444	828	59	326	650	558
Grp Volume(v), veh/h	800	0	0	653	0	0	158	0	0	253	0	0
Grp Sat Flow(s),veh/h/ln	1646	0	0	1702	0	0	1331	0	0	1534	0	0
Q Serve(g_s), s	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	31.1	0.0	0.0	16.6	0.0	0.0	8.4	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.09		0.07	0.03		0.07	0.43		0.04	0.27		0.36
Lane Grp Cap(c), veh/h	1130	0	0	1164	0	0	321	0	0	353	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.56	0.00	0.00	0.49	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1130	0	0	1164	0	0	438	0	0	473	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	0.0	7.6	0.0	0.0	29.1	0.0	0.0	31.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	2.0	0.0	0.0	1.2	0.0	0.0	3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	0.0	5.6	0.0	0.0	2.8	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	0.0	9.5	0.0	0.0	30.3	0.0	0.0	34.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		800			653			158			253	
Approach Delay, s/veh		18.7			9.5			30.3			34.4	
Approach LOS		B			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	58.6	21.4	58.6	21.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	46.0	22.0	46.0	22.0
Max Q Clear Time (g_c+I1), s	33.1	14.6	18.6	10.4
Green Ext Time (p_c), s	5.1	0.8	5.2	0.6

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	829	756	23	25	53
Future Vol, veh/h	89	829	756	23	25	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	6	6	8	8	19	19
Mvmt Flow	92	855	779	24	26	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	803	0	-	0	1830	791
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	1039	-
Critical Hdwy	4.16	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.254	-	-	-	3	3
Pot Cap-1 Maneuver	803	-	-	-	111	438
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	357	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	803	-	-	-	87	438
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	357	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	36.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	803	-	-	-	191
HCM Lane V/C Ratio	0.114	-	-	-	0.421
HCM Control Delay (s)	10.1	0	-	-	36.9
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	1.9

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	8	45	4	0
Future Vol, veh/h	4	4	8	45	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	5	5	11	61	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.5	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	15%
Vol Thru, %	0%	50%	85%
Vol Right, %	0%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	8	53
LT Vol	4	0	8
Through Vol	0	4	45
RT Vol	0	4	0
Lane Flow Rate	5	11	72
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.014	0.082
Departure Headway (Hd)	4.67	4.514	4.101
Convergence, Y/N	Yes	Yes	Yes
Cap	764	794	877
Service Time	2.713	2.533	2.109
HCM Lane V/C Ratio	0.007	0.014	0.082
HCM Control Delay	7.7	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	70	34	739	49	22
Future Volume (veh/h)	653	70	34	739	49	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	695	74	36	786	52	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1267	135	79	1329	86	38
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1635	174	42	1715	1148	508
Grp Volume(v), veh/h	0	769	822	0	76	0
Grp Sat Flow(s),veh/h/ln	0	1809	1756	0	1677	0
Q Serve(g_s), s	0.0	13.3	0.0	0.0	3.5	0.0
Cycle Q Clear(g_c), s	0.0	13.3	0.0	0.0	3.5	0.0
Prop In Lane		0.10	0.04		0.68	0.30
Lane Grp Cap(c), veh/h	0	1402	1408	0	126	0
V/C Ratio(X)	0.00	0.55	0.58	0.00	0.60	0.00
Avail Cap(c_a), veh/h	0	1402	1408	0	314	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.72	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.5	0.0	0.0	35.8	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.3	0.0	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.5	0.0	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.1	1.3	0.0	40.5	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	769			822	76	
Approach Delay, s/veh	5.1			1.3	40.5	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		68.0				68.0		12.0
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		15.3				2.0		5.5
Green Ext Time (p_c), s		6.8				8.3		0.1

Intersection Summary			
HCM 6th Ctrl Delay			4.8
HCM 6th LOS			A

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	714	783	5	9	16
Future Vol, veh/h	30	714	783	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	32	760	833	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	838	0	-	0	1660	836
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	824	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	788	-	-	-	101	351
Stage 1	-	-	-	-	407	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	788	-	-	-	94	351
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	413	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	788	-	-	-	177
HCM Lane V/C Ratio	0.041	-	-	-	0.15
HCM Control Delay (s)	9.8	0	-	-	28.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	360	123	9	608	55	106	81	8	92	162	39
Future Volume (veh/h)	72	360	123	9	608	55	106	81	8	92	162	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	73	367	126	9	620	56	108	83	8	94	165	40
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	143	690	224	50	1025	92	186	125	10	149	206	46
Arrive On Green	0.42	0.42	0.42	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	147	1103	358	7	1638	146	520	557	45	400	918	204
Grp Volume(v), veh/h	566	0	0	685	0	0	199	0	0	299	0	0
Grp Sat Flow(s),veh/h/ln	1608	0	0	1792	0	0	1122	0	0	1522	0	0
Q Serve(g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	19.0	0.0	0.0	18.4	0.0	0.0	13.8	0.0	0.0	15.2	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.54		0.04	0.31		0.13
Lane Grp Cap(c), veh/h	1057	0	0	1167	0	0	321	0	0	400	0	0
V/C Ratio(X)	0.54	0.00	0.00	0.59	0.00	0.00	0.62	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	1057	0	0	1167	0	0	389	0	0	478	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.1	0.0	0.0	9.0	0.0	0.0	28.9	0.0	0.0	29.8	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	0.0	6.7	0.0	0.0	3.7	0.0	0.0	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	0.0	11.2	0.0	0.0	31.1	0.0	0.0	35.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		566			685			199			299	
Approach Delay, s/veh		15.7			11.2			31.1			35.0	
Approach LOS		B			B			C			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.1		23.9		56.1		23.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		21.0		17.2		20.4		15.8				
Green Ext Time (p_c), s		4.6		0.7		5.3		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			19.0
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	4.8					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	777	775	41	50	58
Future Vol, veh/h	83	777	775	41	50	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	4	4	6	6	7	7
Mvmt Flow	86	809	807	43	52	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	850	0	-	0	1810	829
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	981	-
Critical Hdwy	4.14	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.236	-	-	-	3	3
Pot Cap-1 Maneuver	780	-	-	-	114	417
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	780	-	-	-	91	417
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	71.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	780	-	-	-	157
HCM Lane V/C Ratio	0.111	-	-	-	0.717
HCM Control Delay (s)	10.2	0	-	-	71.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	4.3

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	1	11	81	7	3
Future Vol, veh/h	4	1	11	81	7	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	5	1	14	103	9	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.9	7.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	12%
Vol Thru, %	0%	80%	88%
Vol Right, %	30%	20%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	5	92
LT Vol	7	0	11
Through Vol	0	4	81
RT Vol	3	1	0
Lane Flow Rate	13	6	116
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.007	0.13
Departure Headway (Hd)	4.449	3.889	4.019
Convergence, Y/N	Yes	Yes	Yes
Cap	800	918	896
Service Time	2.502	1.92	2.029
HCM Lane V/C Ratio	0.016	0.007	0.129
HCM Control Delay	7.6	6.9	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	731	53	48	549	36	30
Future Volume (veh/h)	731	53	48	549	36	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	803	58	53	603	40	33
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1357	98	117	1274	67	56
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1751	126	88	1644	899	741
Grp Volume(v), veh/h	0	861	656	0	74	0
Grp Sat Flow(s),veh/h/ln	0	1877	1732	0	1662	0
Q Serve(g_s), s	0.0	15.3	0.0	0.0	3.4	0.0
Cycle Q Clear(g_c), s	0.0	15.3	0.0	0.0	3.4	0.0
Prop In Lane		0.07	0.08		0.54	0.45
Lane Grp Cap(c), veh/h	0	1455	1391	0	125	0
V/C Ratio(X)	0.00	0.59	0.47	0.00	0.59	0.00
Avail Cap(c_a), veh/h	0	1455	1391	0	312	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.84	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.7	0.0	0.0	35.8	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.0	0.0	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.4	0.0	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.5	1.0	0.0	40.3	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	861			656	74	
Approach Delay, s/veh	5.5			1.0	40.3	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		68.0				68.0		12.0
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		17.3				2.0		5.4
Green Ext Time (p_c), s		8.1				6.0		0.1

Intersection Summary		
HCM 6th Ctrl Delay		5.3
HCM 6th LOS		A

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	780	581	3	3	9
Future Vol, veh/h	15	780	581	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	857	638	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	641	0	-	0	1529	640
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	889	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	953	-	-	-	130	479
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	405	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	953	-	-	-	126	479
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	405	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	953	-	-	-	282
HCM Lane V/C Ratio	0.017	-	-	-	0.047
HCM Control Delay (s)	8.8	0	-	-	18.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	591	41	14	485	51	44	52	11	74	70	78
Future Volume (veh/h)	80	591	41	14	485	51	44	52	11	74	70	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	87	642	45	15	527	55	48	57	12	80	76	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	146	988	67	58	1100	113	147	158	28	141	106	102
Arrive On Green	0.45	0.45	0.45	0.67	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	142	1464	99	17	1630	167	476	900	157	461	606	581
Grp Volume(v), veh/h	774	0	0	597	0	0	117	0	0	241	0	0
Grp Sat Flow(s),veh/h/ln	1705	0	0	1815	0	0	1533	0	0	1648	0	0
Q Serve(g_s), s	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	0.0	12.5	0.0	0.0	5.0	0.0	0.0	11.1	0.0	0.0
Prop In Lane	0.11		0.06	0.03		0.09	0.41		0.10	0.33		0.35
Lane Grp Cap(c), veh/h	1201	0	0	1271	0	0	332	0	0	349	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.47	0.00	0.00	0.35	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1201	0	0	1271	0	0	486	0	0	505	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	6.3	0.0	0.0	29.1	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	1.2	0.0	0.0	0.6	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	0.0	4.3	0.0	0.0	2.0	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	0.0	0.0	7.5	0.0	0.0	29.8	0.0	0.0	34.1	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		774			597			117			241	
Approach Delay, s/veh		16.3			7.5			29.8			34.1	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		20.0		60.0		20.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		29.4		13.1		14.5		7.0				
Green Ext Time (p_c), s		5.6		0.9		4.6		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			16.7
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	2.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	758	601	27	30	72
Future Vol, veh/h	80	758	601	27	30	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	90	852	675	30	34	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	705	0	-	0	1722	690
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	1032	-
Critical Hdwy	4.11	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3	3
Pot Cap-1 Maneuver	898	-	-	-	128	500
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	379	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	898	-	-	-	104	500
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	379	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	33.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	898	-	-	-	236
HCM Lane V/C Ratio	0.1	-	-	-	0.486
HCM Control Delay (s)	9.5	0	-	-	33.9
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	3	9	39	8	2
Future Vol, veh/h	4	3	9	39	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	4	11	46	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.8	7.2	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	19%
Vol Thru, %	0%	57%	81%
Vol Right, %	20%	43%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	7	48
LT Vol	8	0	9
Through Vol	0	4	39
RT Vol	2	3	0
Lane Flow Rate	12	8	57
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.009	0.063
Departure Headway (Hd)	4.053	3.707	3.965
Convergence, Y/N	Yes	Yes	Yes
Cap	882	968	907
Service Time	2.08	1.721	1.971
HCM Lane V/C Ratio	0.014	0.008	0.063
HCM Control Delay	7.1	6.8	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

APPENDIX K:

PROPOSED ACTION / CHANGE OF ZONE
SCENARIO C

LEVEL OF SERVICE/CAPACITY WORKSHEETS

Signalized Intersections

1. Broadway at Meadow Drive
2. Broadway at Woodmere Boulevard

Unsignalized Intersections

1. Broadway at Pine Street
2. Broadway at Prospect Avenue
3. Albro Lane at Atlantic Avenue

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	780	54	45	686	63	31
Future Volume (veh/h)	780	54	45	686	63	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1781	1781	1900	1900
Adj Flow Rate, veh/h	804	56	46	707	65	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	8	8	0	0
Cap, veh/h	1267	88	93	1227	91	45
Arrive On Green	0.76	0.76	1.00	1.00	0.09	0.09
Sat Flow, veh/h	1660	116	60	1607	1055	519
Grp Volume(v), veh/h	0	860	753	0	98	0
Grp Sat Flow(s),veh/h/ln	0	1775	1667	0	1591	0
Q Serve(g_s), s	0.0	17.8	0.0	0.0	4.8	0.0
Cycle Q Clear(g_c), s	0.0	17.8	0.0	0.0	4.8	0.0
Prop In Lane		0.07	0.06		0.66	0.33
Lane Grp Cap(c), veh/h	0	1355	1320	0	138	0
V/C Ratio(X)	0.00	0.63	0.57	0.00	0.71	0.00
Avail Cap(c_a), veh/h	0	1355	1320	0	298	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.73	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.3	0.0	0.0	35.6	0.0
Incr Delay (d2), s/veh	0.0	2.3	1.3	0.0	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	0.5	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.6	1.3	0.0	42.2	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	860			753	98	
Approach Delay, s/veh	6.6			1.3	42.2	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		67.1				67.1		12.9
Change Period (Y+Rc), s		6.0				6.0		6.0
Max Green Setting (Gmax), s		53.0				53.0		15.0
Max Q Clear Time (g_c+I1), s		19.8				2.0		6.8
Green Ext Time (p_c), s		8.0				7.4		0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 6th TWSC
2: Broadway & Pine Street

Intersection						
Int Delay, s/veh	0.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	832	750	7	1	16
Future Vol, veh/h	3	832	750	7	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	7	8	8	19	19
Mvmt Flow	3	858	773	7	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	780	0	-	0	1641	777
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	864	-
Critical Hdwy	4.17	-	-	-	6.59	6.39
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.263	-	-	-	3.671	3.471
Pot Cap-1 Maneuver	815	-	-	-	100	371
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	386	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	815	-	-	-	99	371
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	815	-	-	-	319
HCM Lane V/C Ratio	0.004	-	-	-	0.055
HCM Control Delay (s)	9.4	0	-	-	16.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	647	58	16	570	46	66	80	7	65	89	89
Future Volume (veh/h)	68	647	58	16	570	46	66	80	7	65	89	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1752	1752	1752	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	71	674	60	17	594	48	69	83	7	68	93	93
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	10	10	10	8	8	8	12	12	12
Cap, veh/h	115	933	80	58	1024	81	151	158	11	120	125	109
Arrive On Green	0.44	0.44	0.44	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	101	1421	123	18	1561	124	446	818	58	324	647	561
Grp Volume(v), veh/h	805	0	0	659	0	0	159	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1645	0	0	1702	0	0	1323	0	0	1533	0	0
Q Serve(g_s), s	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	31.5	0.0	0.0	16.9	0.0	0.0	8.6	0.0	0.0	12.6	0.0	0.0
Prop In Lane	0.09		0.07	0.03		0.07	0.43		0.04	0.27		0.37
Lane Grp Cap(c), veh/h	1128	0	0	1163	0	0	321	0	0	354	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1128	0	0	1163	0	0	436	0	0	472	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	0.0	7.6	0.0	0.0	29.1	0.0	0.0	31.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	2.0	0.0	0.0	1.2	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	0.0	0.0	5.7	0.0	0.0	2.8	0.0	0.0	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	0.0	0.0	9.6	0.0	0.0	30.3	0.0	0.0	34.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		805			659			159			254	
Approach Delay, s/veh		18.9			9.6			30.3			34.4	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.5		21.5		58.5		21.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		33.5		14.6		18.9		10.6				
Green Ext Time (p_c), s		5.1		0.8		5.2		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			18.7
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	2.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	839	760	23	26	53
Future Vol, veh/h	89	839	760	23	26	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	6	6	8	8	19	19
Mvmt Flow	92	865	784	24	27	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	808	0	-	0	1845	796
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	1049	-
Critical Hdwy	4.16	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.59	-
Critical Hdwy Stg 2	-	-	-	-	5.59	-
Follow-up Hdwy	2.254	-	-	-	3	3
Pot Cap-1 Maneuver	800	-	-	-	109	436
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	353	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	800	-	-	-	85	436
Mov Cap-2 Maneuver	-	-	-	-	85	-
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	353	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	38.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	800	-	-	-	185
HCM Lane V/C Ratio	0.115	-	-	-	0.44
HCM Control Delay (s)	10.1	0	-	-	38.9
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	2

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	4	8	45	4	0
Future Vol, veh/h	5	4	8	45	4	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	50	50	9	9	25	25
Mvmt Flow	7	5	11	61	5	0
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.5	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	100%	0%	15%
Vol Thru, %	0%	56%	85%
Vol Right, %	0%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	4	9	53
LT Vol	4	0	8
Through Vol	0	5	45
RT Vol	0	4	0
Lane Flow Rate	5	12	72
Geometry Grp	1	1	1
Degree of Util (X)	0.007	0.015	0.082
Departure Headway (Hd)	4.672	4.547	4.102
Convergence, Y/N	Yes	Yes	Yes
Cap	764	789	877
Service Time	2.715	2.566	2.11
HCM Lane V/C Ratio	0.007	0.015	0.082
HCM Control Delay	7.7	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	79	40	739	60	30
Future Volume (veh/h)	653	79	40	739	60	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1900	1900
Adj Flow Rate, veh/h	695	84	43	786	64	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	5	5	0	0
Cap, veh/h	1235	149	87	1292	92	46
Arrive On Green	0.77	0.77	1.00	1.00	0.08	0.08
Sat Flow, veh/h	1611	195	52	1685	1103	551
Grp Volume(v), veh/h	0	779	829	0	97	0
Grp Sat Flow(s),veh/h/ln	0	1806	1737	0	1672	0
Q Serve(g_s), s	0.0	14.1	0.0	0.0	4.5	0.0
Cycle Q Clear(g_c), s	0.0	14.1	0.0	0.0	4.5	0.0
Prop In Lane		0.11	0.05		0.66	0.33
Lane Grp Cap(c), veh/h	0	1385	1380	0	139	0
V/C Ratio(X)	0.00	0.56	0.60	0.00	0.70	0.00
Avail Cap(c_a), veh/h	0	1385	1380	0	313	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.72	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	3.8	0.0	0.0	35.7	0.0
Incr Delay (d2), s/veh	0.0	1.7	1.4	0.0	6.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	0.5	0.0	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.5	1.4	0.0	41.9	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	779			829	97	
Approach Delay, s/veh	5.5			1.4	41.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	67.4	67.4	12.6
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	16.1	2.0	6.5
Green Ext Time (p_c), s	7.0	8.5	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	723	794	5	9	16
Future Vol, veh/h	30	723	794	5	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	4	5	5	13	13
Mvmt Flow	32	769	845	5	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	850	0	-	0	1681	848
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	833	-
Critical Hdwy	4.14	-	-	-	6.53	6.33
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.236	-	-	-	3.617	3.417
Pot Cap-1 Maneuver	780	-	-	-	98	345
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	409	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	780	-	-	-	91	345
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	409	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	29.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	780	-	-	-	172
HCM Lane V/C Ratio	0.041	-	-	-	0.155
HCM Control Delay (s)	9.8	0	-	-	29.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	366	123	9	613	55	106	81	8	92	162	40
Future Volume (veh/h)	73	366	123	9	613	55	106	81	8	92	162	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1826	1826	1826	1767	1767	1767	1781	1781	1781
Adj Flow Rate, veh/h	74	373	126	9	626	56	108	83	8	94	165	41
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	5	5	5	9	9	9	8	8	8
Cap, veh/h	143	691	221	50	1025	91	186	125	10	149	206	47
Arrive On Green	0.42	0.42	0.42	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	147	1106	353	7	1640	145	519	556	45	399	915	208
Grp Volume(v), veh/h	573	0	0	691	0	0	199	0	0	300	0	0
Grp Sat Flow(s),veh/h/ln	1607	0	0	1792	0	0	1120	0	0	1522	0	0
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	19.4	0.0	0.0	18.7	0.0	0.0	13.8	0.0	0.0	15.3	0.0	0.0
Prop In Lane	0.13		0.22	0.01		0.08	0.54		0.04	0.31		0.14
Lane Grp Cap(c), veh/h	1055	0	0	1166	0	0	321	0	0	401	0	0
V/C Ratio(X)	0.54	0.00	0.00	0.59	0.00	0.00	0.62	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	1055	0	0	1166	0	0	388	0	0	478	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	9.1	0.0	0.0	28.9	0.0	0.0	29.8	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	5.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	6.8	0.0	0.0	3.7	0.0	0.0	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	0.0	11.3	0.0	0.0	31.0	0.0	0.0	35.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	D	A	A
Approach Vol, veh/h		573			691			199			300	
Approach Delay, s/veh		15.8			11.3			31.0			35.1	
Approach LOS		B			B			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		56.0		24.0		56.0		24.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		21.4		17.3		20.7		15.8				
Green Ext Time (p_c), s		4.6		0.7		5.4		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	785	786	42	51	58
Future Vol, veh/h	83	785	786	42	51	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	4	4	6	6	7	7
Mvmt Flow	86	818	819	44	53	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	863	0	-	0	1831	841
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	990	-
Critical Hdwy	4.14	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.236	-	-	-	3	3
Pot Cap-1 Maneuver	771	-	-	-	111	411
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	771	-	-	-	88	411
Mov Cap-2 Maneuver	-	-	-	-	88	-
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	392	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	78.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	771	-	-	-	151
HCM Lane V/C Ratio	0.112	-	-	-	0.752
HCM Control Delay (s)	10.3	0	-	-	78.8
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	4.6

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	1	11	82	7	3
Future Vol, veh/h	5	1	11	82	7	3
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	0	0	4	4	22	22
Mvmt Flow	6	1	14	104	9	4
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7	7.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	12%
Vol Thru, %	0%	83%	88%
Vol Right, %	30%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	6	93
LT Vol	7	0	11
Through Vol	0	5	82
RT Vol	3	1	0
Lane Flow Rate	13	8	118
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.008	0.131
Departure Headway (Hd)	4.453	3.909	4.019
Convergence, Y/N	Yes	Yes	Yes
Cap	799	914	895
Service Time	2.505	1.941	2.03
HCM Lane V/C Ratio	0.016	0.009	0.132
HCM Control Delay	7.6	7	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	731	65	58	549	49	41
Future Volume (veh/h)	731	65	58	549	49	41
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	803	71	64	603	54	45
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1316	116	132	1208	76	64
Arrive On Green	0.76	0.76	1.00	1.00	0.09	0.09
Sat Flow, veh/h	1720	152	108	1580	897	748
Grp Volume(v), veh/h	0	874	667	0	100	0
Grp Sat Flow(s),veh/h/ln	0	1873	1689	0	1661	0
Q Serve(g_s), s	0.0	16.5	0.0	0.0	4.7	0.0
Cycle Q Clear(g_c), s	0.0	16.5	0.0	0.0	4.7	0.0
Prop In Lane		0.08	0.10		0.54	0.45
Lane Grp Cap(c), veh/h	0	1432	1341	0	142	0
V/C Ratio(X)	0.00	0.61	0.50	0.00	0.71	0.00
Avail Cap(c_a), veh/h	0	1432	1341	0	311	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.83	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.2	0.0	0.0	35.6	0.0
Incr Delay (d2), s/veh	0.0	1.9	1.1	0.0	6.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.4	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.1	1.1	0.0	41.9	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	874			667	100	
Approach Delay, s/veh	6.1			1.1	41.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	67.2	67.2	12.8
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	53.0	53.0	15.0
Max Q Clear Time (g_c+I1), s	18.5	2.0	6.7
Green Ext Time (p_c), s	8.3	6.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	793	595	3	3	9
Future Vol, veh/h	15	793	595	3	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	871	654	3	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	657	0	-	0	1559	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	903	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	940	-	-	-	125	469
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	940	-	-	-	121	469
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	940	-	-	-	273
HCM Lane V/C Ratio	0.018	-	-	-	0.048
HCM Control Delay (s)	8.9	0	-	-	18.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	600	42	14	493	51	45	52	11	74	70	79
Future Volume (veh/h)	81	600	42	14	493	51	45	52	11	74	70	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	88	652	46	15	536	55	49	57	12	80	76	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	2	2	2	0	0	0	2	2	2
Cap, veh/h	146	986	67	58	1102	111	148	156	27	140	106	103
Arrive On Green	0.45	0.45	0.45	0.67	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	142	1462	100	17	1633	165	481	888	155	459	604	586
Grp Volume(v), veh/h	786	0	0	606	0	0	118	0	0	242	0	0
Grp Sat Flow(s),veh/h/ln	1704	0	0	1815	0	0	1524	0	0	1650	0	0
Q Serve(g_s), s	15.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	28.1	0.0	0.0	12.8	0.0	0.0	5.1	0.0	0.0	11.2	0.0	0.0
Prop In Lane	0.11		0.06	0.02		0.09	0.42		0.10	0.33		0.36
Lane Grp Cap(c), veh/h	1199	0	0	1270	0	0	331	0	0	350	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.48	0.00	0.00	0.36	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	1199	0	0	1270	0	0	484	0	0	505	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	0.0	0.0	6.3	0.0	0.0	29.1	0.0	0.0	31.6	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.3	0.0	0.0	0.6	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	0.0	4.4	0.0	0.0	2.0	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	0.0	0.0	7.6	0.0	0.0	29.8	0.0	0.0	34.1	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		786			606			118			242	
Approach Delay, s/veh		16.6			7.6			29.8			34.1	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		20.0		60.0		20.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		22.0		46.0		22.0				
Max Q Clear Time (g_c+I1), s		30.1		13.2		14.8		7.1				
Green Ext Time (p_c), s		5.6		0.9		4.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			16.8
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	2.9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	80	770	613	28	31	72
Future Vol, veh/h	80	770	613	28	31	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	90	865	689	31	35	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	720	0	-	0	1750	705
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	1045	-
Critical Hdwy	4.11	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3	3
Pot Cap-1 Maneuver	886	-	-	-	123	490
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	886	-	-	-	99	490
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	374	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	37.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	886	-	-	-	224
HCM Lane V/C Ratio	0.101	-	-	-	0.517
HCM Control Delay (s)	9.5	0	-	-	37.1
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	2.7

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	3	9	40	8	2
Future Vol, veh/h	5	3	9	40	8	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	4	11	48	10	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.8	7.2	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	18%
Vol Thru, %	0%	62%	82%
Vol Right, %	20%	38%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	8	49
LT Vol	8	0	9
Through Vol	0	5	40
RT Vol	2	3	0
Lane Flow Rate	12	10	58
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.01	0.064
Departure Headway (Hd)	4.057	3.74	3.965
Convergence, Y/N	Yes	Yes	Yes
Cap	882	959	908
Service Time	2.084	1.754	1.971
HCM Lane V/C Ratio	0.014	0.01	0.064
HCM Control Delay	7.1	6.8	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.2

Appendix D – Town and Village Moratoriums

Town of Hempstead Resolution No. 1541-2016 (TOH Moratorium)

Village of Woodsburgh Local Law WDS 1804 (Village Moratorium)

CASE NO. 28674 RESOLUTION NO. 1541-2016

Adopted: November 15, 2016
Effective Date: December 5, 2016

Councilman Blakeman offered the following resolution and moved its adoption:

RESOLUTION ADOPTING THE PROPOSED AMENDMENT OF SECTION 302 OF ARTICLE XXXI OF THE BUILDING ZONE ORDINANCE OF THE TOWN OF HEMPSTEAD, INSOFAR AS TO CREATE A NEW SUBSECTION 302 (R) THEREOF, IN RELATION TO ENACTING A TEMPORARY MORATORIUM ON RESIDENTIAL DEVELOPMENT OF CERTAIN GOLF COURSE PROPERTIES

WHEREAS, pursuant to Resolution No. 1526-2016, adopted October 5, 2016, a public hearing was duly called, noticed for on the 15th day of November, 2016, at the Town Meeting Pavilion, Hempstead Town Hall, 1 Washington Street, Hempstead, New York, at 10:30 o'clock in the forenoon of that day, to consider the amendment of Section 302 of Article XXXI of the Building Zone Ordinance of the Town of Hempstead, insofar as to create a new subsection 302 (R) thereof, in relation to enacting a temporary moratorium on residential development of certain golf course properties; and

WHEREAS, after due deliberation this Town Board finds it in the public interest to amend the Building Zone Ordinance of the Town of Hempstead, as aforesaid;

NOW, THEREFORE, BE IT

RESOLVED, a new Section 302.Q of Article XXXI of the Building Zone Ordinance of the Town of Hempstead, in relation to requiring windows on exterior walls of restaurants, is hereby adopted, such that it shall state as follows:

§ 302. Prohibited and restricted uses.

* * *

R. Temporary Moratorium Established.

1. Legislative Intent. The Town Board is greatly concerned that area character and property values be preserved, enhanced and protected for the benefit of Town residents, both within incorporated villages and in the unincorporated areas of the Town. The Town Board notes that a key aspect of accomplishing that goal of protecting area character is to ensure that substantial new residential development would be on lots of a minimum size, and subject to dimensional area requirements, that are fairly consistent with existing residential lots in the surrounding area. The Town Board has noted that within the unincorporated area of the Town of Hempstead, there are one or more properties that are improved with privately-owned golf courses and their accessory buildings and structures, which properties are adjacent or proximate to incorporated villages that are primarily developed with detached single family dwellings. The Town Board has noted that these

villages have zoning regulations which include minimum lot sizes and other area requirements for single family dwellings which are far in excess of the Town's existing zoning district regulations which allow for development of detached single or two-family dwellings. As such, the Town Board believes that as a matter of sound land-use planning, it is a prudent action to impose a moratorium at this time on issuing of building permits for residential development of existing golf course properties if any portion of such golf course property is adjacent to or fairly proximate to one or more incorporated villages that are primarily developed with single family residences. Doing so will allow the Town the time to conduct a full review of the layout of existing homes and the current area-based zoning regulations set forth in the zoning codes of the proximate villages. Doing so will enable the Town Board to determine whether to enact comprehensive new lot sizes and other area-based regulations that would apply to possible residential development of golf course property or properties at the end of the moratorium period, that will allow for reasonable residential development, basically in line with the zoning regulations of the villages, and ultimately, provide for reasonable development, while fully protecting established area character of all surrounding properties, including within the village(s) in question.

2. Moratorium declared and imposed. Effective immediately upon adoption of this subsection "302.R" in accordance with law, a moratorium is hereby declared and imposed, whereby the Department of Buildings and any other Town agency or department with jurisdiction will not issue any final building permit or other necessary approval, in connection with any application for residential development of any part of a privately-owned golf course property, including areas of the golf course, clubhouse building(s) and/or accessory buildings, structures, appurtenances or interior roads or pathways of any kind, provided that any part of the overall golf course property is located either adjacent to or within 500 feet of any land included within the territorial limits of an incorporated village.

3. This moratorium shall remain in effect for 180 days, and is subject to 90-day extensions by further administrative action of the Town Board, if the Town Board shall determine that any such extension is necessary to maintain the status quo while it shall properly conduct and complete it's study and enact new regulations, as it may deem appropriate.

4. Nothing herein shall prevent the filing of a Building Permit Application with the Department of Buildings or any other involved agency or department. However, any such filing and payment of fees is strictly at applicant's risk, in the event that newly imposed regulations lead applicant to file new applications in accordance with new regulations.

5. While the imposition of the within moratorium is a Type II action under the State Environmental Quality Review Act (SEQRA), nothing herein shall be construed as to dispense with any requirement of the Town or any other

agency, Government or person to comply with any or all applicable SEQRA or other lawful requirements in enacting any new zoning regulations in accordance with the foregoing provisions.

6. The foregoing provisions are severable, and invalidation of any provisions by a court of competent jurisdiction shall effect that provision only, and the balance of the provisions shall remain in full force and effect, for all purposes.

and, BE IT FURTHER

RESOLVED, that said amendment shall take effect according to law, and that the Town Clerk shall enter said amendment in the Minutes of the Town Board and the Ordinance Book and shall publish a copy of this resolution once in the Long Island Business News, a newspaper having a general circulation in the Town of Hempstead, and file in his office an affidavit of such publication.

The foregoing resolution was seconded by Councilman D'Esposito and adopted upon roll call as follows:

AYES: SEVEN (7)

NOES: NONE (0)

Minutes of the Regular meeting of the Board of Trustees and Appointed Officers of the Incorporated Village of Woodsburgh held on Monday, October 29, 2018 at 8:00 p.m. at Village Hall, 30 Piermont Avenue, Hewlett, New York.

1. Calling the Meeting to Order:

   Mayor Israel called the meeting to order at 8:02 p.m.

2. Roll Call:

Present	Mayor	Lee Israel
	Deputy Mayor	Gary Goffner
	Trustee	Jake Harman- arrived at 8:05pm
	Trustee	Barry Platnick
	Trustee	Carl Cayne
	Village Clerk	Michelle Blandino
	Village Attorney	Brian Stolar, Esq.
	Treasurer	Alan Hirmes

3. Notice of Meeting– Nassau Herald:

   Clerk Blandino reported that notice of this evening's meeting was posted in the Nassau Herald.

4. Minutes – September 27, 2018:

   On motion by Trustee Cayne, seconded by Deputy Mayor Goffner and unanimously approved, the Board dispensed with the reading of the minutes of the September 27, 2018 meeting the Clerk had previously mailed such minutes and they are hereby approved.

5. Public Hearing Proposal Local Law WDS 1804- local law to enact a temporary moratorium on the subdivision of property subject to the jurisdiction of the Village of Woodsburgh.

   A. Open Hearing: The Mayor opened the public hearing at 8:04 PM

   B. Notice of Hearing: Clerk Blandino reported that notice of this evening's public hearing appeared in the Nassau Herald and was posted on the bulletin board outside Village Hall and in the lobby of Village Hall

   C. Affidavits: Clerk Blandino reported that notice of publication and posting was received.

   D. Appearances: None

   E. Close Hearing: The Board closed the public hearing and adopted the following resolution;

RESOLVED, that the Board hereby finds and concludes that (a) the application for temporary moratorium on the subdivision of property in the Village of Woodsburgh is an Unlisted Action under the State Environmental Quality Review Act and its regulations;

(b) the Board is the lead agency with respect to environmental review of this proposed action;

(c) the Board has considered the following factors in respect to its review of the environmental impacts of the proposed action:

(i) whether the proposed action would result in any substantial adverse change in existing air quality, ground or surface water quality or quantity, traffic or noise levels, nor any substantial increase in solid waste production, nor create a substantial increase in the potential for erosion, flooding, leaching or drainage problems;

(ii) whether the proposed action would result in the removal or destruction of large quantities of vegetation or fauna, substantial interference with the movement of any resident or migratory fish or wildlife species, impacts on a significant habitat area, substantial adverse impacts on a threatened or endangered species of animal or plant, or the habitat of such a species, or other significant adverse impacts to natural resources;

(iii) whether the proposed action would impair the environmental characteristics of any Critical Environmental Area;

(iv) whether the proposed action would conflict with the community's current plans or goals as official approved or adopted;

(v) whether the proposed action would impair the character or quality of important historical, archeological, architectural or aesthetic resources or of existing community or neighborhood character;

(vi) whether the proposed action would result in a major change in the use of either the quantity or type of energy;

(vii) whether the proposed action would create a hazard to human health;

(viii) whether the proposed action would create a substantial change in the use, or intensity of use, of land, including agricultural, open space or recreational resources, or in its capacity to support existing uses;

(ix) whether the proposed action would encourage or attract large numbers of persons to any place for more than a few days, compared to the number who would come to such place without such action;

(x) whether the proposed action would create changes in two or more elements of the environment, no one of which would have a significant impact on the environment, but when taken considered together would result in a substantial adverse impact on the environment;

(xi) whether the proposed action would create substantial adverse impacts when considered cumulatively with any other actions, proposed or in process;

(xii) whether the proposed action would result in substantial adverse impact with respect to any relevant environmental consideration, including noise, aesthetics, traffic, air quality, water quality or adequacy of water supply, drainage, soil conditions, or quality of life in the community in general and the immediate neighborhood in particular;

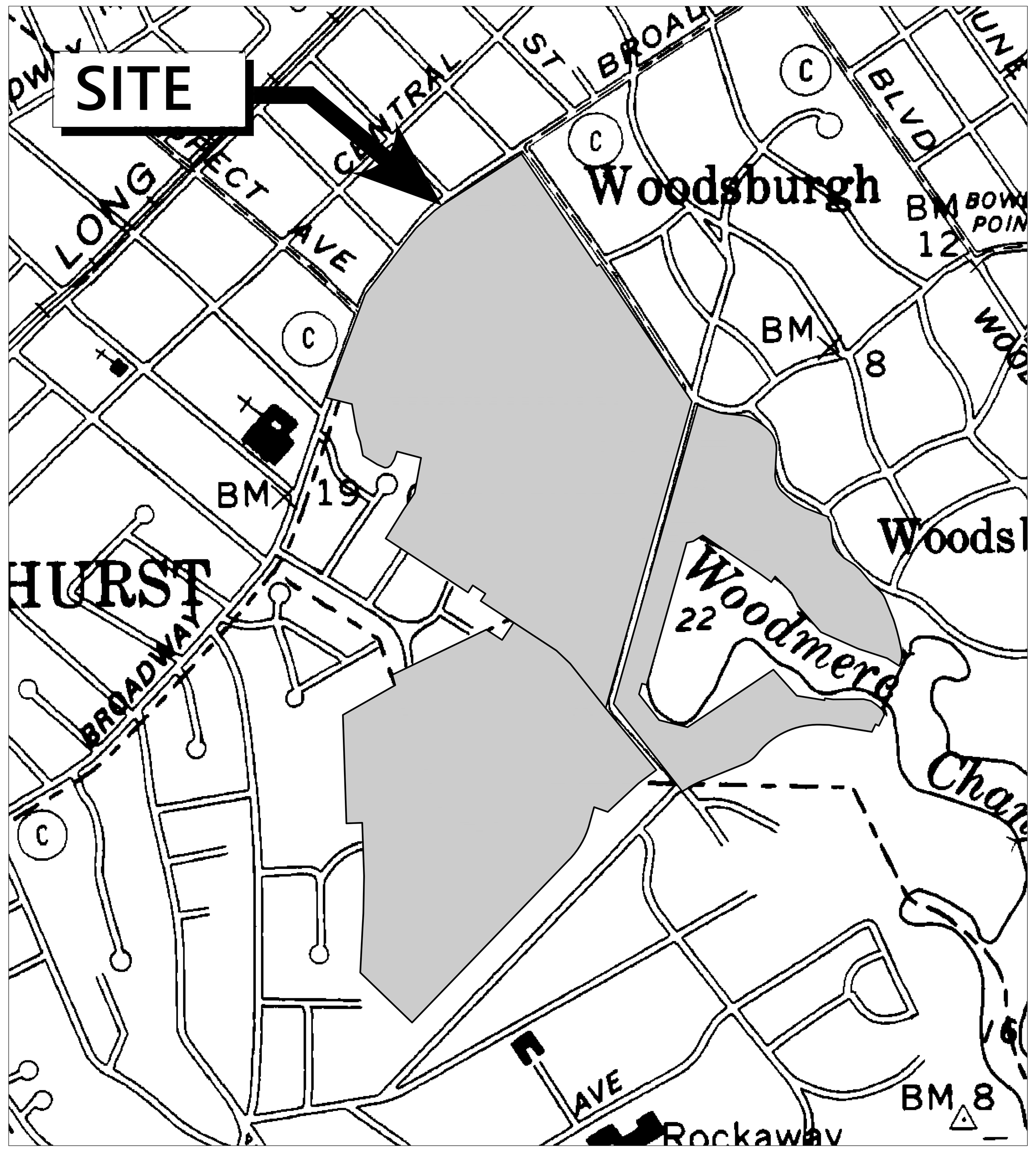
(d) the proposed action, would not have a significant adverse environmental impact, as that impact is considered under SEQRA; and

(e) no further environmental review is required with respect to the proposed action, and it is further

On motion by Trustee Platnick, seconded by Trustee Cayne and unanimously approved, the Board adopted Local Law WDS 1805- local law to enact a temporary moratorium on the subdivision of property subject to the jurisdiction of the Village of Woodsburgh.

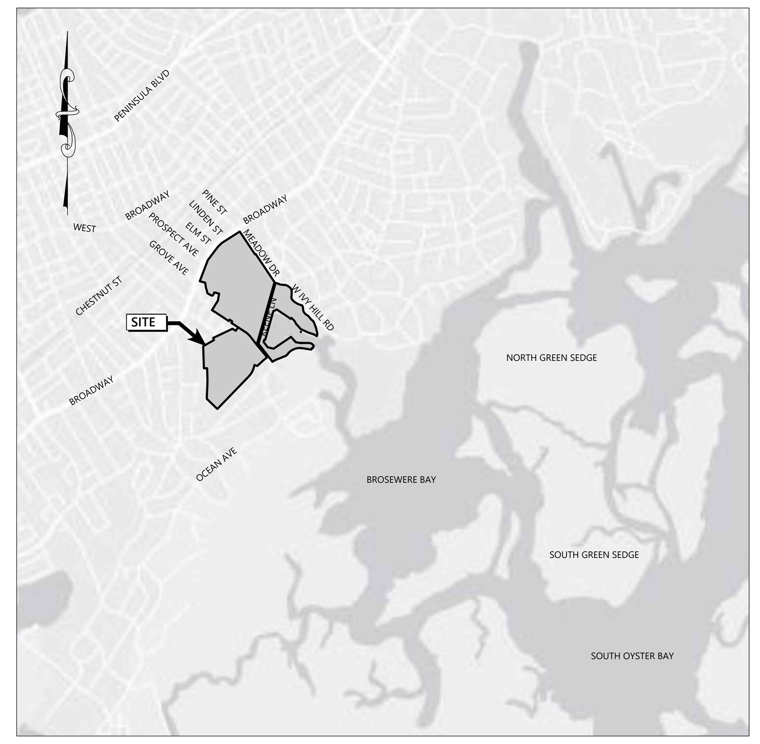
Appendix E – Willow View Estates Subdivision Plan

(Preliminary Subdivision Map: November 15, 2018)



KEY MAP

SCALE: 1" = 400'



LOCATION MAP

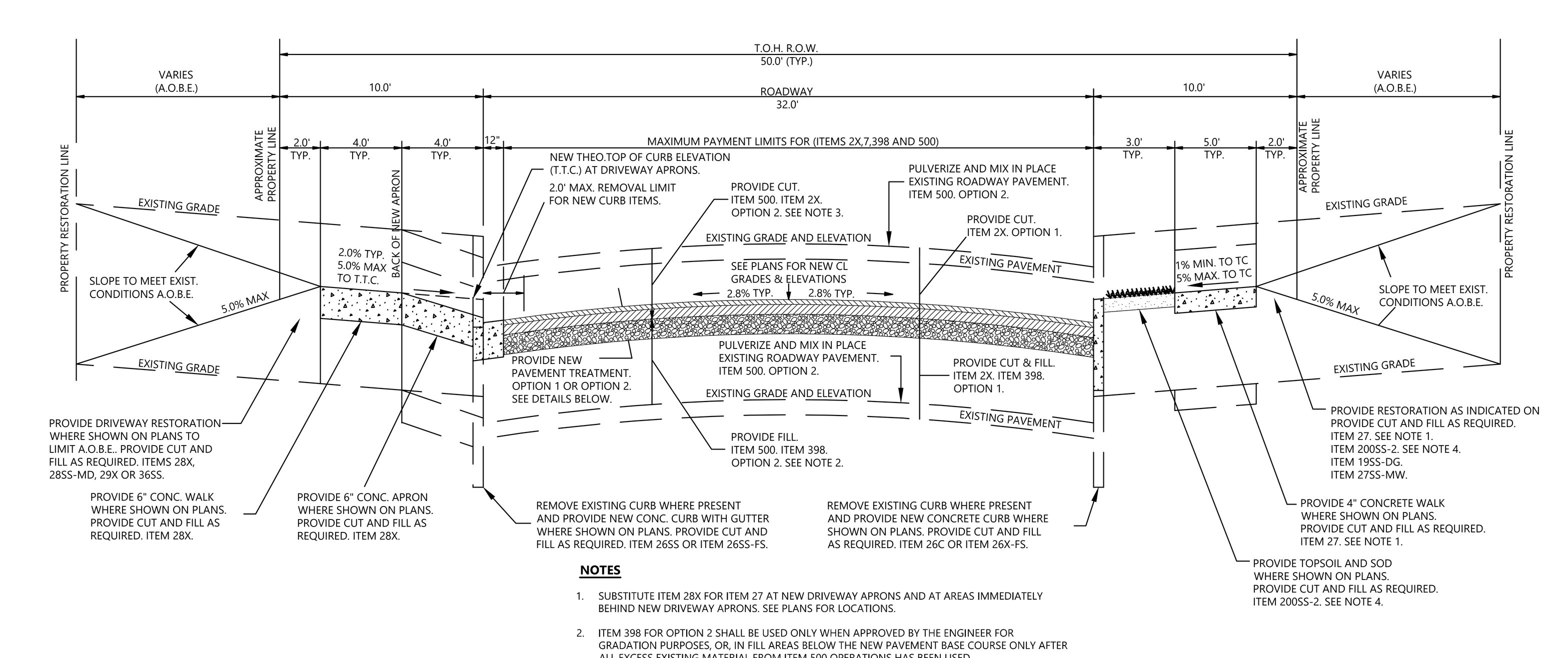
SCALE: 1" = 3000'

Property Line Data

Line	Bearing	Distance
L1	S 60°55'20" E	92.67'
L2	S 73°50'20" E	80.29'
L3	S 13°24'50" W	110.70'
L4	S 38°33'00" E	33.43'
L5	S 40°10'50" E	32.10'
L6	S 50°25'00" E	63.95'
L7	S 59°05'00" E	118.12'
L8	S 41°35'40" W	6.50'
L9	S 22°36'20" E	23.55'
L10	S 03°44'40" W	100.00'
L11	S 18°13'20" E	38.27'
L12	S 33°25'20" E	47.53'
L13	S 47°07'20" E	60.33'
L14	S 37°13'20" E	38.50'
L15	S 30°01'20" E	74.93'
L16	S 36°27'20" E	60.57'
L18	S 11°54'20" E	104.90'
L20	N 47°23'10" W	68.57'
L21	N 61°53'30" W	142.00'
L22	N 55°46'40" W	195.00'
L23	N 31°05'10" W	165.18'
L24	N 16°27'10" W	66.71'
L25	N 34°18'10" W	109.53'
L26	S 45°45'30" W	32.41'
L27	N 43°43'30" W	62.65'
L28	N 45°58'30" W	328.19'
L29	S 68°51'50" W	53.31'
L30	S 87°26'29" W	31.34'
L31	S 25°49'50" W	697.55'
L32	N 64°10'10" W	22.70'
L33	S 25°52'20" W	52.20'
L34	S 27°47'40" E	155.00'
L35	S 65°47'39" E	138.00'
L36	N 66°12'20" E	488.00'
L37	S 31°47'40" E	166.00'
L38	S 70°47'20" E	133.32'
L39	N 18°53'07" E	9.61'
L40	S 71°57'40" E	37.82'
L41	S 80°19'40" E	144.61'
L42	S 67°00'30" E	36.63'
L43	S 44°22'10" E	35.65'
L44	S 37°24'50" E	36.40'
L45	S 07°57'30" E	20.91'
L46	S 35°20'00" W	58.17'
L47	N 54°40'00" W	17.99'
L48	S 35°20'00" W	40.00'
L49	N 70°39'10" W	204.93'
L50	N 78°58'30" W	46.53'
L51	S 50°29'00" W	19.44'
L53	S 77°57'48" W	207.35'
L54	S 19°21'11" E	1.50'
L55	N 27°57'00" W	526.52'
L56	N 25°48'00" E	1464.57'

Property Line Curve Data

Curve	Radius	Arc Length	Delta Angle	Chord Bearing	Chord
C1	200.00'	45.09'	12°55'00"	S 67°22'50" E	44.99'
C2	136.23'	47.24'	19°51'59"	S 63°54'20" E	47.00'
C3	325.00'	90.75'	15°59'58"	S 45°58'22" E	90.46'
C4	125.00'	112.11'	51°23'13"	S 12°16'47" E	108.39'
C5	110.00'	99.76'	51°57'52"	S 12°34'04" E	96.38'
C6	100.56'	43.09'	24°33'00"	S 24°10'50" E	42.76'
C7	1183.58'	151.32'	7°19'31"	S 04°16'56" E	151.22'
C8	117.50'	75.88'	37°00'01"	S 17°52'51" W	74.57'
C9	365.86'	322.73'	50°32'30"	S 75°45'15" W	312.37'
C10	146.10'	70.08'	27°29'00"	S 64°13'30" W	69.41'
C11	599.98'	80.17'	7°39'20"	S 74°08'19" W	80.11'
C12	683.00'	34.64'	2°54'22"	S 70°13'52" W	34.64'

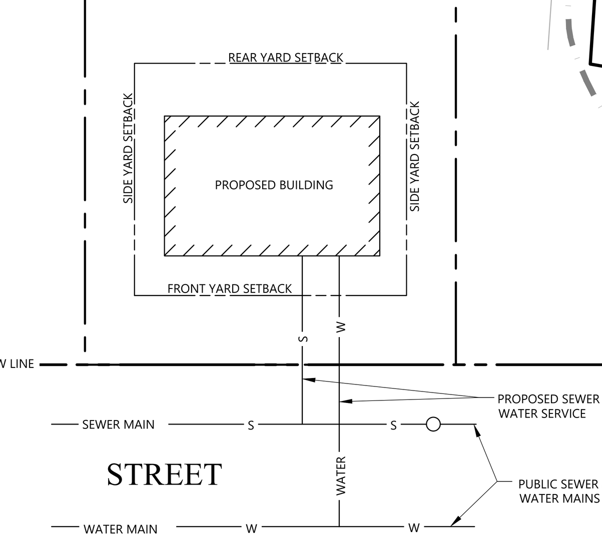


NOTES

1. SUBSTITUTE ITEM 28X FOR ITEM 27 AT NEW DRIVEWAY APRONS AND AT AREAS IMMEDIATELY BEHIND NEW DRIVEWAY APRONS. SEE PLANS FOR LOCATIONS.
2. ITEM 398 FOR OPTION 2 SHALL BE USED ONLY WHEN APPROVED BY THE ENGINEER FOR GRADATION PURPOSES, OR, IN FILL AREAS BELOW THE NEW PAVEMENT BASE COURSE ONLY AFTER ALL EXCESS EXISTING MATERIAL FROM ITEM 500 OPERATIONS HAS BEEN USED.
3. ITEM 2X FOR OPTION 2 SHALL BE USED ONLY IF REMOVAL OF EXCESS EXISTING MATERIAL FROM THE PROJECT LIMITS IS REQUIRED AFTER THE COMPLETION OF THE FINE GRADING OF THE NEW BASE COURSE UNDER ITEM 500 HAS BEEN COMPLETED.
4. ITEM 2X FOR OPTION 2 SHALL BE USED ONLY IF REMOVAL OF EXCESS EXISTING MATERIAL FROM THE PROJECT LIMITS IS REQUIRED AFTER THE COMPLETION OF THE FINE GRADING OF THE NEW BASE COURSE UNDER ITEM 500 HAS BEEN COMPLETED.

Typical Roadway Section - TOH 1/16

N.T.S. Source: TOH



TYPICAL RESIDENTIAL PLOT PLAN

NOTES:

1. DRAINAGE TO BE SELF CONTAINED ON ALL LOTS AND DOES NOT CONTRIBUTE ANY RUNOFF INTO THE DRAINAGE RESERVE AREAS.
2. DWELLINGS AND RELATED INFORMATION (LOT GRADES, DRIVEWAYS, ETC.) DEPICTED ON THIS PLAN REPRESENT MINIMAL BASIC BUILDING AREAS AS PERMITTED BY ZONING REGULATIONS, AND ARE FOR SUBDIVISION APPROVAL PURPOSES ONLY. THE DEVELOPER IS REQUIRED TO FILE INDIVIDUAL PLOT PLANS DEPICTING THE ACTUAL DWELLING, DRIVEWAY CONFIGURATION AND GRADES FOR THE BUILDING PERMIT APPROVALS. AS ACTUAL DWELLING SIZE, SHAPE, SHAPE, CONFIGURATION AND GRADING REQUIREMENTS MAY DIFFER FROM THIS PLAN, THE DEVELOPER IS ADVISED THAT ADDITIONAL STORM DRAINAGE FACILITIES MAY BE REQUIRED TO PROPERLY DRAIN INDIVIDUAL LOTS.
3. IN CONJUNCTION WITH INDIVIDUAL PLOT PLANS, THE DEVELOPER MAY BE REQUIRED TO FILE FOR INDIVIDUAL PERMITS FROM NYSDEC FOR SPECIFIC IMPROVEMENTS (DWELLING, DRIVEWAY, PATIO, ETC.) PROPOSED FOR EACH LOT. THE DEVELOPMENT OF EACH LOT IS REQUIRED TO CONFORM TO COVERAGE AND OTHER RESTRICTIONS SPECIFIED IN THE APPLICABLE PERMITS OR OTHER REGULATIONS OF NYSDEC.

Site Data

Site Area: 114.25 Ac.
No. of Lots: 285
School District: Lawrence & Hewlett/Woodmere
Fire District: Woodbmere & Lawrence Cedarhurst
Post Office: USPS 12 Bayview Avenue, Lawrence, NY 11559
USPS 132 Franklin Place, Woodmere, NY 11598
USPS 124 Grove Avenue, Cederhurst, NY 11516

Owner/Applicant

WG Woodmere
c/o Woodmere Country Club, LLC
41 Bayard Street
New Brunswick, NJ 08901

Assessor's Map: Nassau County Tax Map

Lot:
41 – F – 37 – Village of Lawrence
41 – F – 123 – Village of Woodsburgh
41 – F – 310 – Village of Woodsburgh
41 – D – 53 – Village of Woodsburgh
41 – F – 3029 – Village of Woodsburgh and Village of Lawrence
41 – F – 3030 –Village of Woodsburgh and Village of Lawrence
41 – F – 48 – Village of Lawrence
41 – F – 3032 – Town of Hempstead and Village of Woodsburgh
41 – F – 3028 – Village of Lawrence
41 – 72 – 1 – Village of Woodsburgh and Village of Lawrence
41 – F – 40 – Village of Woodsburgh and Village of Lawrence
41 – D – 55 – Village of Woodsburgh

vhb.com
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Engineering, Surveying, Landscape Architecture and Geology, PC
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Hauppauge, NY 11788
631.787.3400

0 50 100 200Feet

Willow View Estates

Town of Hempstead, Village of Lawerence
Village of Woodsburgh

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for | Date Nov. 15, 2018

Not Approved for Construction

Drawing Title

Preliminary Subdivision Map

Drawing Number

C-1.0

Sheet 1 of 18

Project Number
26046.01

Appendix F – Village of Woodsburgh Vision Plan

VILLAGE OF WOODSBURGH
VISION PLAN

ACKNOWLEDGMENTS

2019 Village of Woodsburgh Board of Trustees

Honorable Lee Israel, Mayor

Jacob Harman, Deputy Mayor

Carl Cayne, Trustee

Barry Platnick, Trustee

Alan Hirmes, Trustee

Michelle Blandino, Village Clerk

Brian Stolar, Esq., Village Attorney

Environmental Planning Consultant

Nelson, Pope, & Voorhis, LLC

November 2019

This Vision Plan was prepared in accordance with Section 7-722 of the New York State Village Law.

Table of Contents

Tables

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Appendices

I. OVERVIEW OF THE 2019 PLAN

A. Village of Woodsburgh - Yesterday and Today

The Village of Woodsburgh is an incorporated village within the Town of Hempstead, Nassau County, New York, and is approximately 0.4 square miles in size, and located on the south shore of Long Island, adjoining Brosewere Bay, the Woodmere Channel and the Woodmere Basin. The Villages of Lawrence and Hewlett Neck, and the Town of Hempstead (hamlet of Woodmere) surround Woodsburgh. Woodsburgh is a small village, comprised of a total of approximately 268 acres which is predominantly developed with single family homes and two apartment buildings. Two private golf courses located in the village, the Woodmere Country Club and the Rockaway Hunting Club, account for much of the Village's land area.

The Village has a rich history and prior to the Civil War was connected to nearby population centers by a stage coach route which followed old Indian trails. In the early 1800s prior to its incorporation, the Village consisted of farmland located within the Rockaways which were then a part of Queens County. In 1868, a wealthy entrepreneur named Samuel Wood, who had been raised on a farm in the Rockaways, began to acquire Rockaway farmland in the area that is now the Village of Woodsburgh to fulfill his dream of improving the community of his childhood. Between 1868 and 1869, major landowners in the Rockaways, including the Woods family, donated land to the South Side Railroad and wooden stations were erected along the route to ensure that communities would have stops along the new Rockaways railroad service. Today, these areas constitute Long Island's "Five Towns", which encompass the hamlets of Hewlett, Woodmere, Cedarhurst, Lawrence and Inwood.

By the late 1800s, the railroad was established on Long Island and New York's upper class sought out areas east of the City for relaxation and outdoor recreation. Mansions were established along the south shore to house the elite during the warmer months. Beach resorts were also established in the Rockaways, which were the catalysts for the development of communities along the railroads' Rockaway Branch. During this time, Samuel Wood's vision for the improvement of Woodsburgh progressed and a boulevard (Woodmere Boulevard) was paved from the main thoroughfare (Broadway) to the Bay to access the Woodsburgh Pavilion Hotel. Cottages were then built on either side of the Boulevard with sidewalks and shade trees located on both sides of the street. The hotel set the standard for the area's luxury seaside resorts and attracted the wealthy and famous to the area for almost 30 years. Graded roads and sidewalks surrounding the hotel linked the Rockaway villages and brought visitors to Woodsburgh.[1]

The influx of affluent second homeowners supported the development of social organizations. The Rockaway Hunt Club (now the Rockaway Hunting Club or "Rockaway Club") was established in 1878 and became the center of social activity in the Rockaways. Originally, the Rockaway Club was formed around equestrian activities and housed those who resided in New York City, but as the countryside around the club transitioned and became more inhabited, the nature of the club changed. Polo, golf and tennis replaced fox hunting as the Club's membership increased, and more City residents began to discover the beauty of the south shore. Elaborate cottages with luxurious amenities were marketed to affluent vacationers, and the Rockaways became an alternative to Long Branch, New Jersey, and Newport, Rhode Island. Club members began to invest in real estate and built their own county houses on the land surrounding the Rockaway Club. Today, the Rockaway Club is one of the oldest country clubs in the United States.

Two years before Woodsburgh became an incorporated Village in Nassau County in 1912, the Woodmere County Club ("Woodmere Club") was established. A new clubhouse and nine clay tennis courts were erected near the Woodmere train station with further plans to acquire frontage along the Bay to build a waterside casino and boathouse.

As a result of the 1929 stock market crash and the Great Depression, many homeowners were forced to sell their properties and estates in Woodsburgh. Following World War II, land speculators who purchased these properties demolished the mansions and constructed several single-family houses in their place. Seventy-five percent of the homes in Woodsburgh today were built after 1939, which is apparent from the architectural styles found throughout the Village (Colonial, Tudor, Contemporary, Victorian, Ranch and Post Modern homes).

[1] Vollono, Millicent D. *A Brief History of the Village of Woodsburgh*. Prepared for the Village of Woodsburgh Centennial Anniversary. 2013.

The Village of Woodsburgh is a close knit, small, stable community whose population has fluctuated only slightly over the past 17 years. Village residents have expressed that the Village is a wonderful place for families, and generations of the same family have chosen Woodsburgh as their home. Community members have indicated that the Village is a safe and serene place to live with scenic views and narrow winding roads. These aspects of the Village of Woodsburgh are of great value to the community. What is noticeable about Woodsburgh is that Woodmere Channel and the private golf country clubs with their open lands buffer the Village from surrounding urbanized areas. The Village is well established along Brosewere Bay and near natural resources such as tidal wetlands and marshy islands. As set forth in later this Vision Plan, a goal of this Plan is to protect, maintain and balance the Village's historic community character and existing recreational and open space resources, as well as preserve the history of the Village.

B. REGIONAL CONTEXT

1. Woodsburgh - A South Shore Long Island Estuary Reserve Community

Long Island's South Shore Estuary, located between the mainland and the barrier islands along the Atlantic Ocean, extends 75 miles east from Nassau County to the Village of Southampton. This area encompasses 173 square miles of Long Island's south shore bays and the adjacent upland areas draining to them. According to the New York State Department of State ("NYS DOS"), "*the estuary's shallow interconnected bays and tidal tributaries provide highly productive habitats that support the largest concentration of water-dependent businesses in the State. Water quality in the estuary is crucial to the health of the commercial and recreational fishing and shellfishing industries*".

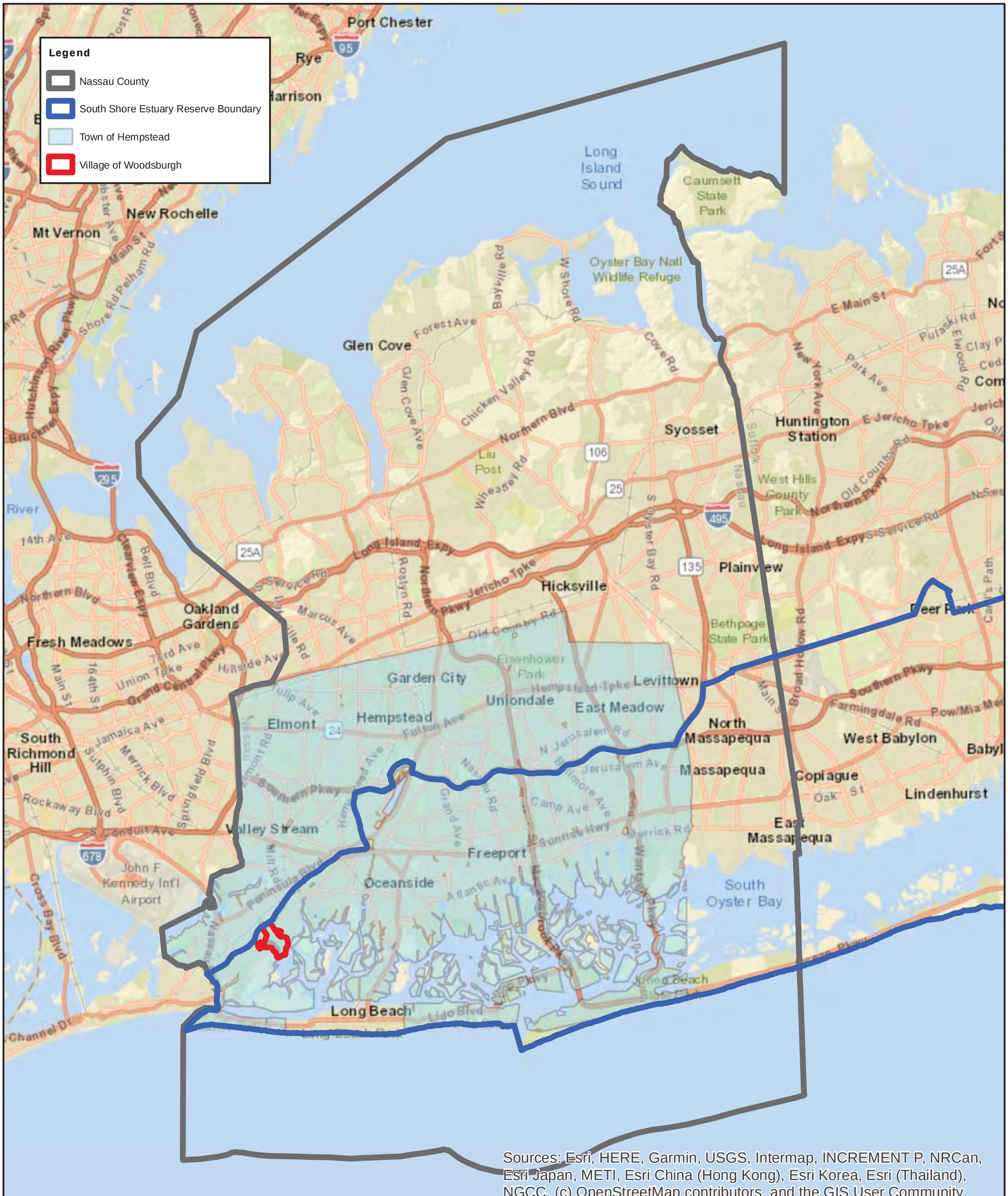
The Long Island South Shore Reserve Act was enacted in 1993 by the New York State Legislature to protect and manage Long Island's South Shore Estuary Reserve ("SSER") as a "single integrated estuary and a maritime region of statewide importance". The Reserve is administered by the NYS DOS in cooperation with the Long Island South Shore Estuary Reserve Council and the Citizen Advisory Committee consisting of State and local governments, non-profit organizations, academic organizations and other local stakeholders. The Reserve Act mandated that the Long Island South Shore Estuary Reserve Council prepare a Comprehensive Management Plan, which was adopted in April 2001.

The Village of Woodsburgh is part of the South Shore Estuary Reserve's western bay which extends from the western boundary of the Town of Hempstead to the Nassau-Suffolk County line, and includes Hempstead Bay and South Oyster Bay (see **Figure 1**). These embayments consist of an extensive area of shallow water and salt marsh islands connected by channels and tidal creeks. The western bay contains the greatest concentration of salt marsh islands that are frequently subjected to erosion due to the relatively high tidal range and proximity to heavy commercial and recreational boat traffic. Habitat loss and pollutants from the mainland have had a negative impact on species that inhabit this subregion.

The SSER Comprehensive Management Plan facilitates a regional strategy to improve and maintain water quality and long-term health of the Reserve's bays and tributaries; preserve tidal wetlands and wildlife; sustain the Reserve's tourism and economy; expand public use and enjoyment; and increase education, outreach and stewardship. The SSER Plan includes the following recommendations, which are considered in this Vision Plan:

- Water Quality – Improve water quality and implement a strategy to protect lands that provide significant pollution reduction; retrofit existing stormwater infrastructure; adopt best management practices; and increase education and outreach to prevent nonpoint source pollution in the Reserve.
- Living Resources – Sustain and improve living resources of the Reserve by incorporating an ecosystem perspective into resource management; protect, restore, and improve habitat; improve the productivity of living resources; and address scientific information needs.
- Public Use and Enjoyment – Preserve open space for public enjoyment and access, buffer sensitive habitats, improve water quality and retain the visual landscape of the estuary.
- Estuary Reserve-related Economy – Support water-dependent businesses and enhance maritime centers in order to maintain the viability of the estuary's economy.
- Education, Outreach and Stewardship – Raise awareness through outreach to general and specific audiences and through formal education activities.

In developing the Vision and recommendations for this Plan, the location of the Village within this significant region has been considered.



NP&W
NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

FIGURE 1
REGIONAL LOCATION MAP

Source: Nassau County GIS, NYS GIS WSM

Scale: 1 inch = 20,000 feet

N

Village of Woodsburgh Vision Plan

2. Woodsburgh – A Nassau County Community

Nassau County occupies approximately 298 square miles of area on Long Island and is located between Suffolk County and New York City's Queens County. The Long Island Sound and the Atlantic Ocean form the northern and southern boundaries of Nassau County with 188 miles of scenic shoreline. Nassau County consists of three Towns (Hempstead, Oyster Bay and North Hempstead), two cities (Glen Cove and Long Beach), 64 incorporated villages and numerous hamlets that are part of Nassau County's three Towns.

The entirety of Village of Woodsburgh is located within Nassau County, which is part of the larger New York City Metropolitan Region.[2] Nassau County's proximity and connection to New York City by highways and rail lines has provided the County with significant employment, business, entertainment, housing, cultural and recreational opportunities which has induced the County's growth.

The topography of the County is defined by two glacial moraines extending west to east and which form ridges the length of Long Island. The ridges along the north shore were formed by glacial deposits and are characterized by irregular topography and drainage channels that empty out into deep bays. The Town of North Hempstead and part of the Town of Oyster Bay are dominated by a ridge, with the highest elevation in the County in the Village of East Hills at 378 feet above sea level. Rolling hills in the northern portion of the County flatten out to a broad glacial outwash plain in the southern portion of the County. Extensive tidal and marsh areas, barrier beaches, and sand dunes are located along the Atlantic Ocean coastline in the southern part of the County[3]. Woodsburgh is part of this broad glacial outwash plain, as well as the fill activity which occurred extensively along the south shore.

This Vision Plan acknowledges the Village's location within the Nassau County region. The vision, policies, and recommended land use strategies take into consideration the Village's unique setting within Nassau County and the larger New York City Metropolitan Region.

On a more local level, the Village is part of an informal grouping of villages and hamlets referred to as the "Five Towns" within the Town of Hempstead in Nassau County. The Five Towns region includes nine jurisdictions on the south shore of western Long Island, adjoining the border of Queens County and the head of the Far Rockaway Peninsula. The Five Towns area was designated in 1931 when local fundraising groups in Inwood, Lawrence, Cedarhurst, Woodmere and Hewlett formed the "Five Towns Community Chest" organization.[4] Five Towns also derived from the five stops along the Long Island Railroad (LIRR), which, at the time, referred to Hewlett, Woodmere, Lawrence, Cedarhurst and Inwood.[5] Today, the Villages of Cedarhurst, Lawrence, Hewlett Harbor, Hewlett Bay Park, Hewlett Neck and Woodsburgh are all part of the Five Towns region.

C. THE PURPOSE OF THIS VISION PLAN

What is a vision plan? A vision plan or a comprehensive plan is a document that describes a vision of a community's future and the goals and objectives that, through action taken by the Village Board of Trustees and other agencies, support that vision. While each citizen may have a particular vision for Woodsburgh,

[2] The New York City Metropolitan Region includes Long Island, New York City, the lower Hudson Valley counties, and certain areas in northern New Jersey and southern Connecticut.
[3] Nassau County Planning Commission. *Nassau County Comprehensive Plan*. December 1998. Nassau County, NY. Available at https://www.nassaucountyny.gov/DocumentCenter/View/2775/1998ComprehensiveMasterPlanCompletereduced?bidId=.
[4] Nassau County Department of Public Works. *Five Towns Drainage Study*. December 22, 2017. Westbury, NY. Available at https://www.nassaucountyny.gov/DocumentCenter/View/21224. Accessed May 2019.
[5] Five Towns Planning Committee. *The Five Towns NY Rising Community Reconstruction Plan*. March 2014. Available at https://stormrecovery.ny.gov/sites/default/files/crp/community/documents/fivetowns_nyrcr_plan.pdf. Accessed May 2019.

an adopted Vision Plan reflects consensus that is achieved through a participatory public input process, and contains the land use, environmental and related policies that will guide the community in the actions it undertakes or reviews, until the Plan is reviewed again.

No official comprehensive planning document has previously been adopted for the Village of Woodsburgh. As such, Nassau County comprehensive planning documents have generally shaped policy decisions in the Village and have provided broad recommendations that are not specific to the Village and thus do not express the preferences of the local residents to preserve Woodsburgh's open space and low-density, small-scale residential community character. New York State Village Law ("Village Law") regulates the preparation and adoption of a comprehensive plan. Section 7-722 defines a comprehensive plan as: *"…the materials, written and/or graphic, including but not limited to maps, charts, studies, resolutions, reports and other descriptive material that identify the goals, objectives, principles, guidelines, policies, standards, devices and instruments for the immediate and long-range protection, enhancement, growth and development of the village."* Once a comprehensive plan is adopted by the Village Board of Trustees, all Village land use regulations <u>must</u> be consistent with the recommendations of the plan.

Before a comprehensive plan document can be adopted and implemented, the Village must carefully consider the environmental impacts of implementing the Plan in accordance with the regulations implementing the New York State Environmental Quality Review Act (SEQRA).

This is a policy document that presents a vision for the future and identifies goals and objectives to achieve the vision. The Vision Plan will guide future actions in a way that protects and enhances the Village's existing residential character, quality of life, and sensitive natural resources.

In the sections that follow, the Vision Plan recommends specific tools and solutions, and presents a vision of Woodsburgh that guides the Village Board of Trustees in the adoption of specific local laws and regulations to achieve that vision. The Plan can also guide actions of the Village such as working with adjacent municipalities, providing education for residents and pursuing funding decisions.

II. VISION STATEMENT

The Vision Statement is a major guiding component of this Plan. It describes Woodsburgh's values and aspirations and a shared image of how it wishes to evolve over the next 10 to 20 years. A vision considers the attributes of a community that make it unique – its environmental and cultural fabric - and is forward looking, positive, affirmative and aspirational. This Vision Plan specifically defines the vision, goals and objectives related to the future of the Village of Woodsburgh.

A. VISION PLANNING PROCESS

The Woodsburgh Village Board of Trustees retained an environmental planning consultant to review all baseline data, participate in visioning efforts, obtain public input and prepare this Vision Plan. The Village Board of Trustees and Village Attorney participated in this effort by ensuring a robust public participation process and overseeing preparation of this Vision Plan.

Community visioning is the process of developing consensus about what future the community wants, and then determining what is necessary to achieve it. The Vision Statement captures what community members most value about Woodsburgh, and the shared image of what they want their community to become. It inspires everyone to work together to achieve the vision. This vision statement gives the Village's boards, agencies, and organizations the long-term, comprehensive perspective and direction necessary to make rational and disciplined decisions on community issues as they arise. The Village's boards, in reviewing a plan or proposal will ask – is it consistent with the Vision? The vision statement set forth herein was crafted through a collaborative process that involved public input from the community through an online survey and public participation at a Public Open House.

B. PUBLIC INPUT ON THE VISION STATEMENT AND PLAN

A public survey was conducted to solicit input from community residents and stakeholders. Robotic calls and emails were sent to the community and residents were able to respond to the survey online. The public survey was open for 5 months, to allow extended opportunity for the community to participate. Approximately 130 residents and community members responded to the survey and provided valuable input to inform the recommendations of this plan. Of the 130 respondents, 121 respondents indicated that they were Village residents while 9 answered they were not residents but were interested in the future of Woodsburgh. Additionally, a public open house was held on June 27, 2019, at the Hewlett-Woodmere Public Library to solicit comments on the needs of the Village. Approximately 30 community members attended this public open house. The results of the survey and the open house serve as input for the Vision Statement and recommendations contained in this Vision Plan.

Based on survey responses, key words and phrases that resonate with community members, and which they support include:

- Tranquil (88%)
- Safe community (85%)
- Quality of life (82%)
- Desirable place to live (76%)

- Family friendly (68%)
- Preserve natural and ecological resources (68%)
- Historic (52%)
- Walkability (52%)

All other words and phrases received less than 50 percent support.

The survey also indicated that participants supported the following planning principles for the future of Woodsburgh:

- Maintaining residential serenity (98%)
- Minimizing flooding (98%)
- Minimizing additional traffic volume on Village roadways (97%)
- Improving stormwater management and protections (97%)
- Protecting natural and ecological resources (97%)
- Enhancing neighborhood character (91%)
- Preserving historic and cultural resources (90%)
- Protecting viewsheds (89%)
- Enhancing the pedestrian network/maintaining safe pedestrian pathways (88%)
- Improving traffic flow (85%)
- Providing open space (84%)
- Building sustainably (76%)
- Implementing green infrastructure such as rain gardens (73%)
- Providing parks (62%)
- Providing recreational opportunities (61%)

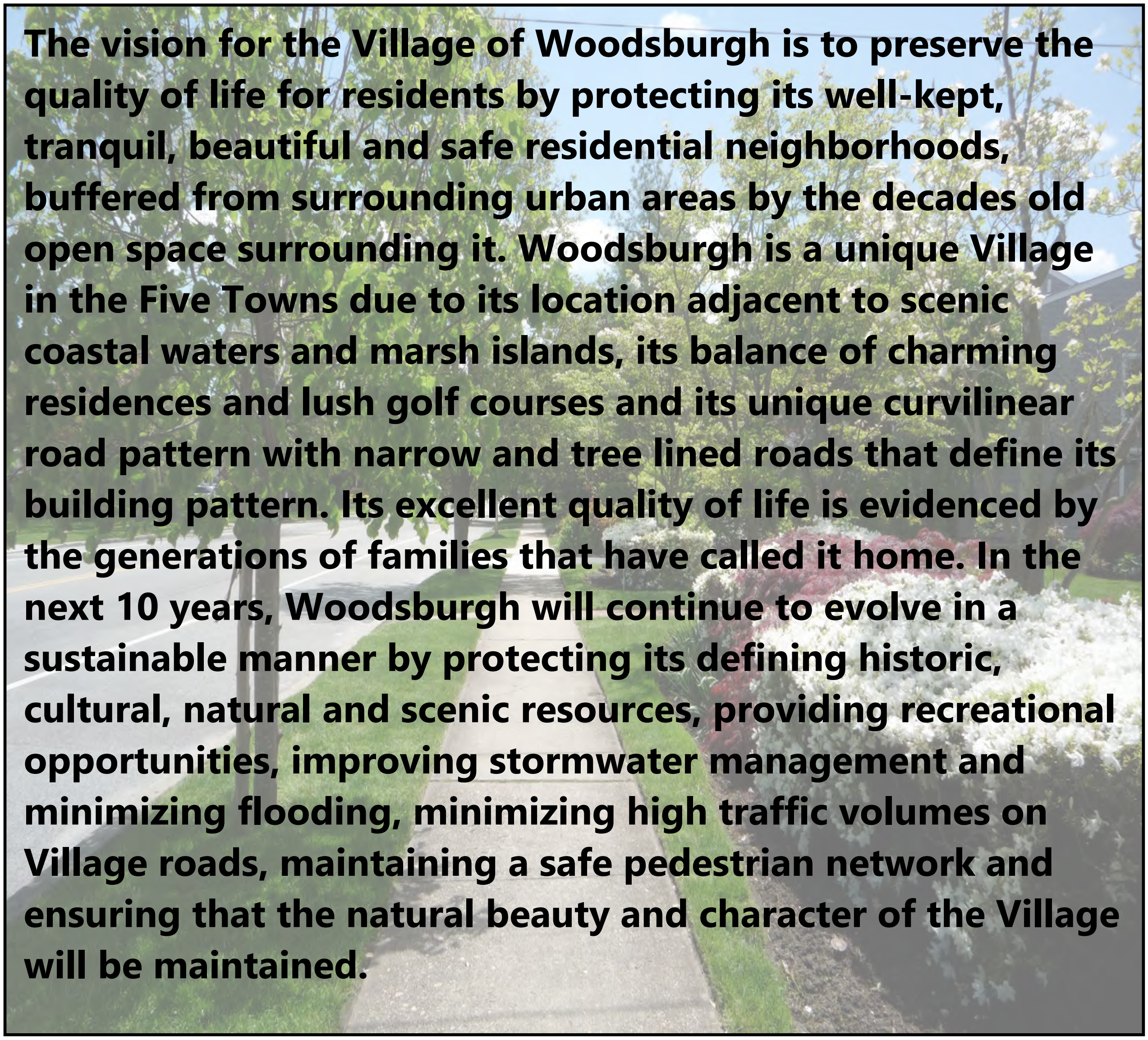
Other comments from the public for additional planning considerations included minimizing noise and air pollution, preserving the existing quality of life, preventing overcrowding, protecting quiet neighborhoods, maintaining a lower traffic volume and protecting the waterfront.

Additional issues and topics covered in the public survey, as discussed further in **Chapter V,** included parks and recreational areas, potential water dependent uses, preserving of open space in potential new developments, preferences for types of new development, important scenic views, protecting the community character from overdevelopment, stabilizing the existing housing stock, historic and cultural resources, ecology, flooding and quality of life.

The goals and objectives that follow have been identified based on public participation and are intended to further define the manner in which the Vision for Woodsburgh can be achieved.

C. A VISION FOR WOODSBURGH

The Village of Woodsburgh is a small, historic, tranquil and unique open space and residential enclave located along the south shore of Nassau County, nestled between scenic coastal waters with marsh islands and well-established and attractive residential neighborhoods. Its excellent quality of life is evidenced by the generations of families that have called it home. The Village is highly supportive of protecting and preserving its open space, natural environment and historic resources. Over the next 10 years, the community aspires to protect Woodsburgh's small Village feel, and ensure that any new development in or around the Village will protect Woodsburgh's existing community character, sensitive natural and ecological resources, as well as open space and recreational areas, and will be harmonious with the Village's existing community character.



The vision for the Village of Woodsburgh is to preserve the quality of life for residents by protecting its well-kept, tranquil, beautiful and safe residential neighborhoods, buffered from surrounding urban areas by the decades old open space surrounding it. Woodsburgh is a unique Village in the Five Towns due to its location adjacent to scenic coastal waters and marsh islands, its balance of charming residences and lush golf courses and its unique curvilinear road pattern with narrow and tree lined roads that define its building pattern. Its excellent quality of life is evidenced by the generations of families that have called it home. In the next 10 years, Woodsburgh will continue to evolve in a sustainable manner by protecting its defining historic, cultural, natural and scenic resources, providing recreational opportunities, improving stormwater management and minimizing flooding, minimizing high traffic volumes on Village roads, maintaining a safe pedestrian network and ensuring that the natural beauty and character of the Village will be maintained.

D. GOALS AND OBJECTIVES

The following goals and objectives support the Vision for the Village of Woodsburgh. To assist the Village in meeting these goals and objectives, the Vison Plan includes an Implementation Matrix which provides a list of the implementation actions, timeframes for completion, responsible parties and if applicable, potential funding sources. The Implementation Matrix is provided in **Appendix A**. It is noted that where State or Federal grants may be available, there may be a local match requirement.

COMMUNITY CHARACTER: Protect the existing community character and development pattern in the Village.

Strong support exists for protecting the existing historic building pattern that exists in the Village of Woodsburgh. Recommendations to support preservation of community character include:

- Create and adopt design guidelines that can be used by the Architectural Advisory Committee that define and promote the existing building pattern to maintain the existing character of the Village.
- Ensure that new development, including new and altered residential and nonresidential buildings, are architecturally designed to “fit” and be compatible with the Village’s high-quality residential neighborhoods.
- Revise Chapter 150 of the Village Code to incorporate specific landscaping standards to ensure all developments are landscaped in a manner that protects and promotes positive aesthetic qualities.
- Implement lighting standards that balance the need for safety during evening hours with the intent to protect the dark night sky conditions.
- Ensure that future developments provide perimeter landscape buffers in a manner that protects and promotes positive aesthetic qualities.

LAND USE AND ZONING: Maintain the Village’s existing residential and open space/recreational character.

Overall, Village stakeholders want to protect the Village’s existing quality of life, defined by its attractive residential neighborhoods and its open space. Recommendations to maintain the Village’s residential and open space/recreational character include:

- Explore the viability of a Transfer-of-Development Rights (TDR) program. A TDR program would allow development to be transferred from the golf course properties within the Village to existing downtowns that are being revitalized. The golf course properties are environmentally sensitive and vulnerable, and downtowns have the infrastructure to support development.
- Promote the use of conservation easements to preserve and protect dedicated open space.
- Explore creation of a recreational zoning district for existing properties that are in golf course use.
- Consider amending Chapter 150 to allow golf courses and/or other appropriate recreational uses as permitted uses in the appropriate zoning districts.
- Explore creation of a coastal protection zoning district that encompasses and protects environmentally sensitive areas and the NYS DOS designated significant coastal fish and wildlife habitats in the Village.
- Consider amending Chapter 131, Subdivision of Land, to give the Village the authority to require an applicant to submit a cluster subdivision plan for properties that are located within environmentally sensitive areas.

- Although the Village acknowledges it does not control zoning outside its boundaries, any future residential development outside and adjacent to Woodsburgh should match the minimum lot size of Woodburgh's zoning districts and/or permit development at a density consistent with the Village's zoning requirements.
- Consider adopting a tree preservation law that requires submission and Village approval of an application to remove or cut mature trees to preserve the wooded character of the Village.
- Create and adopt well-defined site plan review procedures and development guidelines to ensure any new development is visually attractive, protects and maintains open space, preserves natural and ecological resources and does not detract from the Village's neighborhood character.
- Consider requiring site plan and architectural approval of any new buildings proposed in the Village.
- Ensure that the building permit process requires review of building sizes to ensure they comply with the Village maximum floor area and coverage requirements applicable to each zoning district.
- Ensure that the Long Island Workforce Housing Program is implemented for any future subdivisions or any future development consisting of five or more residential units within the Village.
- Amend the Zoning Map and Code to bring the existing multi-family buildings into conformity.
- Adopt relevant zoning, planning and/or building code provisions to address impacts of rising sea levels and climate change.

NATURAL RESOURCES: Preserve and protect the existing natural resources within the Village including surface waters, floodplains, groundwater, wildlife and habitats.
Residents and stakeholders regularly observe wildlife within and adjacent to the Village given its strategic location along the shoreline. The relative lower density development within the Village in comparison to its neighboring villages, and the significant expanses of open space within the two golf courses situated in the Village, allow for these observations and serve to protect the Village from climate impacts. The golf courses adjoin the shoreline, and critical coastal habitat is present. Objectives related to natural resource protection include:

<u>Wildlife and Habitats:</u>

- Create a coastal protection zone that protects the NYS DOS-designated significant coastal fish and wildlife habitats in the Village. This zoning district should include the small high marsh area that is present within the middle portions of Woodmere Channel and represents the most ecologically viable area within the Village.
- When reviewing developments, require that the density or intensity of development considers any environmentally sensitive features which may be present, by excluding these sensitive resources when determining development yield.
- Explore the installation of a living shoreline which could improve significantly the health of native flora and fauna.
- Explore the installation of submerged aquatic vegetation along the Village's shoreline to reduce wave action, provide habitats for NYS DOS-designated significant coastal fish and wildlife and improve water quality in West Hempstead Bay.
- Restore wetlands along the shoreline that have been impacted by previous development and ensure that any new development does not degrade the quality of same, as wetlands contribute to coastal flood risk management, wave attenuation and sediment stabilization/accumulation.

- Install nesting platforms along the shoreline, especially within the Woodmere Channel to provide nesting locations for Ospreys, Peregrine Falcons and Yellow-crowned Night Herons.
- The Village should assess the population and nesting ground of the Diamondback Terrapin to determine where the species is in need of greater protection.
- Restrict development of and disturbances to the sandy coastal areas in the Village, as these areas are utilized as nesting grounds for the Diamondback Terrapin species.
- Protections for Diamondback Terrapin should be established for known or newly discovered nest locations.
- Require any new subdivision development within the Village to include a landscaping plan to promote native trees tolerant of salt spray as close to the shoreline as feasible.
- Assess the salinity and ecology of the ponds at the Woodmere Club in the Village, as these ponds may represent a significant natural area hosting turtles, frogs and other semi-aquatic species as well as a feeding ground for other species within the Village.
- The Village should explore preserving lands for public access and natural resource protection, especially along its waterfront as West Hempstead Bay to the south of the Village is home to a large variety and population of waterfowl.
- Explore the feasibility of collaborating with Cornell Cooperative Extension Marine Program and the Long Island Shellfish Restoration Project to establish a sanctuary site along the Village's shoreline as a coastal resiliency measure.
- Consider establishing a setback distance from the shoreline which will remain undisturbed and protected from encroaching development.

<u>Stormwater Management and Landscaping Techniques:</u>

- Consider amending Chapter 150, Article IX, Erosion and Sediment Control to require new developments to be designed to handle runoff from rainfall events consistent with Nassau County stormwater standards.
- Implement landscaping standards that require new development to conserve existing non-invasive vegetation where possible, as well as introduce native species to encourage low-maintenance and drought-tolerant landscaping to minimize the use of fertilizer or pesticides.
- Introduce green infrastructure stormwater controls which serve the dual purpose of greening the Village and controlling stormwater runoff.
- Require that new development install rain gardens where practicable and use slow-release organic fertilizer. Additionally, install bioswales throughout any proposed developments.
- Provide public outreach and information packets to community members to encourage the use of native plantings, rain gardens and slow-release organic fertilizer.
- Any new development should incorporate best management practices for attenuating pollutants from stormwater runoff such as managing the use of pesticides or fertilizers. Activities should be set back a minimum distance from all surface waters, and swales and other features should be introduced to filter runoff, to the extent necessary.
- Ensure that any new development does not interfere with the interconnected series of catch basins, manholes, piping systems and outfalls associated with the Broadway Drainage Area and the Keene Lane Drainage Area, as noted in Nassau County's Five Towns Drainage Study.

- Apply for funding for recently recommended improvements by the County to the Broadway (which includes Village roads) and Keene Drainage Areas, including new backflow prevention devices, water treatment devices and pipe size improvements.
- Examine existing bulkheads in the Village and determine if improvements are required to reduce flooding impacts.
- Explore the feasibility of installing crown walls on existing or new vertical structures (e.g., bulkheads and seawalls) in the Village.
- Explore the possibility of installing seawalls or floodwalls to reduce the risk of flooding during storm events.
- For any new development, Low Impact Development (LID) principles should be implemented and appropriate building standards should be adopted to provide for enhanced stormwater management.
- Install rain gardens along the roadways adjacent to the shoreline (i.e., Hickory Road, Railroad Avenue, Rutherford Lane, Woodmere Boulevard, Ivy Hill Road and Meadow Drive) to mitigate flooding and drainage issues, as well as protect groundwater. Additionally, install bioswales along these roadways.
- Work with the County to increase maintenance of storm sewers on Broadway, as this roadway is prone to flooding during rain events and high tide events.
- Limit the amount of new impervious surfaces within the Village by requiring permeable pavers to be utilized in strategic areas of new construction.

OPEN SPACE AND RECREATION: Preserve existing open space and recreation, as well as provide new open space and recreational opportunities for the community.
The community finds that existing open space and recreational areas in the Village are assets to the community. Therefore, it is recommended that the Village:

- Consider creating a recreational zoning district for recreational uses in order to preserve open space.
- Create a nature trail or boardwalk along the Woodmere Channel.
- Create an observation area along Railroad Avenue overlooking the Woodmere Channel.
- Create a walking trail linking Woodsburgh to neighboring Villages by working cooperatively with adjacent municipalities and explore reuse of existing on-site trails and walkways where new development occurs.
- Explore additional areas within the Village to locate new parks.
- Assess the feasibility of converting the Woodmere Clubhouse into a Village Community Clubhouse/Community Recreational Center.
- Incorporate a recreational component into any proposed residential development, including development of either of the golf courses.
- Ensure that parkland be set aside as part of any new major developments, or require a fee in lieu of providing land. The amount of land to be set aside as part of any development should be related to the existing and anticipated recreational demand created by new development.
- Review the Village's recreation fee schedule to align it with the Village's recreational needs.

HISTORIC AND SCENIC RESOURCES: Preserve and enhance local historic resources and important views that define the character and "sense of place" of the community.
During the public participation process, citizens noted many times that the Village contains important scenic views, as well as historic and cultural resources that should be protected:

- Adopt a local landmarks law chapter within the Code for the creation of a Village Historic Preservation Board and for identification of significant local historic, architectural and cultural landmarks. This local law chapter will also outline the powers and duties of the Historic Preservation Board.
- Designate the Woodmere Clubhouse as a local historic landmark and preserve the existing architectural features of same.
- Ensure that new development and alterations are designed in a manner consistent with the historic character of landmark buildings and properties.
- Require all new building development to be reviewed by the Village's Architectural Advisory Committee.
- Conduct cultural resource surveys in conjunction with development applications and coordinate findings with the State Historic Preservation Office (SHPO).
- Require dense vegetated buffers along the property boundaries proximate to historic resources within and adjacent to the Village in order to screen potential views of any proposed future development visible from these resources. Any mitigation proposed by SHPO or the Architectural Advisory Committee must be reviewed and incorporated into new developments, as required.
- Collaborate with the Town and County to require significant vegetated buffer areas between any new development and nearby Village roads and uses to mitigate potential visual impacts. Appropriate front yard, side yard and rear yard setbacks should match those in the Village of Woodsburgh and be implemented to reduce visual impacts on the Village.

TRANSPORTATION: Protect and promote the Village's existing road pattern, improve traffic flow to minimize high volumes of traffic on Village roadways and enhance the pedestrian network to maintain safe pedestrian pathways.
Village stakeholders expressed numerous concerns regarding a safe, adequate and efficient transportation network, as traffic within and surrounding the Village is severely congested with traffic.

- Unlike surrounding villages, Woodsburgh has a unique curvilinear road pattern with narrow roads, short road segments between intersections, and which often allow one-way traffic only. Any new major development must design new roads that adhere to this roadway pattern to protect the Village's character.
- Inventory all roads within the Village and identify any potential issues including congestion and high accident locations, pedestrian and bicycle travel and potential transportation improvements.
- Identify Village streets for potential traffic calming measures, such as Meadow Drive and Woodmere Boulevard. Specific traffic calming measures could include landscaped curb extensions, speed bumps, landscaped medians and speed signage.
- Reach out to the County to identify locations where pedestrian amenities can be enhanced to maximize safety for crossing Broadway including, but not limited to, crosswalk restriping.

- Any Applicant proposing a new major development in the Village should submit a traffic impact study that specifically addresses emergency access provisions and identifies potential improvements to the surrounding roadways.
- As Railroad Avenue is a narrow street that is prone to flooding during small rain events and sunny day flooding, a feasibility analysis should be prepared to determine the full use of the roadway, existing capacity issues and potential actions to reduce deleterious impacts.

COMMUNITY FACILITIES: Ensure that existing community services have the capacity to serve the Village and any potential developments in the future.
Community facilities are important and are an aspect of the positive quality of life in the Village. Objectives related to these facilities include:

- Ensure that during the review of any major development proposed in the Village, the community service providers (i.e., police, fire, emergency medical services and school districts) regarding facilities, services and capabilities which may be pertinent to providing service to future developments be consulted for their input.
- Assess the Woodmere-Hewlett Sewer Collection District and the New York American Water Company capacity to serve future developments in the Village.
- Consider creating a community center for the Village, which could re-use the Woodmere Club building for this purpose.
- Consider housing options for out-of-town visitors, particularly during holidays and special celebrations.

III. CONCEPTUAL LAND USE PLAN

The Conceptual Land Use Plan indicates the land use policy preferences for the areas that make up the Village of Woodsburgh. The recommended Conceptual Land Use Plan is intentionally drawn to have generalized and non-specific boundaries, so that flexibility and discretion can be used at the time that the Village Board translates the conceptual land use areas into distinct zoning districts (see **Figure 2**).

A. ACTIVE RECREATION/VILLAGE GUEST LODGING

The Active Recreation/Village Guest Lodging land use area encompasses the portion of the Woodmere property containing the Woodmere Clubhouse, adjacent parking areas, athletic facilities (e.g., tennis courts) and associated landscaping. This area has historically been used as a clubhouse since 1910 when the Woodmere Club was established over 100 years ago. The Village wishes to retain this area as a clubhouse that supports the existing privately-owned golf course. The Village prefers that the clubhouse remain in its current use, a Village community center, or enhanced and adaptively reused for limited overnight accommodations. Any development in this area should be consistent with the Active Recreation/Village Guest Lodging land use area. If a golf clubhouse is not feasible in the future for this area, the Village prefers it be utilized for limited hospitality services such as Village guest lodging. When translated into zoning, it is anticipated that a new Active Recreation/Guest Lodging zoning district, or as a component of another district, would be created to encompass this area.

B. RECREATION/VERY LOW DENSITY RESIDENTIAL I

The Recreation/Very Low Density Residential I area encompasses the Rockaway Club property that is located at the southern end of the Village. The NYS DOS-designated significant coastal fish and wildlife habitats encompass the Rockaway Club shoreline and are prioritized for protection. In addition, there is a small high marsh area on this property that may include potential habitat and nesting areas for protected shorebird species. The Village seeks to keep this area as a golf course or in passive recreational use, in order to preserve the environmentally sensitive portions of the property, maintain existing open space resources and scenic views that this area provides.

Clustered development is recommended within this land use area. Where cluster development is recommended, it refers to a development technique authorized by Section 7-738 of New York State Village Law which allows the Village Board to authorize the Planning Board to approve a cluster development. Section 7-738 defines "cluster development" as *"a subdivision plat or plats, approved pursuant to this article, in which the applicable zoning local law is modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands"*. Further, the enabling legislation states that a cluster development *"shall result in a permitted number of building lots or dwelling units which shall in no case exceed the number which could be permitted, in the planning board's judgment, if the land were subdivided into lots conforming to the minimum lot size and density requirements of the zoning local law applicable to the district or districts in which such land is situated and conforming to all other applicable requirements."*

The intended primary land use for this area is golf course use. However, should the property be proposed for alternative uses, the Vision Plan recommends that the property be redeveloped in a manner that prioritizes the protection of open space and environmentally sensitive areas and that one-family detached dwellings be sited in a cluster arrangement to achieve this goal. The current zoning (Residence 2A) requires a minimum lot size of two acres; however, the 2-acre density could be used to determine the yield for a cluster development.

C. RECREATION/VERY LOW DENSITY RESIDENTIAL II

The Recreation/Low Density Residential II area encompasses the Woodmere Club golf course property that is within the Village boundary, excluding the Woodmere Clubhouse (i.e., the Active Recreation/Village Guest Lodging area). This area contains sensitive environmental resources, existing open space and provides scenic views for the community. Additionally, this area floods frequently and is associated with tidal storm waters from West Hempstead Bay and Woodmere Channel. As described in the Recreation/Very Low Density I land use area, clustered development is recommended within this land use area.

As such, this area is intended for recreation and open space and the Village wishes to retain this area as a golf course. However, should this property be proposed for redevelopment, this Vision Plan recommends that clustered development be required. Consistent with residential density allowed in other environmentally constrained areas in the Village, the density is recommended to be one dwelling unit per approximately 2 acres. Clustered dwelling units are most appropriate to preserve recreational use and protect the most environmentally sensitive areas along the shoreline. Any development within this land use area should be situated northwest of Keene Lane/Railroad Avenue and Rutherford Avenue in the Village, in order to maximize the distance from the sensitive coastal areas; where properties have higher elevations where depth to groundwater is greatest; and where dwellings may be less susceptible to extreme flooding. Access into any proposed development should minimize the introduction of additional traffic onto Meadow Drive which is lined with existing single-family residences in the Village of Woodsburgh. Those residences would be impacted by such traffic.

D. MEDIUM TO LOW DENSITY RESIDENTIAL

The Medium to Low Density Residential area encompasses the single-family residential properties east and north of Ivy Hill Road, north of Hickory Road, south and west of Woodmere Boulevard South and Browers Point Branch, and south of Pond Lane. This area is intended for single-family detached dwellings on parcels of not less than 20,000 SF. Therefore, the Residence A zoning district is appropriate for this area. Home offices are permitted in this area, provided that the occupational facility is located in the dwelling where the practitioner lives. However, depending on size and type, would be reviewed by the Village Board to ensure the home occupation does not impact the residential neighborhood within which it is located and does not exceed a certain scale or intensity of use. Any new single-family residences constructed in this area must be compatible with the existing residential character of the community.

E. MEDIUM DENSITY RESIDENTIAL

Like the Medium to Low Density Residential area, the Medium Density Residential area encompasses existing residences within the Village. Specifically, this area generally includes all residential properties south of Broadway, west of Woodmere Boulevard South, north of Pond Lane and east of Meadow Drive. However, this area does not include the existing multi-family uses at the southeast intersection of Broadway and Meadow Drive, nor does it include the residential properties south Porter Place, west of Wood Lane, north of Keene Lane and east of Meadow Drive. This area is intended for single-family detached dwellings on parcels no less than 14,500 SF. Similar to the Medium to Low Density Residential land use area, home offices are permitted in this area. When translated into zoning, the Residence B zoning district use and bulk dimensional regulations are appropriate for this area. The single-family properties fronting Broadway are currently zoned Residence D. This Vision Plan recommends that this area of single-family residences be rezoned to Residence B.

F. MEDIUM TO HIGH DENSITY RESIDENTIAL

Similar to the Medium to Low Density Residential and the Medium Density Residential land use areas, this area encompasses existing residences within the Village. Specifically, this area generally includes all residential properties south Porter Place, west of Wood Lane, north of Keene Lane and east of Meadow Drive. This area is intended for single-family detached dwellings on parcels no less than 12,000 SF. Like the Medium to Low Density Residential and Medium Density Residential land use areas, home offices are permitted. The current Residence C Zoning District is appropriate for this land use area.

G. HIGH DENSITY RESIDENTIAL

The High Density Residential land use area encompasses the existing multi-family buildings that front along Broadway. Currently, multi-family residences are not permitted in any of the Village's zoning districts. As these developments are located in the Residence D district, this Vision Plan recommends that the Residence D district be amended to allow the existing multi-family developments at their current density. In coordination with this rezoning, it is recommended that the area identified as Medium Density Residential along Broadway which is currently developed with single family residences be rezoned to Residence B.

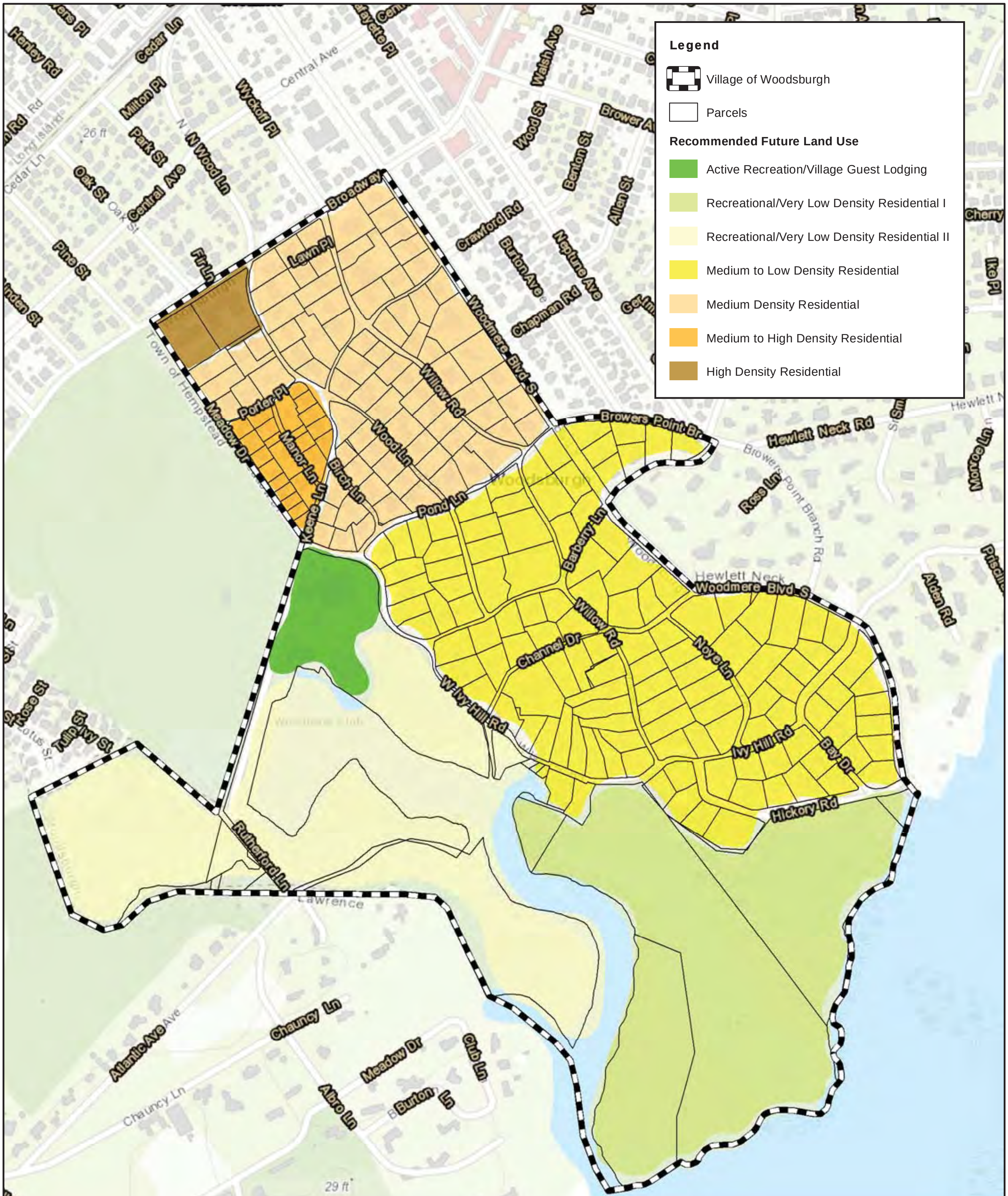


FIGURE 2
CONCEPTUAL LAND USE

Source: Nassau County GIS, ESRI World Transportation, ESRI World Topographic Map
Scale: 1 inch = 700 feet

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Village of Woodsburgh Vision Plan

IV. GOALS, OBJECTIVES AND SUPPORTING FRAMEWORK

The goals and objectives of the Vision Plan are intended to guide the Village in achieving its Vision, and to address issues presently confronting Woodsburgh. "Goals" are value statements that describe the aspirations of the community, and "objectives" are methods by which to achieve the goals. The goals and objectives were formulated through analysis of the baseline conditions and the input received through the public outreach conducted for this Plan. The chart below provides the goals ("G"), related objectives ("O") and an explanation.

G.1	**COMMUNITY CHARACTER: Protect the existing community character and development pattern in the Village.**	
	O.1.1	**Create and adopt design guidelines that can be used by the Architectural Advisory Committee that define and promote the existing building pattern to maintain the existing character of the Village.** To assist the Architectural Advisory Committee in architectural review of proposed alterations or new construction, the Village should commission the preparation of architectural review design guidelines. These guidelines would provide guidance to the Architectural Advisory Committee for reviewing development applications to ensure that they are consistent with the existing residential character in the Village.
	O.1.2	**Ensure that new development, including new and altered residential and nonresidential buildings, are architecturally designed to "fit" and be compatible with the Village's high-quality residential neighborhoods.** This Vision Plan highlights the importance of the Village's residential neighborhoods and the need to protect same. Should development occur within the Village, there is the potential that altered residential buildings or new development would not be in character with existing neighborhoods in the Village. To that end, this Plan recommends that certain standards, such as style, materials, mass, line, details and placement, be added to the Village Code to ensure that any new development that occurs is compatible with and fits the Village's high-quality residential neighborhoods.
	O.1.3	**Revise Chapter 150 of the Village Code to incorporate specific landscaping standards to ensure all developments are landscaped in a manner that protects and promotes positive aesthetic qualities**. One of the most important elements of site or subdivision design is landscaping. Landscaping – a combination of trees, shrubs, and plants that are introduced after a site has been cleared – serves as a visual, green connection to nature and the environment. Residents, visitors, and others react positively to a community when surrounded by a beautiful landscape. Landscaping is essential to the health of a community and provides functions such as absorbing runoff, purifying air, regulating temperatures, and providing sinks for species. Landscaping is also an important visual buffer or screen, which can mitigate and improve the visual appearance of streetscapes and properties. It can promote civic pride in a community and bolster property values. The Vision Plan recommends that landscape plans be specifically required in connection with development plans, and that native plants be incorporated into designs to the maximum extent. Landscaping will be required to be more than "lawn" areas - landscaped areas will be made an integral element of any project and will be elevated as an important component of any layout. Consistent with previous objectives,

		the priority of any landscape plan will be to preserve existing vegetation to soften a development.
	O.1.4	**Implement lighting standards that balance the need for safety during evening hours with the intent to protect the dark night sky conditions.** The Plan recommends that lighting standards be introduced to the zoning chapter to ensure that lighting plans are submitted as part of development applications, and that lighting plans meet the objective of minimizing light pollution. Attributes of light pollution include: the brightening of the night sky which impacts natural areas and habitats; light trespass in locations where light is not intended; and excessive brightness which causes visual discomfort. The zoning chapter would be amended to include standards promulgated by organizations such as the International Dark Sky Association.
	O.1.5	**Ensure that future developments provide perimeter landscape buffers in a manner that protects and promotes positive aesthetic qualities.** Landscaping should be provided along the perimeters of any proposed developments, to act as visual buffers to protect residential properties and roadways in the Village and the character of same.
G.2	**LAND USE AND ZONING: Maintain the Village's existing residential and open space/recreational character**	
	O.2.1	**Explore the viability of a Transfer-of-Development Rights (TDR) program. A TDR program would allow development to be transferred from the golf course properties within the Village to existing downtowns that are being revitalized. The golf course properties are environmentally sensitive and vulnerable, and downtowns have the infrastructure to support development.** A TDR program is technique the Village can utilize to preserve environmentally sensitive land such as the golf course properties which are located entirely within the 100-year floodplain and adjacent to significant coastal habitat. The Village can explore nearby downtown areas for locations for future development, as recommended in the 1999 Nassau County Master Plan, the 2001 Nassau County Open Space Plan and the Nassau County 2010 Draft Master Plan.
	O.2.2	**Promote the use of conservation easements to preserve and protect dedicated open space.** Existing open space resources and important scenic views in the Village can be protected through mechanisms that ensure that the open space remains undeveloped, such as conservations easements. For any development which incorporates open space, a conservation easement can be imposed which will run to the benefit of the Village of other open space entity such as a land trust, that would ensure the open space is used only for acceptable purposes such as passive recreation which is defined during development review, and that a third party will be given enforcement authority to ensure that objective is met.
	O.2.3	**Explore creation of a recreational zoning district for existing properties that are in golf course use.** A new recreational zoning district can be formed to establish an area within the Village specifically for recreational uses, which could permit either active recreational space (e.g., sports fields, playgrounds, swimming pools, etc.) or passive recreational space (hiking trails, habitat management, habitat restoration, exercise trails, picnic areas, etc.), or both, based on the location within the golf course properties and the sensitivity of the site-specific resources. This zoning district would be subject to reasonable design standards to maintain compatibility with the surrounding residential community.

	O.2.4	**Consider amending the Chapter 150 to allow golf courses and/or other appropriate recreational uses as permitted uses in the appropriate zoning districts.** The Village Code does not specifically permit golf courses or other recreational uses in any of the Village's zoning districts. Thus, the Village should consider amending Chapter 150 of the Code to explicitly permit golf course uses and/or other appropriate recreational uses in the applicable zoning districts to recognize existing uses.
	O.2.5	**Explore creation of a coastal protection zoning district that encompasses and protects environmentally sensitive areas and the NYS DOS designated significant coastal fish and wildlife habitats in the Village.** As the entire Village is within the South Shore Estuary Reserve, preservation of existing open space in Woodsburgh is considered a high priority. The Village of Woodsburgh finds that protection of sensitive areas and designated habitats is essential to maintaining the existing residential and open space character of the Village. Creation of a coastal protection overlay zone will establish clear guidelines for future development and preservation of these portions of the Village. In the surrounding area, where new development could occur, the objective is to maintain these habitats and environmentally sensitive areas that contribute to the open space/recreation landscape and preserve the quiet residential neighborhoods in the Village.
	O.2.6	**Consider amending Chapter 131, Subdivision of Land, to give the Village the authority to require an applicant to submit a cluster subdivision plan for properties that are located within environmentally sensitive areas.** The Village should consider including a minimum percentage of a property be set aside as open space. (e.g., 50 percent). As per 7-738 of New York State Village Law, a "cluster development" is a subdivision in which the applicable zoning local law is modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands. The Village should consider adopting cluster subdivision regulations which allow for the preservation of open space lands. Any cluster arrangement with single family dwellings should have a lot size consistent with the prevalent lot sizes in the Village.
	O.2.7	**Although the Village acknowledges it does not control zoning outside its boundaries, any future residential development outside and adjacent to Woodsburgh should match the minimum lot size of Woodburgh's zoning districts and/or permit development at a density consistent with the Village's zoning requirements.** Any planned development bordering the Village should reflect the minimum lot size of the adjacent Woodsburgh zoning district, as the public has determined that such development lots best fit the character of the Village. The Village should work with adjacent municipalities and future developers to ensure that any future lots adhere to this minimum lot area to protect the Village of Woodsburgh's community character.
	O.2.8	**Consider adopting a tree preservation law that requires submission and Village approval of an application to remove or cut mature trees to preserve the wooded character of the Village.** Tree coverage throughout the Village helps define the character of Woodsburgh. Additionally, numerous types of bird species nest in trees in the Village such that it would be beneficial to preserve mature tree that provide habitats to these species, particularly mature trees near the shoreline. Should a future applicant consider mature tree removal or cutting at a property, approval from the Village should be required. A specific caliper for any tree in Woodsburgh to be considered mature should

		be set by the Village. Additionally, should the Village approve cutting or removal of mature trees, an applicant should be required to provide a landscaping plan for revegetation.
	O.2.9	**Create and adopt well-defined site plan review procedures and development guidelines to ensure any new development is visually attractive, protects and maintains open space, preserves natural and ecological resources and does not detract from the Village's neighborhood character.** Pursuant to Village Law §7-725-a, standardized requirements for site plan application and review should be established to assure that the design and layout of future development in the Village will ensure the public health, safety and welfare of residents and will be compatible with certain natural and human-made features. Well-defined site plan review procedures will promote a well-planned community through proper arrangement of means of access, screening, signs, landscaping, architectural features, locations and dimensions of structures and physical features of parcels to be improved. Subdivision zoning laws should be developed to provide protections of the Village's community resources including natural, coastal, ecological, scenic, historic, recreational and open space resources.
	O.2.10	**Ensure that the building permit process requires review of building sizes to ensure they comply with the Village maximum floor area and coverage requirements applicable to each zoning district.** In addition to building permit application requirements, the Village should develop a review process that requires an applicant submit the necessary information to demonstrate compliance with maximum permitted floor area in each district, as provided in Chapter 150 of the Code, as well as the maximum lot area coverage (§150-39.A) and maximum permitted impervious surface coverage (§150-39.B).
	O.2.11	**Ensure that the Long Island Workforce Housing Program is implemented for any future subdivisions or any future development consisting of five or more residential units within the Village.** Per the Long Island Workforce Housing Program, any new subdivision plat or site plan for five or more residential units should allocate ten percent of such development for affordable workforce housing on site or pay a fee in lieu of constructing the affordable units. In accordance with the Long Island Workforce Housing Program, any applicant that sets aside 10 percent of their housing units as affordable housing will receive a density bonus or other incentives pursuant to a written agreement between the applicant and the Village.
	O.2.12	**Amend the Zoning Map and Code to bring the existing multi-family buildings into conformity**. The High Density Residential land use area encompasses the existing multi-family buildings that front along Broadway which is within the Residence D district. Currently, multi-family residences are not permitted in any of the Village's zoning districts and the Residence D district permits single family homes on 12,000 SF lots. This Vision Plan recommends that the Residence D district code be amended to allow the existing multi-family developments at their current density and that the Village Zoning Map be amended to show the Residence D district encompassing the existing multi-family building sites. In coordination with the Zoning Map and code amendments to define the Residence D district, the single-family properties fronting Broadway currently zoned Residence D should be rezoned to Residence B.
	O.2.13	**Adopt relevant zoning, planning and/or building code provisions to address impacts of rising sea levels and climate change.** The Village is a low-lying area on the front lines of climate change and sea level rise. Areas of the Village flood during storms and sunny

		day flooding. The Village must address in its code provisions consideration of prohibition of buildings and new development where it floods now, address infrastructure changes to assure that existing development is protected from rising sea levels and climate change and assure that infrastructure for new development does not negatively impact existing development, and inclusion of code provisions that address potential impacts from rising sea levels and climate change.
G.3	**NATURAL RESOURCES: Preserve and protect the existing natural resources within the Village including surface waters, floodplains, groundwater, wildlife and habitats.**	
	WILDLIFE AND HABITATS	
	O.3.1	**Create a coastal protection zone that protects the NYS DOS-designated significant coastal fish and wildlife habitats in the Village. This zoning district should include the small high marsh area that is present within the middle portions of Woodmere Channel and represents the most ecologically viable area within the Village.** The NYS DOS-designated significant coastal fish and wildlife habitats encompass the Rockaway Club shoreline located in the southeastern portion of the Village. A significant coastal fish and wildlife habitat is an area that has been evaluated and determined significant by the New York State Department of Environmental Conservation and has been designated for protection. The high marsh area, a portion of the Rockaway Club in the Village, may include potential habitat and nesting areas for protected shorebird species and, therefore, should be protected through the creation of a coastal protection overlay zone.
	O.3.2	**When reviewing developments, require that the density or intensity of development reflects the environmentally sensitive features which may be present, by excluding these sensitive resources when determining development yield.** Any new development density must reflect the underlying environmental constraints of the land. The Village should consider requiring environmentally constrained lands be subtracted when determining the minimum lot area to ensure these resources are not developed.
	O.3.3	**Explore the installation of a living shoreline which could improve significantly the health of native flora and fauna.** Living shorelines have been shown to be ecologically beneficial and more effective at buffering storm damage. As the majority of the Village hosts hardened shorelines in the form of bulkheads, same are frequently in need of repair. In addition, given the Village's proximity to a highly active ecological area, exploring the installation of a living shoreline could lead to a vast improvement of the health of the native flora and fauna. The potential for living shorelines along the coastal areas of New York State is being explored by a few municipalities and state government agencies. If the Village explores this avenue, a potential exists for financial assistance in the form of a grant from the state.
	O.3.4	**Explore the installation of submerged aquatic vegetation along the Village's shoreline to reduce wave action, provide habitats for NYS DOS-designated significant coastal fish and wildlife and improve water quality in West Hempstead Bay.** Submerged aquatic vegetation performs many important functions including wave attenuation, buffering shorelines by stabilizing sediments with plant roofs, water quality improvements and provides habitats for numerous species of fish. As flooding is a main concern and protecting significant wildlife is a goal set forth in this Vision Plan, submerged aquatic vegetation installations have the potential to help mitigate flooding and achieve this goal.

	O.3.5	**Restore wetlands along the shoreline that have been impacted by previous development and ensure that any new development does not degrade the quality of same, as wetlands contribute to coastal flood risk management, wave attenuation and sediment stabilization/accumulation.** Dense vegetation and shallow water in wetlands can slow the advance of a storm surge to an extent and can help reduce the surge landward of the wetland. The Village was greatly impacted by Superstorm Sandy and experiences flooding during typical rain events and sunny day and minor flooding. It is the Village's intent to mitigate flooding impacts and ensure that existing wetlands are protected, and the coastal area is made more resilient to aid in this mitigation. Additional setbacks need to be implemented to protect these wetlands from any new development in the Village.
	O.3.6	**Install nesting platforms along the shoreline, especially within the Woodmere Channel to provide nesting locations for Ospreys, Peregrine Falcons and Yellow-crowned Night Herons.** Nesting platforms are utilized throughout Long Island to provide nesting locations for Osprey. Any shoreline location, especially within Woodmere Channel would be a prime location for one or more of these platforms. As Osprey are regularly observed in the area, same are likely to be readily utilized. It is also possible that Peregrine Falcons, if breeding in the area, would utilize a portion of the platforms.
	O.3.7	**The Village should assess the population and nesting ground of the Diamondback Terrapin to determine where the species is in need of greater protection.** Several people noted at the public open house that Diamondback Terrapins are present throughout the Village's shoreline and throughout the golf courses within and adjacent to the Village. Diamondback Terrapins are not identified as an endangered or threatened species in New York State and until recently were considered a game species with an open season. However, on May 1, 2018 commercial harvest was completely eliminated in New York State. Although the species receives no additional protections from the state, it is considered a vulnerable species, with several other states currently listing the species as endangered, threatened, or a species of special concern. Therefore, the Village should evaluate the number and locations of Diamondback Terrapins in the Village and provide the necessary protection measures to ensure future development within the Village does not disrupt the nesting grounds and population of these species.
	O.3.8	**Restrict development of and disturbances to the sandy coastal areas in the Village, as these areas are utilized as nesting grounds for the Diamondback Terrapin species.** As this species utilizes sandy coastal areas for nesting, same should not be developed in contravention to their habitat needs. Protections should be enabled as necessary for known nest locations.
	O.3.9	**Protections for Diamondback Terrapin should be established for known or newly discovered nest locations.** Careful planning should be considered for any potential development on tidal wetlands areas. In addition to local, state, and federal permitting for wetlands and endangered species, consideration of Northern Diamondback Terrapin habitat and nesting ground should be identified, especially for projects on the water and/or beach with extensive pile and sheeting installations. Should the species be found in abundance or nesting with a project area, the project(s) may warrant a limiting construction window, specifically June 1st to September 1st, when the species is actively breeding/hatching.

	O.3.10	**Require any new subdivision development within the Village to include a landscaping plan to promote native trees tolerant of salt spray as close to the shoreline as feasible.** Any potential redevelopment within the Village, whether directly or indirectly should include a planting plan promoting native trees tolerant of salt spray as close to the water as feasible. As Yellow-crowned Night Herons typically nest in trees and feed in shallow waters, it would be beneficial to the species to plant trees closer to the water.
	O.3.11	**Assess the salinity and ecology of the ponds at the Woodmere Club in the Village, as these ponds may represent a significant natural area hosting turtles, frogs and other semi-aquatic species as well as a feeding ground for other species within the Village.** The ponds may represent a significant natural area hosting turtles, frogs and other semi-aquatic species as well as a feeding ground for other species. Given the proximity to Woodmere Channel, salt spray may increase the salinity of these ponds and thus limit their usage by freshwater species. These ponds should be assessed in terms of ecology and salinity to decide how best to preserve and/or restore them. If park land or development were to occur, these ponds would represent a good open space focal point.
	O.3.12	**The Village should explore preserving lands for public access and natural resource protection, especially along its waterfront as West Hempstead Bay to the south of the Village is home to a large variety and population of waterfowl.** West Hempstead Bay/Jones Beach West, which consists of the waters adjacent to and south of the Village, is an Audubon-designated Important Bird Area and is home to a large variety and population of waterfowl. This offers a natural area of interest for hikers and other passive recreation users. As such, it is suggested that the Village consider preserving lands for public access and natural preservation especially along its waterfront.
	O.3.13	**Explore the feasibility of collaborating with Cornell Cooperative Extension Marine Program and The Long Island Shellfish Restoration Project to establish a sanctuary site along the Village's shoreline as a coastal resiliency measure.** In 2017, New York State established five shellfish sanctuary sites at strategic locations in Nassau County and Suffolk County where restored native shellfish populations will both improve water quality and support resiliency of coastal communities. These sites are managed by Stony Brook University and Cornell Cooperative Extension in partnership with municipalities and volunteers. The Town of Hempstead was one of the two locations in Nassau County selected for this grant program. As Woodsburgh is a coastal community that aims to combat flooding and adapt to sea level rise, the Village should discuss the feasibility of a potential sanctuary site along the Village's shoreline with the Long Island Shellfish Restoration Project staff.
	O.3.14	**Consider establishing a setback distance from the shoreline which will remain undisturbed and protected from development.** Require that development be sufficiently set back a minimum distance from the shoreline to protect environmentally sensitive areas and species. The Village should evaluate an appropriate minimum setback distance from the shoreline.
	STORMWATER MANAGEMENT AND LANDSCAPING TECHNIQUES	
	O.3.15	**Consider amending Chapter 150, Article IX, Erosion and Sediment Control to require new developments to be designed to handle runoff from rainfall events consistent with Nassau County stormwater standards.** Stormwater runoff from weather events, if not captured by storage systems, has the potential to collect and transport pollutants from development areas to nearby surface waters. As the Village Code does not provide specific requirements for onsite stormwater management systems, the Village should

		consider adopting the County's storage requirements and stormwater standards no less stringent than Nassau County. In this regard, given the potential coastal impacts due to the Village's geographical location, any waivers permitted in Nassau County regulations should be restricted in any new Village standards.
	O.3.16	**Implement landscaping standards that require new development to conserve existing non-invasive vegetation where possible, as well as introduce native species to encourage low-maintenance and drought-tolerant landscaping to minimize the use of fertilizer or pesticides.** Native plants are well adapted to local conditions and require little irrigation and no fertilization once they are established. Additionally, native plants provide pollinator habitats for local species. Native plant species also reduce the potential for water quality impacts. Waters associated with the Long Island South Shore Estuary Reserve have been more impaired than another other region of New York State as a result of nitrogen loading. Conservation of non-invasive species and installation of native species within the Village will protect and restore living resources in West Hempstead Bay.
	O.3.17	**Introduce green infrastructure stormwater controls which serve the dual purpose of greening the Village and controlling stormwater runoff.** The combined concentrations of contaminants that drain from developed areas can threaten the quality of nearby water bodies, which in turn can degrade the quality of drinking water, as well as damage habitats for species that depend on clean water for survival. Pollutants carried by stormwater can also affect recreational uses of water bodies by making them unsafe for swimming, boating or fishing. Current sustainable stormwater design practices recommend that stormwater runoff be treated "at the source". A benefit is that runoff is then treated and ultimately recharges groundwater sources at the same point where it is discharged. Examples of green infrastructure stormwater techniques include but are not limited to: rain gardens, bioretention areas, vegetated swales/dry swales; green roofs; porous pavement; stream buffer restoration; stormwater planters and tree filters; and other techniques. In addition to managing stormwater and recharging the underlying aquifer, they can provide wildlife habitat, beautify neighborhoods, cool urbanized areas, and improve air quality. The Village supports these techniques throughout the community and in any new developments, in order to protect the Village's water resources.
	O.3.18	**Require that new development install rain gardens where practicable and use slow-release organic fertilizer. Additionally, install bioswales throughout any proposed developments.** The Village should require rain gardens or similar biofiltration mechanisms in any new development, as these landscaping features can be incorporated into buffer areas and are designed to provide dominant natural vegetation that enhances biological uptake of pollutants and infiltration of treated stormwater, as well as reduce flooding. Plant roots filter water slowly and treat nitrogen, phosphorus, fecal coliform and suspend solids that are carried by stormwater rather than discharging these pollutants to surface waters and groundwater. Rain gardens also support pollinator habitat by attracting native bees, butterflies and birds. The Village should also require the use of slow-release organic fertilizer in new developments, as these types of fertilizers are renewable, biodegradable, sustainable and environmentally friendly. Similar to rain gardens, bioswales are landscaped drainage features that collect, filter and infiltrate stormwater, which improves water quality and reduces stormwater runoff. While bioswales achieve the same goal as rain gardens, these features are designed to management specific amounts of runoff from large impervious areas. Coupled with rain

		gardens, installation of bioswales can further promote the Village's intent to improve water quality and reduce flooding.
	O.3.19	**Provide public outreach and information packets to community members to encourage the use of native plantings, rain gardens and slow-release organic fertilizer.** Property owners may be unaware of what they can do to promote a native ecology in their own yards that would function as an extension of natural areas. Native plantings, slow-release organic fertilizer and rain gardens would all be feasible options for residents. Public outreach and education are pivotal in promoting these activities.
	O.3.20	**Any new development should incorporate best management practices for attenuating pollutants from stormwater runoff such as managing the use of pesticides or fertilizers. Activities should be set back a minimum distance from all surface waters, and swales and other features should be introduced to filter runoff, to the extent necessary.** Utilizing best management practices and providing appropriate setbacks will protect water quality and reduce transportation of pollutants from development areas to nearby surface waters. When properly applied and managed, fertilizers pose fewer risk to water quality, humans and animals. Natural, slow release organic fertilizers should only be utilized in the Village to further protect water quality. The Village should prohibit application of fertilizers no less than 20 feet from nearby surface waterbodies and vegetated buffers should be established between application areas and waterbodies. Nitrogen and phosphorus best management practices should be utilized to protect groundwater and surface waters.
	O.3.21	**Ensure that any new development does not interfere with the interconnected series of catch basins, manholes, piping systems and outfalls associated with the Broadway Drainage Area and the Keene Lane Drainage Area, as noted in Nassau County's Five Town's Drainage Study.** Both the Keene Lane and Broadway Drainage Areas support stormwater management systems through the Village. Any new development that occurs within the Village should not remove or interfere with pipes (or provide for replacement that will better accommodate stormwater), catch basins and manholes that discharge to two outfall locations on Railroad Avenue into the Woodmere Channel. It should be noted that the Keene Lane Drainage system runs throughout the Village roadways and the Broadway Drainage system runs along Broadway outside of the Village and through the Woodmere Club to the outfall location along Railroad Avenue.
	O.3.22	**Apply for funding for recently recommended improvements by the County to the Broadway (which includes Village Roads) and Keene Drainage Areas, including new backflow prevention devices, water treatment devices and pipe size improvements.** As noted in the Nassau County Five Towns Drainage Study, there are several recommendations for drainage improvements for both drainage areas, which would limit flooding within the Village. The Village should obtain funding for these improvements to alleviate flooding throughout Village roadways and flooding in residents' homes.
	O.3.23	**Examine existing bulkheads in the Village and determine if improvements are required to reduce flooding impacts.** It is apparent from the current flooding issues that existing storm infrastructure in the Village is aged. The Village should inspect the existing bulkheads throughout the Village and determine if improvements or new infrastructure is required.
	O.3.24	**Explore the feasibility of installing crown walls on existing or new vertical structures (e.g., bulkheads and seawalls) in the Village.** Crown walls are small reinforced concrete

		walls that are approximately 1 to 3 feet high. The Village should consider installing crown walls on existing bulkheads throughout the Village to reduce the risk of flooding
	O.3.25	**Explore the possibility of installing seawalls or floodwalls to reduce the risk of flooding during storm events.** The primary purpose of seawalls and floodwalls is to intercept waves, prevent erosion and reduce flood risks in low-lying coastal areas. The Village has been impacted by storms as a result of low elevations and its coastline location. Sea level rise is also an issue of concern for the Village and surrounding areas due to location along the coastline. As sea levels continue to rise, these areas will become increasingly vulnerable to impacts associated with flooding from storm surges and weather events. The Village should explore the feasibility of installing seawalls and floodwalls at appropriate locations as a means of flood risk management.
	O.3.26	**For any new development, Low Impact Development (LID) principles should be implemented and appropriate building standards should be adopted to provide for enhanced stormwater management** LID reduces large point source discharges, reduces strain on public infrastructure and reduces localized flooding impacts**.** The Village should implement LID principles and adopt appropriate building standards for future developments to provide for enhanced stormwater management by addressing stormwater on a lot-by-lot basis.
	O.3.27	**Install rain gardens along the roadways adjacent to the shoreline (i.e., Hickory Road, Railroad Avenue, Rutherford Lane, Woodmere Boulevard, Ivy Hill Road and Meadow Drive) to mitigate flooding and drainage issues, as well as protect groundwater. Additionally, install bioswales along these roadways.** These roadways are highly susceptible to flooding and due to their locations proximate to the shoreline. The Village desires to mitigate flooding impacts and improve drainage in these areas. Rain gardens and bioswales along these roadways can reduce flooding by capturing overflow from drywells and drainage areas and from impervious surfaces throughout the Village.
	O.3.28	**Work with the County to increase maintenance of storm sewers on Broadway, as this roadway is prone to flooding during rain events and high tides.** The Village desires to reduce flooding on roadways within and adjacent to Woodsburgh. As Broadway floods frequently and residents have expressed concerns regarding flooding on this roadway, the Village, in partnership with the County, should improve drainage infrastructure along Broadway and require frequent maintenance of same.
	O.3.29	**Limit the amount of new impervious surfaces within the Village by requiring permeable pavers and/or natural opening pavers to be utilized in strategic areas of new construction.** Impervious surfaces limit the amount of rainfall that can be infiltrated into groundwater, which results in more stormwater runoff to waterbodies during rain events. New development within the Village would result in an increase in stormwater runoff that may exacerbate stormwater runoff existing infrastructure and flooding problems. Any development within the Village should be required to incorporate permeable pavers into their design. Permeable surface requirements should be implemented on a case-by-case basis and considered for all projects through the Village review and approval process.
G.4	**OPEN SPACE AND RECREATION: Preserve existing open space and recreation, as well as provide new open space and recreational opportunities for the community.**	
	O.4.1	**Consider creating a recreational zoning district for recreational uses in order to preserve open space.** As there are limited recreational and open space lands in the

		Village, allocating specific areas for a recreational zoning district would establish parameters for future use and protection of important resources in the Village. A recreational zoning district, or inclusion of recreational components in an existing or new district, could permit recreational space such as hiking trails, exercise trails, picnic areas, etc., based on the locations within the properties and the sensitivity of the site-specific resources. These recreational areas would be created for the benefit of Village residents.
	O.4.2	**Create a nature trail or boardwalk along the Woodmere Channel.** It is the Village's intent to create and maintain recreational/open space in Woodsburgh while also protecting environmentally sensitive land within the Village. Given the environmental sensitivity along the Woodmere Channel, the Village seeks to retain the majority of the land along the channel for passive recreational uses.
	O.4.3	**Create an observation area along Railroad Avenue overlooking the Woodmere Channel.** The Village has long desired to establish formal observation area along Railroad Avenue overlooking the Woodmere Channel. However, a portion of the existing parking area along Railroad Avenue has historically been used as a storage area for the Woodmere Club. Review of aerial photographs show that the portion of the parking area closest to the channel is not owned by the Woodmere Club. The Village should work to obtain an easement or access to create an observation area in this location for Village residents.
	O.4.4	**Create a walking trail linking Woodsburgh to neighboring Villages by working cooperatively with adjacent municipalities, and explore reuse of existing on-site trails and walkways where new development occurs.** An opportunity exists to create pedestrian connections between Woodsburgh and neighboring Villages. A wayfinding system of signage road markings and other mechanisms can be implemented to direct residents of Woodsburgh and adjacent Villages to a newly created walking trail and encourage outdoor recreation.
	O.4.5	**Explore additional areas within the Village to locate new parks.** Should new development occur within Woodsburgh, the Village should work with private developers to create parks in any new development to ensure that landscaping, seating areas, pedestrian access and other features are worked into all future development seeking to locate in Woodsburgh.
	O.4.6	**Assess the viability of converting the Woodmere Clubhouse into a Village Community Clubhouse/Community Recreational Center.** The Village considers the Woodmere Clubhouse as a prominent asset, given the history associated with the clubhouse/Woodmere Club and wishes to preserve this building. As part of the public open house, residents were asked if they would like to see a Village clubhouse and where. The participants identified the Woodmere Clubhouse as an appropriate location for a recreational center. As the Village seeks to establish a community center for residents due to the limit amount of recreational opportunities in Woodsburgh, the Village should explore with the present or any future owner the feasibility of converting the Woodmere Clubhouse into a community clubhouse/community recreational center for Woodsburgh residents.
	O.4.7	**Incorporate a recreational component into any proposed residential development, including development of either of the golf courses.** As there is a lack of recreation in the Village, any new residential development proposed must include a recreational component, including development on either of the golf course properties, which can have ample plot areas to accommodate recreational space.
	O.4.8	**Ensure that parkland be set aside as part of any new major developments, or require a fee in lieu of providing land. The amount of land to be set aside as part of any**

		development should be related to the existing and anticipated recreational demand created by new development. Section 131-25 of the Village Code requires a cash payment in lieu of reservation of park area in the Village for new subdivisions. As there is a lack of parkland, open space and recreational uses within Woodsburgh, the Village should require parkland be set aside in any new major developments within the Village. If this option is not feasible, a fee in lieu must be provided.
	O.4.9	**Review the Village's recreation fee schedule to align it with the Village's recreational needs.** The Village Planning Board should review the current recreation fee schedule and determine whether the established amount is appropriate given the need for additional recreational space in the Village set forth in this Vision Plan.
G.5	**HISTORIC AND SCENIC RESOURCES: Preserve and enhance local historic resources and important views that define the character and "sense of place" of the community.**	
	O.5.1	**Adopt a local landmarks law chapter within the Code for the creation of a Village Historic Preservation Board and for identification of significant local historic, architectural and cultural landmarks. This local law chapter will also outline the powers and duties of the Historic Preservation Board.** The Plan acknowledges the importance of the Village's history, and the need to protect the resources that contribute to it. As there are areas and structures in the Village that are of local importance that have yet to be established as local historic landmarks, the Village should create a Historic Preservation Board. This Board can review potential resources in the Village and determine their significance through a well-defined process and appropriate criteria (such as character or historic or aesthetic interest of value, embodies distinguishing characteristics of an architectural type, period or style etc.) and provide recommendations for acquisition and preservation. A new chapter in the Village Code should be established that outlines this criteria, process and powers and duties of the Historic Preservation Board. This chapter should also include certificate of appropriateness application procedures for alteration, demolition or new construction affecting local historic landmarks in the Village.
	O.5.2	**Designate the Woodmere Clubhouse as a local historic landmark and preserve the existing architectural features of same.** Once a Historic Preservation Board has been established, this Board should review existing historic literature of the Woodmere Clubhouse and designate the building as a local historic landmark if it meets the qualifications established within the landmarks law. The public has expressed interest in preserving the Woodmere Clubhouse and, therefore, the Historic Preservation Board should utilize the newly created criteria to determine its historic and/or architectural significance and make recommendations to the Village Board of Trustees to acquire and preserve the building.
	O.5.3	**Ensure that new development and alterations are designed in a manner consistent with the historic character of landmark buildings and properties.** Should new development occur in the Village, the loss of each individual property reduces the overall character of what makes the community uniquely Woodsburgh. To that end, this Vision Plan specifically recommends that local historic preservation regulations be adopted to protect locally designated historic buildings and places. All new developments and alterations to existing structures must be reviewed the Historic Preservation Board to ensure the historic and aesthetic character of the Village is maintained. New development and alterations to existing structures should contain exterior architectural features such as design elements and materials that are in character with existing structures in the

		Village. Additionally, all alterations and new development must apply for a certificate of appropriateness if it is deemed that alterations, demolition or new construction will affect any Village landmark.
	O.5.4	**Require all new building development to be reviewed by the Village's Architectural Advisory Committee.** Review of any new buildings by the Village Architectural Advisory Committee would ensure that any new development that occurs in the Village will be regulated in a manner which preserves the historic building patterns.
	O.5.5	**Conduct cultural resource surveys in conjunction with development applications and coordinate findings with the State Historic Preservation Office (SHPO).** Coastal areas have higher than average potential to yield significant historic and archaeological artifacts in land areas which have been largely undisturbed or only subject to shallow fill. According to the New York State SHPO's Cultural Resources Information System (CRIS) the Village as a whole is within an archaeologically sensitive area. As part of the environmental review process for development applications, the proposed project should be referred to SHPO to determine whether a cultural resource survey should be conducted.
	O.5.6	**Require dense vegetated buffers along the property boundaries proximate to historic resources within and adjacent to the Village in order to screen potential views of any proposed future development visible from these resources. Any mitigation proposed by SHPO or the Architectural Advisory Committee or future Historic Preservation Board must be reviewed and incorporated into new developments, as required.** Although the Village does not contain any National Register of Historic Places designated historic districts, there are two National Register of Historic Places eligible Historic Districts proximate to the Village. Immediately south and west of the Village is the National Register of Historic Places eligible Rockaway Hunt Historic District. Northwest of the westernmost Village boundary is the National Register of Historic Places eligible Flower Streets Historic District. In order to mitigate potential impacts on surrounding historic districts and properties, it is recommended that dense vegetated buffers be required along the boundaries of any new development within the Village that is located proximate to these historic resources in order to screen potential views proximate to same unless the new development is strictly compatible with these historic resources. Any mitigation, recommendations, general design criteria and preservation techniques proposed by SHPO and/or the Village's Historic Preservation Board must be reviewed and incorporated into any new development, as required.
	O.5.7	**Collaborate with the Town and County to require significant vegetated buffer areas between any new development and nearby Village roadways and uses to mitigate potential visual impacts. Appropriate front yard, side yard and rear yard setbacks should match those in the Village of Woodsburgh and be implemented to reduce visual impacts on the Village.** Tree lined, curvilinear roadways and attractive residential neighborhoods thriving with greenery. In order to mitigate potential impacts on existing residences, any new development within or immediately adjacent to the Village should be required to install significant vegetated buffers between any new development and Village roadways. It is understood that the Village must work with both the Town and County to achieve this objective in order to protect the existing character of Woodsburgh. Additionally, the Village should work with the Town and County to ensure that any new development adjacent to Woodsburgh contains front, side and rear yard setbacks are equivalent to adjacent Village zoning district setbacks.

G.6	TRANSPORTATION: Protect and promote the Village's existing road pattern, improve traffic flow to minimize high volumes of traffic on Village roadways and enhance the pedestrian network to maintain safe pedestrian pathways.	
	O.6.1	**Unlike surrounding villages, Woodsburgh has a unique curvilinear road pattern with narrow roads, short road segments between intersections, and which often allow one-way traffic only. Any new major development must design new roads that adhere to this roadway pattern to protect the Village's character.** Based on the public survey, 82% of respondents agreed that winding narrow roadways enhances the character of Woodsburgh, as do decorative lamp posts (86% of respondents agreed) and wooden street signage (75% of respondents agreed). Chapter 131, Article V of the Village Code provides general requirements for subdivision design with specific mention of street standards. Any new development within the Village must adhere to these requirements (including, but not limited to, undergrounding of utilities, streetlighting, signage and installation of street trees) while also being mindful of the existing road patterns in the Village, which consists of curving streets, narrow roads, short road segments and one-way only roadways. Any new streets that are developed and connect to Village roadways must be designed to seamlessly connect to such roadway and provide similar street features as those within the Village.
	O.6.2	**Inventory all roadways within the Village and identify primary transportation issues including roadway deficiencies, congestion and high accident locations, pedestrian and bicycle travel and potential transportation improvements.** A major concern raised at the public open house and identified by the community in the public survey are transportation issues on Village roads. These issues ranged from poor drainage to high traffic volume on certain roads. As one of the goals for the future of Woodsburgh is to improve traffic flow the Village must provide for an inventory of all Village roads and determine the level of improvements required for these roads and which road improvements are the highest priority.
	O.6.3	**Identify Village streets for potential traffic calming measures, such as Meadow Drive and Woodmere Boulevard. Specific traffic calming measures could include landscaped curb extensions, speed bumps, landscaped medians and speed signage.** Many residents frequently enjoy walks along Village's roads with their families. However, residents have expressed the need to enhance the pedestrian network to maintain safe pedestrian pathways, one of the major goals in this Vision Plan. The Village desires to ensure that traffic travels at reasonable, safe operating speeds which are protective of pedestrians and property. The Village must identify streets within the Village that require traffic calming measures in order to achieve this goal. Once these streets are identified, the Village can seek grants to redesign the rights-of-way to introduce features such as curb extensions, speed bumps and new signage to slow traffic and create a safer atmosphere for pedestrians. Curb extensions can also be used for landscaping treatments and stormwater controls. All new streets associated with new development in the Village should incorporate traffic calming measures into their design if deemed appropriate by the Village.
	O.6.4	**Reach out to the County to identify locations where pedestrian amenities can be enhanced to maximize safety for crossing Broadway including, but not limited to, crosswalk restriping.** During field investigations by consultant staff, faded crosswalks were noted along Broadway in the vicinity of the Village. In order to improve safety, encouraging walking and bicycling in and around the Village, measures such as crosswalk

		restriping should be explored. Well striped crosswalks provide a visual queue that pedestrians may be crossing the street. As Broadway is a Nassau County owned road, the Village must work with County to discuss improvements in order to maximize pedestrian safety.
	O.6.5	**Any Applicant proposing a new major development in the Village should submit a traffic impact study that specifically addresses emergency access provisions and identifies potential improvements to the surrounding roads.** The Village finds that minimal traffic congestion and pedestrian safety important for the future of Woodsburgh. Traffic impact studies are documents that clearly identify potential impacts associated with a project and identify proper mitigation measure to reduce such impacts. As the Village roads are currently congested, are narrow and some are limited to one-way directions only, any applicant proposing new development in the Village must provide a traffic impact study listing all potential impacts on the Village and appropriate measures to mitigate same.
	O.6.6	**As Railroad Avenue is a narrow street that is prone to flooding during small rain events and sunny day flooding, a feasibility analysis should be prepared to determine the full use of the road, existing capacity issues and potential actions to reduce deleterious impacts.** The Village should analyze Railroad Avenue and determine the most appropriate measures to protect community members and surrounding properties, as this roadway can be inundated during storm events. In addition, new drainage infrastructure or roadway design should be considered along this roadway to reduce flooding.
G.7	**COMMUNITY FACILITIES: Ensure that existing community services have the capacity to serve the Village and any potential developments in the future.**	
	O.7.1	**Ensure that during the review of any major development proposed in the Village, the community service providers (i.e., police, fire, emergency medical services and school districts) regarding facilities, services and capabilities which may be pertinent to providing service to future developments be consulted for their input.** Community service provider feedback is important for any new development in order to protect the health, safety and welfare of the Village. These community service providers can offer prominent insight into potential impacts and mitigation measures that will allow these providers to adequately serve the Village. Therefore, any new development in the Village must allow police, fire, emergency medical services and school districts to review such projects and offer input.
	O.7.2	**Assess the Woodmere-Hewlett Sewer Collection District and the New York American Water Company capacity to serve future developments in the Village.** Should new development occur in the Village, feasibility studies should be prepared by any applicant to determine if public sewer and water infrastructure can sufficiently serve the needs of such development. The density of any development must reflect the availability of public sewer and water infrastructure based on discussions with the Woodmere-Hewlett Sewer Collection District and the New York American Water Company. These feasibility studies should take into account any planned development in these districts' boundaries.
	O.7.3	**Consider creating a community center for the Village, which could re-use the Woodmere Club building for this purpose.** Several participants of the public open house identified the Woodmere Clubhouse as a potential location for a community center. Some community members also identified the Woodmere Clubhouse as a potential meeting place or clubhouse for community members. As there is limited recreational

		space/areas within Woodsburgh, the Village should explore the idea of converting the Woodmere Clubhouse into a community center for Village residents to utilize. This will advance the Village's goal to provide additional recreational uses within the Village.
	O.7.4	**Consider housing options for out-of-town visitors, particularly during holidays and special celebrations.** If a community center or clubhouse is not considered feasible for the Woodmere Clubhouse, there is an opportunity for this building to be utilized as an inn for guest accommodations, especially guests of residents, to stay local and fully utilize the historic charm of the Woodmere Clubhouse building.

V. BASELINE INVENTORY OF CONDITIONS

This section of the Vision Plan presents the background information which informed the development of the Plan's recommendations, as embodied in the Vision, Goals and Objectives, and Conceptual Land Use Plan. An assessment of each topic resulted in the identification of issues and opportunities.

A. DEMOGRAPHIC TRENDS

1. Populations Characteristics

The characteristics of Woodsburgh's existing and anticipated population have been evaluated in order to plan for the future needs of the community, e.g. demand for community facilities and services.

Population

Based on 2017 projections from the US Census Bureau, the community has an estimated year-round population of approximately 793 residents. **Table 1** presents historic and current population estimates for the Village of Woodsburgh, Town of Hempstead, and Nassau County from 1940 to 2010 based on the United States Census data. The population in Village of Woodsburgh grew between 1940 and 1960, then fluctuated between 1960 and 1980. Since 1990, the Village has lost population from approximately 1,190 residents in 1990 to an estimated 778 in 2010.

The Town of Hempstead and Nassau County have witnessed increasing populations since 1940. The Town of Hempstead grew from approximately 259,318 residents in 1940 to 759,757 residents in 2010 while the population in Nassau County increased from 406,748 residents in 1940 to 1,339,532 residents in 2010. As the total number of housing units has not decreased significantly, the change in the Village's population is likely a reflection of a trend to smaller household sizes, and a population that is aging in place, with empty nester families inhabiting the Village.

Table 1 – Population Trends

	1970	1980	1990	2000	2010	Change (2000-2010)/ Percent Change
Village of Woodsburgh	817	847	1,190	831	778	53/-6.4%
Town of Hempstead	801,592	738,517	725,639	755,924	759,757	3,833/+0.5%
Nassau County	1,428,080	1,321,582	1,287,348	1,334,544	1,339,532	24,934/+0.4%
Source: U.S. Decennial Census						

Table 2 presents the general characteristics in of the Village of Woodsburgh, Town of Hempstead, and Nassau County populations.

Table 2 - General Population Characteristics: 2017			
	Village of Woodsburgh	**Town of Hempstead**	**Nassau County**
Total Population	793	772,296	1,363,069
Male	391	374,885	661,718
Female	402	397,411	701,351
Under 5 years	24	44,618	74,315
18+ years	583	600,477	1,064,565
65+ years	179	120,252	228,558
Median Age (years)	45.1	40.1	41.5
Average Household Size[1]	2.91	3.03	2.94
Average Family Size[1]	3.38	3.45	3.38
Persons 25 years+	552	526,432	942,504
HS Graduate or higher	98.4%	89.6%	91%
Bachelors or higher	75.2%	39.4%	44.4%
Median HH income	$185,625	$102,002	$105,744
Median Family income	$206,250	$116,908	$123,898
Per capita income	$84,951	$41,052	$46,839
Source: 2017 ACS 5-Year Estimates: Demographic and Housing Estimates, Selected Economic Characteristics, Education Attainment [1]Based the 2010 Census General Population and Housing Characteristics			

According to 2017 Census estimates, the population of the Village, the Town and Nassau County included more females than males. The segment of the population under 5 years old is lower for the Village (about 5 percent), compared to the Town and County. As a percentage of the population, the Village's senior segment – ages 65 and older – was higher in the Village (about 25 percent) than the same segment in the Town and County.

The median age of a resident in Woodsburgh is higher than the median age for both Hempstead and Nassau County. Village-wide, the median age was 45.1 years, while the County median age was 41.5 years; the Town has a median age of 40.1 years. Average household size of owner-occupied units was the largest in the Town with an average of 3.22 persons, followed by Nassau County with an average size of 3.11 persons. However, the Village had the largest average household size of renter-occupied units with an average 3.71 persons, followed by the Town with an average of 2.79 persons.

According to the 2010 Census General Population and Housing Characteristics, the Village family size (two or more people related by birth, marriage or adoption in the same housing unit) was equal to the Nassau County's family size of 3.38 persons.

Table 2 also provides educational attainment data for the population that was 25 years and older in 2017 according to the American Community Survey 5-Year Estimates. The percentage of the population with a high school degree in the Village exceeded that of the Town and County. Additionally, the Village had the highest percentage with a bachelor's degree or higher at 75.2 percent.

The values for median household income, median family income, and per capita income were significantly higher in the Village than in the County and Town; the Town had the lowest median household income, median family income, and per capita income. Median household income was $185,625 for the Village compared to a Town median household income of $102,002 and a Countywide household income of $105,744. The median family incomes for the Village, Town, and County were $206,250, $116,908, and $123,898, respectively. Per capita income was more than $43,000 higher in the Village at $84,951 than the Town ($41,052) and the County ($46,839).

Households

There are approximately 300 total housing units in the Village, most of which are single-family residences. Of these housing units, approximately 273 units are occupied and 27 units[6] are vacant. Of all occupied housing units, 259 units are owner occupied and 14 are rental units). While the majority of the housing units in the Village are single-family residences, there are two multi-family developments, the Mayfair apartments, which contains 36 units and are located at 819 Broadway, and the Crestwood Co-operative Apartments, which contains 45 units and are located at 1 Meadow Drive.

Most households in the Village, Town, and County are family households (see **Table 3**) according to the 2017 Census data. Out of the 273 occupied housing units in the Village, 77.7 percent are family households, while the remaining households are either non-family households (22.3%) or people living alone (22.3%). The percentages of family households are generally the same for the Village, Town and County, while the percent of non-family households is slightly higher in the County. The Village contains the highest percentage of persons living alone compared to the Town and the County.

Table 3 - Population by Household Characteristics: 2017

	Village of Woodsburgh	Town of Hempstead	Nassau County
Total Housing Units	300	255,815	471,031
Occupied Housing Units	273	242,809	444,136
Family Households	77.7%	77.7%	76.6%
Non-Family Households	22.3%	22.3%	23.4%
Living Alone	22.3%	19%	20.2%
Source: 2017 ACS 5-Year Estimates Occupancy Characteristics			

Employment

Table 4 presents statistics on the industry occupation of workers in the Village, Town, and County according to the 2017 Census Business Summary.

In the Village of Woodsburgh, the majority of workers were employed in the educational, health and social services industry (43.3%) and the finance, insurance, real estate and rental and leasing industry (15.4%). Other industries with a significant percentage of workers in the Village include the professional, scientific, management, and administrative services industry (12.1%) and the retail trade industry (8.7%).

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[6] According to the United States Census Bureau's glossary, vacant housing units are considered "vacant if no one is living in it at the time of enumeration, unless its occupants are only temporarily absent. Units temporarily occupied at the time of enumeration entirely by people who have a usual residence elsewhere are also classified as vacant".
See https://factfinder.census.gov/help/en/index.htm#glossary.htm

The majority of workers in the Town were employed in the educational, health and social services industry (29.4%); an additional 12 percent were employed in the professional, scientific, management, and administrative services.

Countywide, the majority of workers were similarly employed in the educational, health, and social services industry (28.6%). Approximately 12.9 percent of Nassau County employees worked in the professional, scientific, management, and administrative services.

Across all jurisdictions, few workers were employed in the agriculture, forestry, fishing and hunting and mining industries, as well as the wholesale trade industry.

Table 4 - Industry of Workers, Persons Aged 16 years and Older: 2017

	Village of Woodsburgh	Town of Hempstead	Nassau County
Civilian Employed Population 16 Years Old and Over:	390	387,919	682,063
Agriculture, forestry, fishing and hunting, mining	0 (0%)	399 (0.1%)	836 (0.1%)
Construction	9 (2.3%)	22,914 (5.9%)	38,198 (5.6%)
Manufacturing	26 (6.7%)	16,401 (4.2%)	30,903 (4.5%)
Wholesale Trade	7 (1.8%)	11,972 (3.1%)	22,398 (3.3%)
Retail Trade	34 (8.7%)	39,913 (10.3%)	69,051 (10.1%)
Transportation and warehousing, and utilities	2 (0.5%)	22,324 (5.8%)	35,443 (5.2%)
Information	4 (1%)	10,807 (5.6%)	20,311 (3%)
Finance, insurance, real estate and rental and leasing	60 (15.4%)	34,906 (9%)	69,478 (10.2%)
Professional, scientific, management, and administrative services	47 (12.1%)	46,419 (12%)	88,186 (12.9%)
Educational, health, and social services	169 (43.3%)	114,148 (29.4%)	194,972 (28.6%)
Arts, entertainment, recreation, accommodation, and food services	18 (4.6%)	28,866 (7.4%)	48,912 (7.2%)
Other services except public administration	11 (2.8%)	18,819 (4.9%)	30,688 (4.5%)
Public Administration	3 (0.8%)	20,031 (5.2%)	32,687 (4.8%)
Source: 2017 ACS 5-Year Estimates Selected Economic Characteristics			

Table 5 presents statistics regarding employment of County, Town and Village residents by major occupational category. The most common occupational category was management, business, science, and arts for the Village (65.6%), Town (41.5%), and County 44.7%). Other large occupational categories in Woodsburgh are

sales and office occupations (27.7%). Within the Town and County, sales and office occupations and service occupations employed a large percentage of workers.

Table 5 - Occupation of Workers, Persons Aged 16 years and Older: 2017			
	Village of Woodsburgh	**Town of Hempstead**	**Nassau County**
Civilian Employed Population 16 Years Old and Over:	390	387,919	682,063
Management, business, science, and arts occupations	256 (65.6%)	160,954 (41.5%)	304,878 (44.7%)
Service occupations	12 (3.1%)	70,165 (18.1%)	110,883 (16.3%)
Sales and office occupations	108 (27.7%)	97,689 (25.2%)	172,612 (25.3%)
Natural resources, construction, and maintenance	2 (0.5%)	28,073 (7.2%)	44,868 (6.6%)
Production, transportation, and material moving workers	12 (3.1%)	31,038 (8%)	48,822 (7.2%)
Source: 2017 ACS 5-Year Estimates Selected Economic Characteristics			

2. Housing Characteristics

This Vision Plan considers the existing housing stock in the Village of Woodsburgh, the anticipated housing stock, and anticipated housing needs for the future.

Community members were asked what type of residential development they would most support in the Village. According to the survey responses, community members indicated that they most support detached single-family residences (83%), followed by townhouses (10%). Two-family residences (3%) and multi-family residents (0.9%) were not favorable.

Housing Unit by Units in Structure

In 2017, the Village, Town, and County housing stock consisted primarily of single-family detached dwellings (see **Table 6**). Within Woodsburgh, 71.3 percent of housing units were single-family detached units, 27.3 percent consisted of 20 or more units and a total of 1.4 percent consisted of both 10 to 19 units and mobile homes (0.7 percent each). Within the Town and County, single family detached dwellings also represented a significantly high percentage of the housing stock (77.5% for the Town and 76.1% for the County). The second largest housing stock in both the Town and the County were buildings with 20 or more units (8.3% for the Town and 8.4% for the County).

Table 6 - Housing Units by Units in Structure: 2017						
	Village of Woodsburgh		Town of Hempstead		Nassau County	
	#	%	#	%	#	%
Total Housing Units	300	-	255,815	-	471,031	-
1-unit, detached	214	71.3%	198,171	77.5%	358,592	76.1%
1-unit, attached	0	0%	5,102	2%	13,578	2.9%
2 units	0	0%	16,855	6.6%	31,526	6.7%
3 or 4 units	0	0%	5,182	2%	9,793	2.1%
5 to 9 units	0	0%	3,572	1.4%	6,960	1.5%
10 to 19 units	2	0.7%	5,286	2.1%	10,011	2.1%
20 or more units	82	27.3%	21,194	8.3%	39,596	8.4%
Mobile home	2	0.7%	406	0.2%	910	0.2%
Boat, RV, van, etc.	0	0%	47	0%	65	0%
Source: 2017 ACS 5-Year Estimates Selected Housing Characteristics						

Occupied Housing Units by Tenure

Table 7 provides data on occupied housing units by tenure. Approximately 95 percent of all occupied housing units in the Village were owner occupied, which is higher than the owner occupancy rates for the Town and County. The percent of renter occupied units were approximately 5 percent for Woodsburgh, 19.2 percent for Hempstead, and 19.4 percent for Nassau County.

Table 7 - Housing Units by Occupancy: 2017						
	Village of Woodsburgh		Town of Hempstead		Nassau County	
	#	%	#	%	#	%
Owner Occupied	259	94.9%	196,137	80.8%	357,982	80.6%
Renter Occupied	14	5.1%	46,672	19.2%	86,154	19.4%
Total Occupied Units	**273**	**-**	**242,809**	**-**	**444,136**	**-**
Source: 2017 ACS 5-Year Estimates Selected Housing Characteristics						

Tenure by Year Householder Moved into Unit

Table 8 indicates the year that a householder moved into a housing unit. The most common year a householder moved into the Village was between 2000 and 2009, and between 2010 and 2014. Similarly, the most common years a householder moved into the Town and County was between 2000 to 2009.

Table 8 - Year Householder Moved into Unit by Tenure: 2017			
	Village of Woodsburgh	**Town of Hempstead**	**Nassau County**
Total Occupied Housing Units	273	242,809	444,136
Moved in 2015 or later	6	12,157	23,236
Moved in 2010 to 2014	62	44,668	85,778
Moved in 2000 to 2009	80	73,174	129,516
Moved in 1990 to 1999	49	46,150	85,073
Moved in 1980 to 1989	51	27,988	49,546
Moved in 1979 or earlier	25	38,672	70,987
Source: 2017 ACS 5-Year Estimates Selected Housing Characteristics			

Bedroom Mix

Table 9 summarizes the bedroom mix for Woodsburgh, Hempstead, and Nassau County. The most common number of bedrooms is 5 or more bedrooms in the Village (40.7%), followed by four bedrooms (27.6%). Hempstead and Nassau County had more equal distributions of three and four-bedroom units. The Village had a lower percentage of units with no bedroom (0%) and one bedroom (7%) compared to the Town and County.

Table 9 - Bedroom Mix: 2017						
	Village of Woodsburgh		**Town of Hempstead**		**Nassau County**	
	#	**%**	**#**	**%**	**#**	**%**
Total Housing Units	300	-	255,815	-	471,031	-
No bedroom	0	0%	4,831	1.9%	9,145	1.9%
1 bedroom	21	7%	20,223	7.9%	40,755	8.7%
2 bedrooms	52	17.3%	37,925	14.8%	68,536	14.6%
3 bedrooms	23	7.7%	99,092	38.7%	175,694	37.3%
4 bedrooms	82	27.3%	70,649	27.6%	130,637	27.7%
5 or more bedrooms	122	40.7%	23,095	9%	46,264	9.8%
Source: 2017 ACS 5-Year Estimates Selected Housing Characteristics						

Table 10 presents average household size by housing tenure in 2017. In Woodsburgh, the household size for owner occupied housing units (2.86 persons) was smaller than the Town or County. However, the household size of a renter occupied dwelling was larger (3.71 persons) than the Town or County. In general, housing units in Woodsburgh are occupied by slightly large households. This may be a reflection of the housing stock also containing more 5 or more bedrooms units in Woodsburgh, than the Town and County which have higher percentages of three- and four-bedroom dwellings.

Table 10 - Average Household Size by Tenure: 2017			
	Village of Woodsburgh	Town of Hempstead	Nassau County
Owner Occupied	2.86	3.22	3.11
Renter Occupied	3.71	2.79	2.67
Source: 2017 ACS 5-Year Estimates Selected Housing Characteristics			

Median Year Structure Built

Within the Village, the median year that a dwelling was constructed was 1950 which is relatively similar to the housing stock in the Town and County. The age of the housing stock is also a reflection of the 1929 stock market crash, subsequent Depression and World War II.

Table 11 - Median Year Structure Built: 2016			
	Village of Woodsburgh	Town of Hempstead	Nassau County
Median Year Structure Built	1950	1953	1955
Source: 2012-2016 ACS Housing Summary prepared by Esri			

Median Housing Value and Rent

The 2017 median housing value of an owner-occupied dwelling in the Village of Woodsburgh was $932,700; in the Town the median value was $421,300, and in the County the median housing value was $460,700. The median housing value in the Village is significantly higher than that of the Town or County, which suggests that the Village is a highly desirable place to live.

The median rent of an occupied housing unit in Woodburgh was $2,286 per month, which is higher than the rent paid in Hempstead and in Nassau County. In Hempstead, median rent paid was $1,554 and in Nassau County the rent was $1,663.

Table 12 - Median Housing Value and Rent: 2017			
	Village of Woodsburgh	Town of Hempstead	Nassau County
Median Housing Value	$932,700	$421,300	$460,700
Median Rent	$2,286	$1,554	$1,663
Source: 2017 ACS 5-Year Selected Housing Characteristics			

3. Summary

The Village of Woodburgh's population has declined since 1990. The Village's average resident is older, and the average owner-occupied household sizes are lower than in the Town or County as a result of the population "aging in place". The Village has a higher proportion of owner-occupied housing stock than in

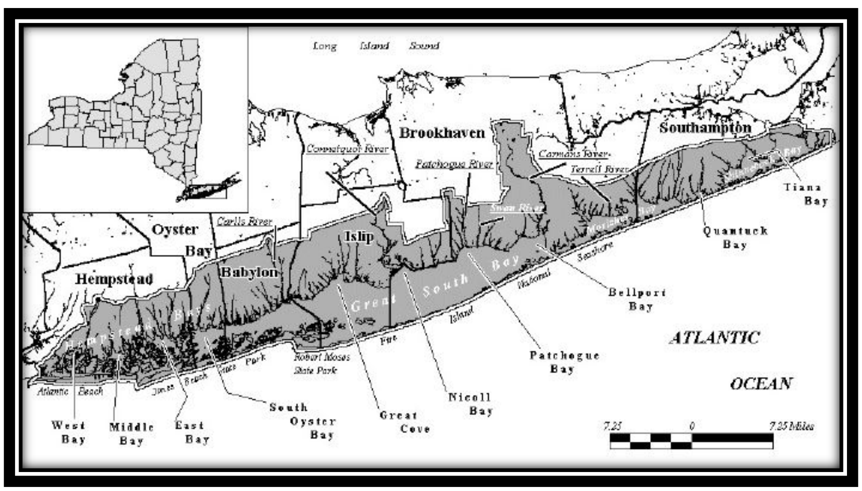
Hempstead or Nassau County. As the housing stock is older and consists of a higher percentage of four bedroom and five bedroom or more dwellings, its household size should be higher than the Town and County where there are more studio, one bedroom and two bedroom dwelling units. It is anticipated with housing turnover, the population will likely increase again. The Village has two multifamily complexes, (i.e., the Mayfair apartments and the Crestwood Co-operative Apartments), which provides a diverse housing stock for the Village.

B. NATURAL RESOURCES

The Village of Woodsburgh is situated on the south shore of western Long Island within proximity to the Borough of Queens, New York. The Village is developed on a part of the Atlantic Coastal Plain physiographic province and specifically located on the glacial outwash plain that was deposited with the retreat of the last ice age approximately 10,000 years ago. The Village shoreline adjoins Brosewere Bay, a part of West Hempstead Bay. The natural resources of the Village are largely complementary to the adjacent tidal waters and proximate undeveloped, marshy islands.

Given the Village's proximity to New York City, development needs are contingent on a growing population; however, development has the potential to impact the natural resources of the Village, and land use planning policies need to consider the Village's position in the landscape relative to these resources. The following narrative describes the environment not only within but surrounding the Village of Woodsburgh. This section describes state, county and regional plans which address these environmental resources and an inventory of the resources located in Woodsburgh.

1. Regional Planning



Inset from 2001 Long Island South Shore Estuary Reserve Comprehensive Management Plan

Long Island South Shore Estuary Reserve Comprehensive Management Plan

Long Island's South Shore Bays (Hempstead Bay, South Oyster Bay, Great South Bay, Moriches Bay and Shinnecock Bay) and associated upland areas, including towns and villages in both Nassau County and Suffolk County, are all part of the Long Island South Shore Estuary Reserve. The Village of Woodsburgh is one of several villages within the 173 square mile Long Island South Shore Estuary Reserve, which stretches from the western boundary of the Town of Hempstead to the middle of the Town of Southampton. The Long Island South Shore Estuary Reserve is characterized by tidal marshes, mud and sand flats, beds of underwater vegetation and extensive shallows that support environmentally sensitive natural resources. The South Shore Estuary Reserve is an anchor for the region's tourism, seafood and recreational industries.

The landscape of the Long Island South Shore Estuary Reserve is characterized by a series of salt marsh islands connected by channels and tidal creeks that form a unique coastal environment. This pattern of development is obvious in Woodsburgh, where the golf course properties incorporate these natural resources of the Reserve into their landscapes. There are numerous opportunities to enjoy the estuary such as public active and passive recreation areas, environmental education centers and natural habitat preserves.

Unfortunately, the Long Island South Shore Estuary Reserve has more impaired surface waters than any other region of New York State as a result of nitrogen loading. This is a result of human population growth and development in the Reserve's watershed since World War II. Impaired waterbodies have a negative


Photograph from New York State DOS, Office of Planning & Development website.

impact on estuary ecosystem health which then negatively effects South Shore Estuary Reserve's shellfish, finfish and recreation. In 1993, the Long Island South Shore Estuary Reserve Act was passed by the New York State Legislature and a South Shore Estuary Reserve Council created as a result. The Council is comprised of a group of representatives from South Shore towns and villages, the City of Long Beach, Nassau and Suffolk counties, and recreation, business, academic, environmental and citizen interests. The Act tasked the Council with the preparation of a Comprehensive Management Plan, which recommends implementation actions for State, federal and local governments, as well as non-profit organizations, businesses and academic institutions to:

- Improve and maintain water quality;
- Protect and restore living resources;
- Expand public use and enjoyment;
- Sustain and expand the estuary economy, and;
- Increase education, outreach, and stewardship.

Information on land and embayment uses, the estuarine economy, water quality, living resources and other aspects of the Reserve was collected and analyzed by the Department of State's Division of Coastal Resources using geographic information system (GIS) technology to serve as a basis for implementing actions provided in the Comprehensive Management Plan. This Plan notes that open space is critical to the health of the estuary and its coastal habitats as well as the coastal character of the south shore: "*All levels of government must work together in cooperation with private development interests to preserve open space in the Reserve, buffer sensitive habitats, improve water quality and retain the visual landscape of the estuary*".

Since 2001, the New York State Department of State, Office of Planning and Development has monitored several projects implemented through the Environmental Protection Open Space Account and the Local Waterfront Revitalization Programs to advance the Comprehensive Management Plan's implementation actions. These efforts include water quality monitoring, preparation of implementation status reports, restoration projects, seeding and reef development programs, and improvements and expansion of public access among other efforts.

Figure 3 presents tidal wetlands and significant coastal fish and wildlife habitats in the Village. In considering any plans for development within the Village, this map should be reviewed in establishing areas which represent better options for resource protection, areas which should be avoided and areas where additional investigations may be required. To a large extent, the highly valuable lands are conserved at this time as open space at the golf course properties. Implementation actions from the Comprehensive Management Plan are to be considered in any recommendations that propose creation of a contiguous, meaningful open space network, within which land development should "fit".

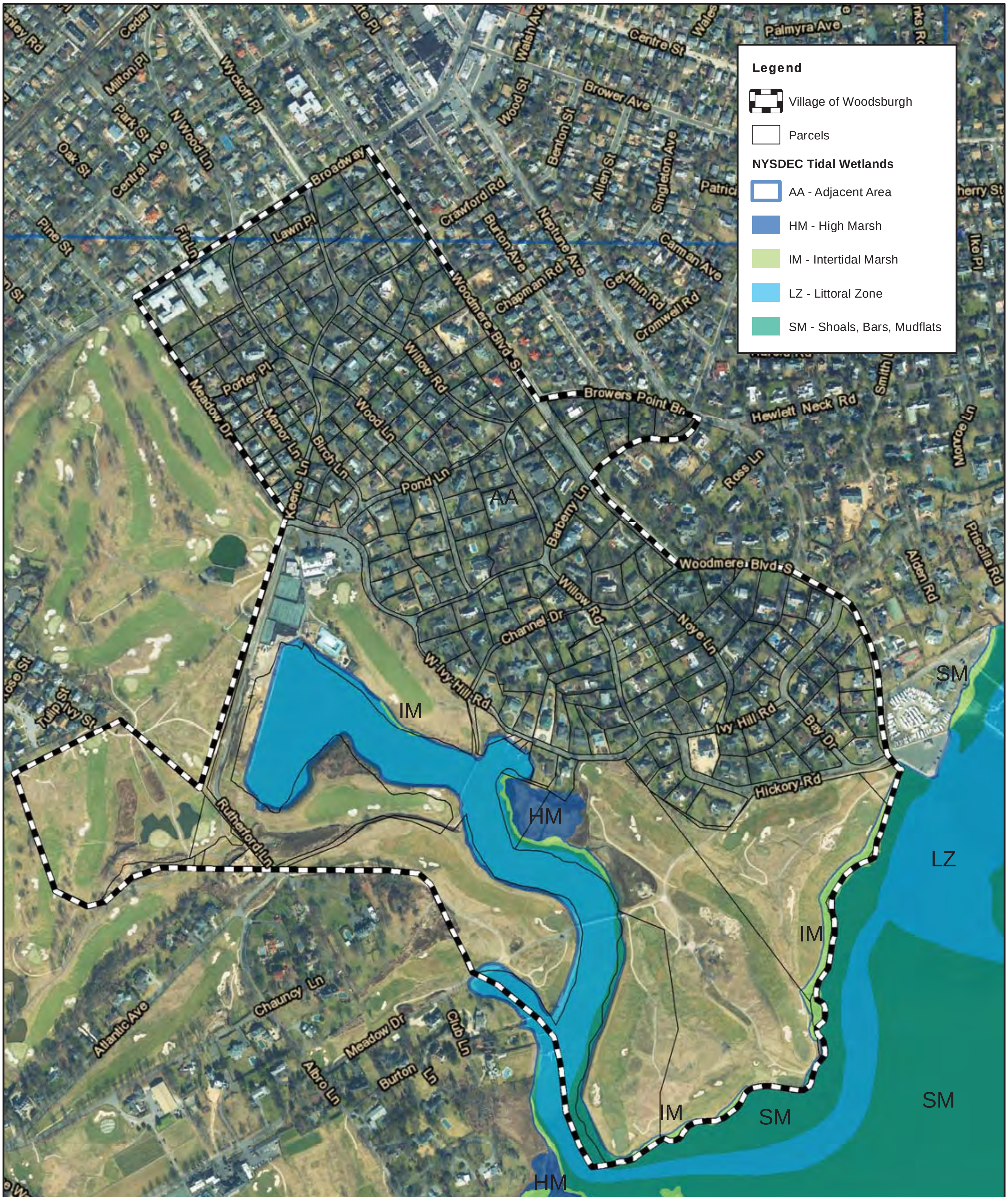


FIGURE 3
NYS DEC TIDAL WETLANDS

Source: Nassau County GIS, NYSDEC, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

N

Village of Woodsburgh Vision Plan

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The fundamental purpose of the New York State Open Space Plan is to urge increased protection of the state's significant natural, scenic, recreational, historic and cultural resources and secure the benefits that accrue from protection of these resources, including: economic benefits; increased property values for adjacent lands; tourism; water quality protection; wildlife habitat protection; and, enhancement of natural resource based industries. A summary of the Open Space Plan is found here: http://www.dec.ny.gov/docs/lands_forests_pdf/ospsummary.pdf. Protection of the South Shore Estuary Reserve is a high priority within the Open Space Plan. As noted in the Plan:

> *Acquisition of open space within the boundaries of the state - designated South Shore Estuary Reserve, a 326-square-mile area encompassing south shore bays and their watersheds, for coastal resiliency, mitigation of sea-level rise, water quality and habitat protection, public waterway access and preservation of historic, cultural and maritime resources. Several projects are in the 100-year flood plain and/or Potential Environmental Justice Area (PEJA) communities.*

As the entire Village is within the boundary of South Shore Estuary Reserve and thus, preservation of existing open space in Woodsburgh is considered a high priority.

New York Rising Five Towns Community Reconstruction Program

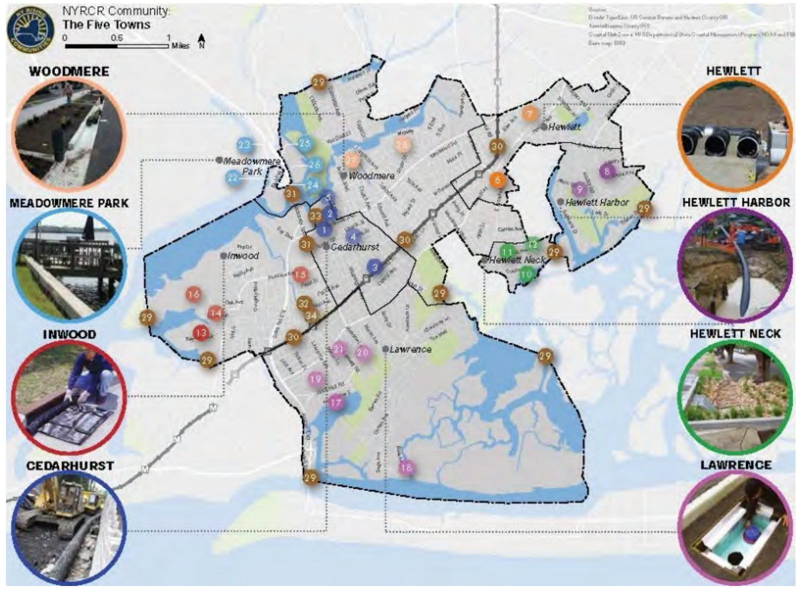
In response to extreme weather events in New York State since August 2011 and the need to rebuild impacted communities, Governor Andrew M. Cuomo developed an innovative, community-driven planning program known as the New York Rising Community Reconstruction (NYRCR) Program. This program was established to provide assistance to communities that were severely damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. The NYRCR Program allowed communities to develop reconstruction plans to build physically, socially and economically resilient and sustainable communities. Eligible communities receive funding from the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant –Disaster Recovery (CDBG-DR) program through the Governor's Office of Storm Recovery.

The Five Towns NYRCR Community Reconstruction Plan encompasses eight villages and hamlets including the Villages of Cedarhurst, Lawrence, Hewlett Harbor; and the hamlets of Hewlett, Inwood, Meadowmere Park and Woodmere within the Town of Hempstead. Although not specifically included in the Five Towns NYRCR Plan, the Village of Woodsburgh is a significant part of the Five Towns and was impacted by Superstorm Sandy in 2012. The Five Towns NYRCR Plan explains the following:

> *During Superstorm Sandy, the storm surge from the Atlantic Ocean traveled over the Far Rockaway peninsula and through the Jones Inlet, Rockaway Inlet, and Reynolds Channel into Jamaica Bay and Hempstead Bay. The surge affected the Five Towns Community with tidal flooding and widespread backups within the stormwater system. Documented storm surge varied from six feet to 11 feet in each of the Villages and Hamlets in the Five Towns, inundating low lying areas with tidal water and causing backups in the stormwater system. As a result, rainwater runoff caused overflows of the stormwater system and led to flooding even in areas that were beyond the extent of the storm surge. Stormwater flooding, which has occurred with greater frequency since Superstorm Sandy, has directly affected the quality of life throughout the community and property values have suffered.*

There are three reconstruction and resiliency strategies that guide the NYRCR Program for the Five Towns that should be considered for any potential development in Woodsburgh:

- **Strategy 1:** Increase the resilience to extreme weather in high risk coastal areas by addressing coastal protections and stormwater infrastructure.
- **Strategy 2:** Increase the emergency response capacity of facilities on high ground by building on the strong network of civic, health and social service organizations in the Five Towns.
- **Strategy 3:** Improve access to evacuation routes from high risk areas by creating a resilient corridor along Rockaway Turnpike and Nassau Expressway.



Although there are no proposed projects specific for Woodsburgh in the Five Towns NYRCR Plan, the Village of Woodsburgh will ultimately benefit from some funded Village projects and regional and shared projects outlined in the Program. These projects include: the South Shoreline Improvement Study which will identify potential solutions to restore shorelines; repairs to and elevation of the Dike at the Isle of Wight in the Village of Lawrence to protect adjacent residential neighborhoods from large storm surges; the Microgrid Feasibility Study and Action Plan which will identify opportunity areas adjacent to the LIRR corridor for microgrid and renewable energy installations to ensure reliable communication during emergencies; and the Hewlett Neck stormwater infrastructure upgrades that will increase stormwater system capacity immediately east of Woodsburgh. These projects will address various environmental concerns, public health concerns and will provide benefits to the Five Towns area, including the Village of Woodsburgh.

Five Towns Drainage Study

In December 2017, the Nassau County Department of Public Works prepared the Five Towns Drainage Study[7] to evaluate existing municipal stormwater drainage conditions and identify drainage improvements or flood mitigation projects. The Drainage Study builds upon the New York Rising Five Towns Community Reconstruction Plan and states:

> *"[t[he Villages of Woodsburgh and Hewlett Bay Park were not included in the original Five Towns CRP due to minimal damages as a result of Hurricane Sandy; however, they are included as part of this study for completeness in evaluating the region. Storm surges and stormwater impacts occur regardless of municipal boundaries".*

The Drainage Study divided the stormwater system drainage areas within the Village of Woodsburgh into two categories: the Broadway Drainage Area and the Keene Drainage Area. The Keene Drainage Area is an interconnected series of manholes and piping along Woods Lane, Keene Lane, Meadow Drive, Pond Lane and Ivy Hill Road, which connect to catch basins on Woodmere Boulevard, Willow Road and Meadow Drive, and discharge into a 36 inch outfall on Keene Lane/Railroad Avenue, near the Woodmere Club. The

[7] Nassau County Department of Public Works. *Five Towns Drainage Study*. December 22, 2017. Accessed October 2018; available at https://www.nassaucountyny.gov/DocumentCenter/View/21224.

Broadway Drainage Area consists of a series of catch basins, pipes and manholes along Broadway that continue south through the eastern portion of the Woodmere Club to Railroad Avenue and discharges via a 60 inch outfall adjacent to the 36 inch outfall pipe associated with the Keene Drainage Area (see images from the Drainage Study below).

Image of Keene Drainage Area from the Nassau County Drainage Study.

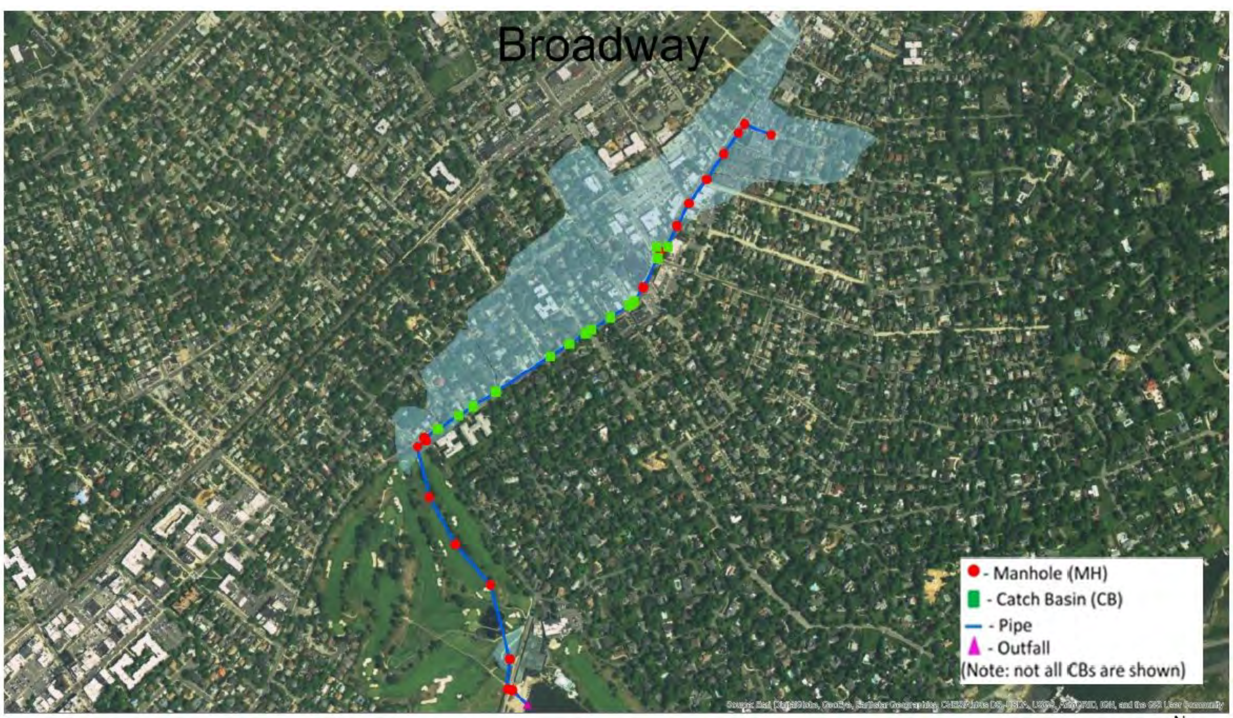


Image of Broadway Drainage Area from the Nassau County Drainage Study.

Appendix D "Community Assets" of the County's Drainage Study, notes:

> *"[f]looding can occur in the Village of Woodsburgh when stormwater from rainfall events combines with presence of tidal waters within the stormwater collection piping. The tidal waters reduce available capacity within the collection piping network and impede flow within the system until the local tidal waters recede allowing for the return of gravity flow. Key problem areas include Railroad Avenue, Ivy Hill Road and Broadway."*

These roadways are important areas that service the entire Village. The Woodsburgh Drainage Assessment in Appendix D of the Drainage Study also indicates that when high tide occurs in the Village, the existing outfalls become submerged and the Village's stormwater systems are overburdened. Tidal backflow valves on the outfalls become stuck in a slightly opened position and, therefore, do not operate properly. This allows for tidal waters to intrude into the collection piping system during the tidal cycle. Flooding is then exacerbated by rainfall events. Roadway drainage issues were confirmed during a field inspection by an NPV representative on May 15, 2018 in the early afternoon following a rain event and reiterated by members of the public in the online survey and during the Public Open House.

A number of recommendations for drainage improvements are presented in the Drainage Study to limit

recurring flooding within the Village. These recommendations include the following:

- **Plan 1:** Backflow Prevention (60 inch Outfall) (≤10-year rainfall) - The installation of a new backflow prevention device at the 60 inch outfall on Railroad Avenue (Broadway Drainage Area). A Continuous Deflection Separation (CDS) water treatment device is to be installed upstream.
- **Plan 2:** Pipe Improvements (≤10-year rainfall) - Pipe size improvements along Broadway, outside of the Village boundaries (along Broadway between Johnson Place and Brower Avenue), to increase the pipe diameters at capacity and/or surcharged during normal rain events, as well as provide proper slopes for adequate drainage. Backflow prevention and CDS installation are included.
- **Plan 3:** Backflow Prevention (36" Outfall) (≤10-year rainfall) - The installation of a new backflow prevention device at the 36 inch outfall at Railroad Avenue (Keene Drainage Area). A CDS treatment device is to be installed upstream.
- **Plan 4:** Pipe Improvements (≤10-year rainfall) - Pipe size improvements for the 36 inch outfall to increase the pipe diameters at capacity and/or surcharged during normal rain events, as well as provide proper slopes for adequate drainage. Backflow prevention and CDS installation are included.

Appendix D of the Drainage Study notes that there would be several benefits associated with implementing these recommendations. These benefits include reduction of damages to drainage systems, reduction in maintenance costs over time, less frequent flooding as a result of tidal fluctuations and rainfall events, reduction of property damages, and reduction of public emergency expenditures associated with response of emergency personal and equipment. An environmental benefit would include improvement of water quality of system effluent to the bay, which would result in benefits from improved plant and animal habitats.

As the Village of Woodsburgh was not included in the Five Towns NYRCR Plan, the Drainage Study notes that the funding sources need to be identified for proposed pipe improvements and backflow prevents.

Nassau County Back Bays Coastal Storm Risk Management Feasibility Study (April 2019 Status Report)

The April 2019 Status Report was prepared to update residents, stakeholders, local governmental officials, Federal and non-Federal agencies and other interested parties of the Nassau County Back Bays (NCBB) Coastal Storm Risk Management (CSRM) Study and to present an anticipated timeframe of remaining study milestones. The purpose of the final CSRM Study is to "determine the feasibility of a project to reduce the risk of coastal storm damage in the back bays of Nassau County, while contributing to the resilience of communities, important infrastructure, and the natural environment". Following the CSRM Study, a a final coastal storm risk management plan will be prepared to address flood risks in the defined study area. Communities in the study area include "villages and unincorporated municipalities in the towns of Hempstead and Oyster Bay that border Hewlett Bay, Middle Bay, Jones Bay, South Oyster Bay, and connected creeks, channels, and minor water bodies, as well as the City of Long Beach". The NCBB Status Report provides an overview of the United States Army Corps of Engineers (USACOE) planning considerations, work completed to date and next steps.

The planning considerations section of the Status Report lists problems, opportunities and constraints that were identified during the public coordination process and during an examination of existing conditions and future conditions without the project. These are:

<u>Problems:</u>

- *Frequent flooding from high tides, spring tides, sunny day flooding, and coastal storms*
- *High risk of coastal storm flooding and threat to life safety*
- *Ecosystem degradation in the back bays*
- *Potential future sea level change*

<u>Opportunities:</u>

- *Manage coastal storm flood risk*
- *Better communicate coastal storm risk to communities*
- *Improve recreation and restore natural systems in ways that may provide CSRM benefits*
- *Contribute to community rebuilding and resilience*

<u>Constraints:</u>

- *Avoid impact to Federal navigation channels*
- *Avoid impact to constructed and planned resilience projects*
- *Avoid induced coastal flooding in adjacent communities, and flooding from rainfall or overwhelming of existing interior drainage systems*
- *Avoid impacts to critical infrastructure*
- *Minimize or avoid impacts to the environment and public access*
- *Avoid Coastal Barrier Resources Act of 1982 impacts*

Planning objectives:

- *Reducing the risk of coastal storm damage to communities, public infrastructure, important societal resources, and the environment in southern Nassau County through 2075.*
- *Contribute to the long-term sustainability and resilience of coastal communities in southern Nassau County through 2075*
- *Contribute to the long-term sustainability and resilience of the back bay environment in southern Nassau County through 2075*

The Status Report provides a number of measures that are being considered to achieve these planning objectives and reduce flood risks, as outlined below:

1. Structural Measures:
    a. Inlet storm surge barriers – a series of movable gates that remain open during normal conditions to allow navigation and tidal flow but are closed during storm events.
    b. Cross-bay barriers – constructed across the interior of a bay. Could be constructed adjacent to roads, bridges and causeways with gates across navigable channels and additional auxiliary flow gates to allow regular tidal flow but are closed during storm events.
    c. Levees – earth embankments with an impervious core constructed along a waterfront.
    d. Raised Roads and Rails – raise existing roads and rail networks to function as levees.
    e. Permanent Floodwalls – Steel or concrete vertical structures.
    f. Deployable Floodwalls – Vertical structures that can be quickly installed during a storm event.
    g. Crown Walls – small reinforced concrete walls (approximately 1 to 3 feet high) constructed on top of an existing or new vertical structure (i.e., bulkheads, seawalls, curb or gravity wall).
    h. Beach Restoration – beach nourishment or beachfill, which includes the replacement of sand in areas where sand has eroded or to increase the width and/or height of an existing beach.
    i. Bulkheads – vertical structures with the primary purpose of retaining land that adjoins a water body.
    j. Seawalls – massive structures constructed along a shoreline to interception of waves, prevent upland erosion, and reduce wave-induced overtopping and flooding.
    k. Revetments – sloped structures that are typically constructed from stone, concrete or asphalt to armor sloping natural shoreline profiles but can be retrofitted with an impermeable wall at the top to increase the elevation of a structure by 1 to 3 feet.
    l. Stormwater Drainage Improvements – convey water away from developed areas during heavy rainfall or high tidal waters. Can install conveyance systems (with pump stations, culverts, drains and inlets) to remove and send water to large waterbodies. Additional improvements can include retrofitting existing culverts and outfalls with tide valves.

2. Nonstructural measures:
    a. Building retrofit:
        i. *Elevation – raising the existing structure on fill or foundation elements such as solid perimeter walls, piers, posts, columns, or pilings.*
        ii. *Dry flood proofing – strengthening of existing foundations, floors, and walls to withstand flood forces while making the structure watertight.*
        iii. *Wet flood proofing – making utilities, structural components, and contents flood- and water resistant during periods of flooding within the structure.*
        iv. *Ringwall – construction of a floodwall around an individual structure.*
        v. *Replace building – demolition of the structure and subsequent building of an equivalent structure within the same property boundary to the design elevation.*
    b. Acquisition/buyouts
    c. Floodproofing
    d. Relocating utilities and critical infrastructure
    e. Design/redesign and location of services and utilities

f. Retreat
g. Increased storage
h. Resilience standards
i. Emergency response systems
j. Stormwater management
k. Building codes/zoning
l. Hazard mitigation plans
m. Coastal zone management
n. Early warning systems

3. Natural and Nature Based Features (NNBFs):
   a. Living Shoreline - *essentially tidal wetlands constructed along a shoreline to reduce coastal erosion. Living shorelines maintain dynamic shoreline processes, and provide habitat for organisms such as fish, crabs, and turtles. A common component of a living shoreline is constructing a rock structure (breakwater/sill) offshore and parallel to the shoreline to serve as protection from wave energy that would impact the wetland area and cause erosion and damage or removal of the tidal plants. Alternatively, such protective structures have also been built with coir logs or "oyster castles".*
   b. Reefs – *artificial reviews to reestablish and enhance reef communities, while also providing shoreline erosion protection through the attenuation of wave energy.*
   c. Wetland Restoration – *functionally restored wetlands act in the same manner as natural wetlands, though design features may be included to enhance risk management or account for adaptive capacity considering future conditions.*
   d. Submerged Aquatic Vegetation (SAV) Restoration – *grasses that grow to the surface of shallow water, but do not emerge from the water surface. SAV performs many important functions, including wave attenuation, buffering shorelines by stabilizing sediments with plant roots, water quality improvement, primary production, food web support for secondary consumers, and provision of critical nursery and refuge habitat for fisheries species.*

As the Village of Woodsburgh is included in the Nassau County Back Bays study area, these problems, opportunities, constraints and recommendations have been considered and incorporated into this Vision Plan.

New York State Climate Smart Communities Program

In 2009, the Climate Smart Communities (CSC) program was created as an interagency initiative of New York State that "helps local governments take action to reduce greenhouse gas emissions and adapt to a changing climate".[8] This voluntary program offers various instruments to achieve such an initiative including technical assistance, grants and rebates for electric vehicles. The CSC is jointly sponsored by the NYSDEC (main administrator), New York State Energy Research and Development Authority (NYSERDA), Department of Public Service, NYS DOS, New York State Department of Transportation (NYSDOT) and the Department of Health.

There are 12 categories containing numerous actions in order to achieve of the designated levels of certification (bronze, silver and gold). Communities earn points toward certification for each action they complete, while also completing several mandatory and priority actions at each level of certification. Priority actions are largely focused on relatively low-cost assessments and policies that build baseline knowledge and plan for future action or establish a local government as an emerging leader. In addition to mandatory actions and priority actions, each certification level must earn a specified number of action points, complete at least one action under the specified number of pledge elements and achieve a specific number of

[8] https://climatesmart.ny.gov/

performance points. There are over 100 climate mitigation and adaption actions as of 2018. These action items are as follows:

1. Build a climate-smart community
2. Inventory emissions, set goals, and plan for climate action
3. Decrease energy use
4. Shift to clean, renewable energy
5. Use climate-smart materials management
6. Implement climate-smart land use
7. Enhance community resilience to climate change
8. Support a green innovative economy
9. Inform and inspire the public
10. Engage in an evolving process of climate action
11. Innovation
12. Performance

A complete Climate Smart Communities Certification Action Checklist with each certification action is available at: https://climatesmart.ny.gov/fileadmin/csc/documents/CSCC-ActionChecklist-6-24-2019.pdf. There are several actions that are eligible for competitive funding through the NYS DEC Climate Smart Communities Grant Program. This grant program provides a 50/50 match for municipalities to perform inventories, assessments and planning projects that advance their ability to address climate change locally. This program supports climate change adaption (e.g., cooling centers, flood plain restoration, emergency preparedness, etc.) and mitigation projects that reduce of greenhouses gases outside of the power sector (transportation, refrigerants, food waste, etc.).

The first step for becoming a CSC is to pass a municipal resolution to join the program and become a Registered Climate Smart Community. After becoming a Registered Climate Smart Community, municipalities can begin reviewing and selecting actions to be implemented at their own pace since there is no time limit between adopting the pledge and committing to the certification process. The certification levels are described are described as:

- Bronze: The initial level of certification - for local governments that have acted their commitment to climate action and taken steps to implement climate-smart policies and projects.
- Silver: The second level of certification - for local governments that have implemented a range of foundational climate actions and made concrete progress toward goals.
- Gold: The gold level is currently under development as part of a new initiative to align the highest level of CSC certification with New York State greenhouse gas reduction targets and climate adaptation goals.

As of April 26, 2009, the Village of Woodsburgh is a Registered Climate Smart Community and has pledged to pursue the CSC program actions that will reduce greenhouse gas emissions and adapt to climate change. Several recommendations have been presented in this Vision Plan to advance the efforts for Woodsburgh to become a Climate Smart Community. These recommendations include:

- Explore the installation of a living shoreline which could improve significantly the health of native flora and fauna.
- Explore the installation of submerged aquatic vegetation along the Village's shoreline to reduce wave action, provide habitats for NYS DOS-designated significant coastal fish and wildlife and improve water quality in West Hempstead Bay.

- Restore wetlands along the shoreline that have been impacted by previous development and ensure that any new development does not degrade the quality of same, as wetlands contribute to coastal flood risk management, wave attenuation and sediment stabilization/accumulation.
- Explore the feasibility of collaborating with Cornell Cooperative Extension Marine Program and the Long Island Shellfish Restoration Project to establish a sanctuary site along the Village's shoreline as a coastal resiliency measure.
- Introduce green infrastructure stormwater controls which serve the dual purpose of greening the Village and controlling stormwater runoff.
- Require that new development install rain gardens where practicable and use slow-release organic fertilizer. Additionally, install bioswales throughout any proposed developments.
- Examine existing bulkheads in the Village and determine if improvements are required to reduce flooding impacts.
- Explore the feasibility of installing crown walls on existing or new vertical structures (e.g., bulkheads and seawalls) in the Village.
- Explore the possibility of installing seawalls or floodwalls to reduce the risk of flooding during storm events.
- For any new development, Low Impact Development (LID) principles should be implemented to provide for enhanced stormwater management.
- Limit the amount of new impervious surfaces within the Village by requiring permeable pavers to be utilized in strategic areas of new construction.

The Village should eventually pursue additional CSC program actions beyond what is recommended in this Vision Plan.

2. <u>Geology, Soils and Topography</u>

A community's geology, soils, and topography present opportunities and constraints to development patterns. Soils can be deep and loamy and suitable for agricultural use, while wet soils can be indicative of wetlands which are unsuitable for development and are potentially regulated by outside state and federal agencies. The following describes geologic, topographic and soil conditions in the Village of Woodsburgh.

Geology

Geology can be defined as the science that deals with the earth's physical structure and substance, its history, and the processes that act on it. Bedrock is the parent material for the unconsolidated surficial material and soils laying atop it. The underlying bedrock within the Village is approximately 1,500 feet below grade surface. As Woodsburgh is developed on top of a glacially deposited outwash plain, only unconsolidated materials would be encountered in developable areas.

Soils

Soil can be defined as "a natural body comprised of solids (minerals and organic matter), liquid, and gases that occurs on the land surface, occupying space, and characterized by one or both of the following: horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter or the ability to support rooted plants in a natural environment". Soil characteristics have a strong relationship to land use suitability. Every land use, whether it involves the construction of roads or buildings, or production of agriculture crops or forestry, affects and is affected by soil characteristics. The ability of the land to accommodate a particular use and infrastructure that will serve it is influenced by the suitability of soils to accommodate these activities. The United States Department of Agriculture, Natural Resources Conservation Service (NRCS), manages a web-based system called "Web Soil Mapper" where soil types for a specific area can be viewed. The Soil Mapper provides detailed characteristics and limitations of each soil type for different categories such as road and building construction, agricultural and silvicultural use. The Survey ranks the soils from slight to severe; severe soil limitations are not insurmountable but reflect the need for engineered solutions to overcome the limitations. Soil types reflect an inherent level of suitability or unsuitability for particular uses. Hydric soils are frequently flooded or waterlogged soils and are frequently an indicator of the presence of wetlands. None of the soils within the Village of Woosdburgh are considered hydric.

Figure 4 illustrates the soil mapping units found within the Village, which is useful for general planning purposes. However, the soil survey should not be used in lieu of on site soil testing during the review of site-specific development plans. Generally, there are three soil types within the Village of Woodsburgh which are listed in **Table 13**. The soils present are indicative of unconsolidated glacial materials and are predominantly composed of sand and loam. The portion of the Village developed with residential use are within the Urban Land-Riverhead complex soil type (UrA) area, while most of the golf course consists of the Udipsamments, wet substratum (Ue) soil type. These soil types are common across Long Island and only present development restrictions that are typical of Long Island (e.g., limitations due to the absence of bedrock). As is typical of Long Island soils, the Ue soil type present on the golf course has a high sand content and has implications for the ability to install roadways.

Table 13 - Soil Types Found in Woodsburgh

Map Symbol	Soil Name	Acres	Percent
RdB	Riverhead sandy loam, 3 to 8 percent slopes	1.57	0.6
Ue	Udipsamments, wet substratum	142.83	59.2
UrA	Urban land-Riverhead complex, 0 to 3 percent slopes	96.14	39.9
W	Water	0.81	0.3
Total		**241.35**	**100.0**

Source: Nassau County Soil Survey, USDA. Differences in total acres is due to rounding and does not include tidal wetlands in total area.

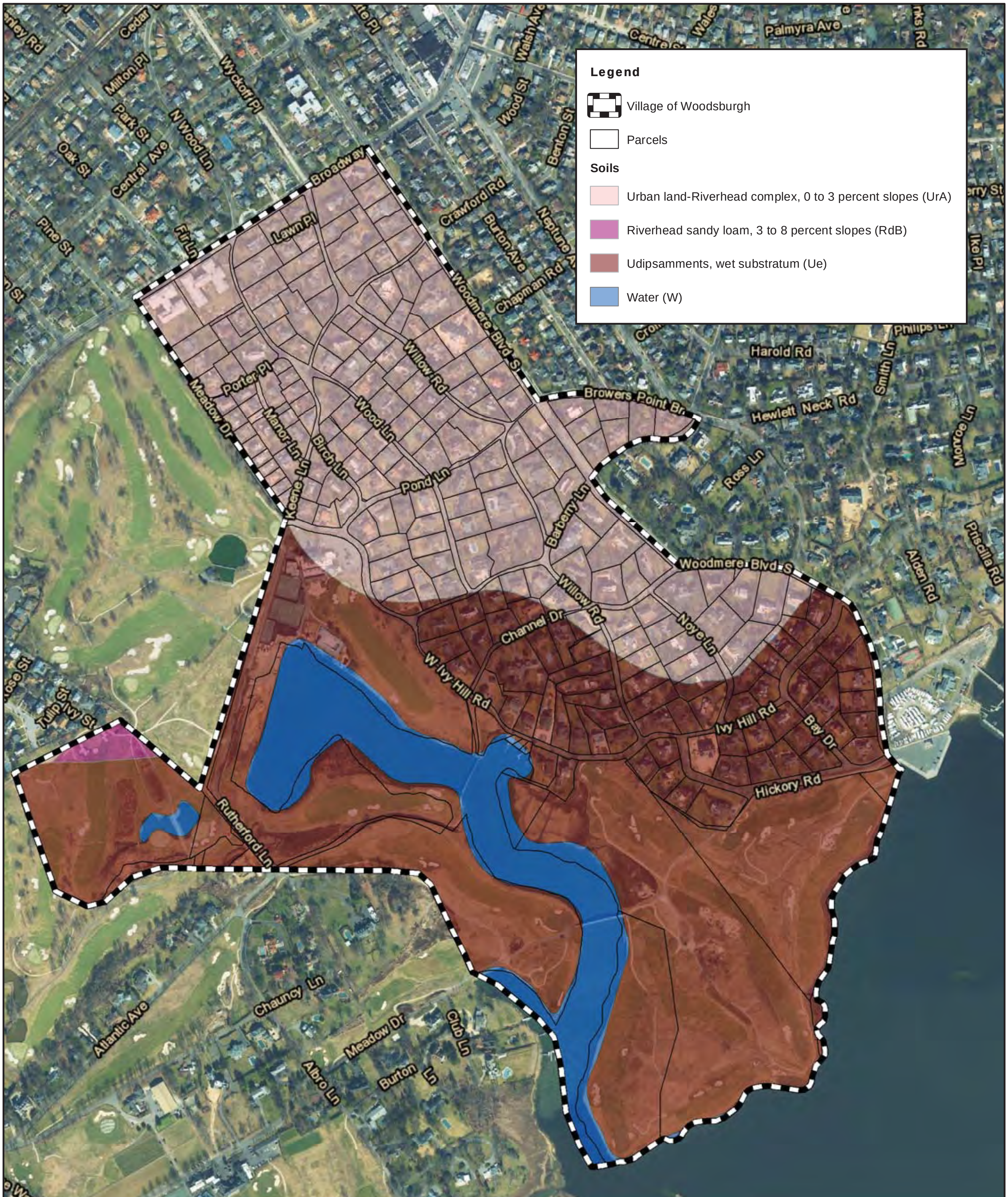


FIGURE 4
SOILS MAP

Source: NRCS Soil GIS Layers, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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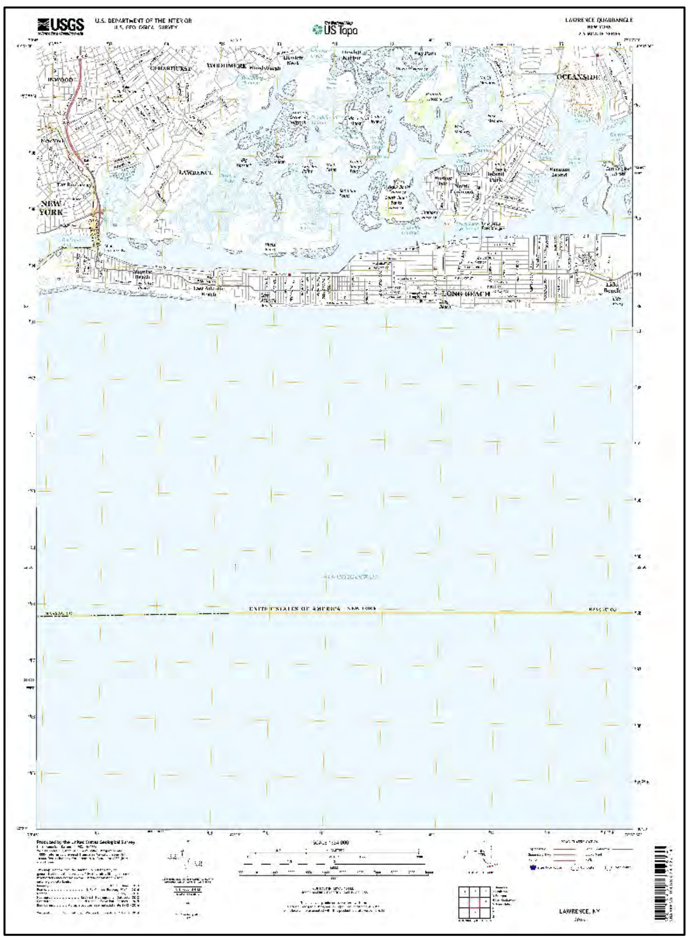
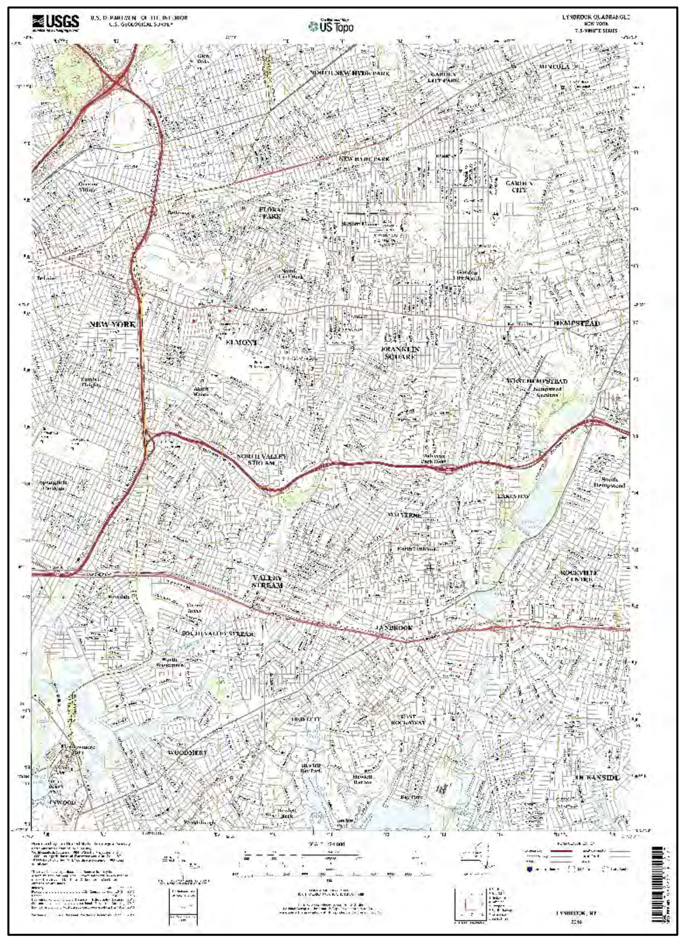
Village of Woodsburgh Vision Plan

Topography

Topography is a measure of the grade elevations found throughout an area and typically portryated with contour lines illustrating equal elevations. Topographic elevations are measured in relation to mean sea level (msl) and are shown in **Figure 5.** Due to its coastal location and geography as a coastal outwash plain, the Village generally has a low elevation profile. The highest point in the Village is approximately 21 feet above msl - this point is located at the northwestern border of the Village. The lowest points within Woodsburgh are located at Woodmere Channel with elevations at sea level. The golf course portions of the Village reach a top elevation of approximately 11 feet above msl.

Similar to locations along the south shore of Long Island, the topography within the Village of Woodsburgh is relatively flat. The area within the Village has been artificially flattened as a result of construction of residences and a golf course over time since the late 1800s. Low points exist within sand-traps and other features on the golf course property. Elevations quickly decrease in areas proximate to the surface waters of West Hempstead Bay.





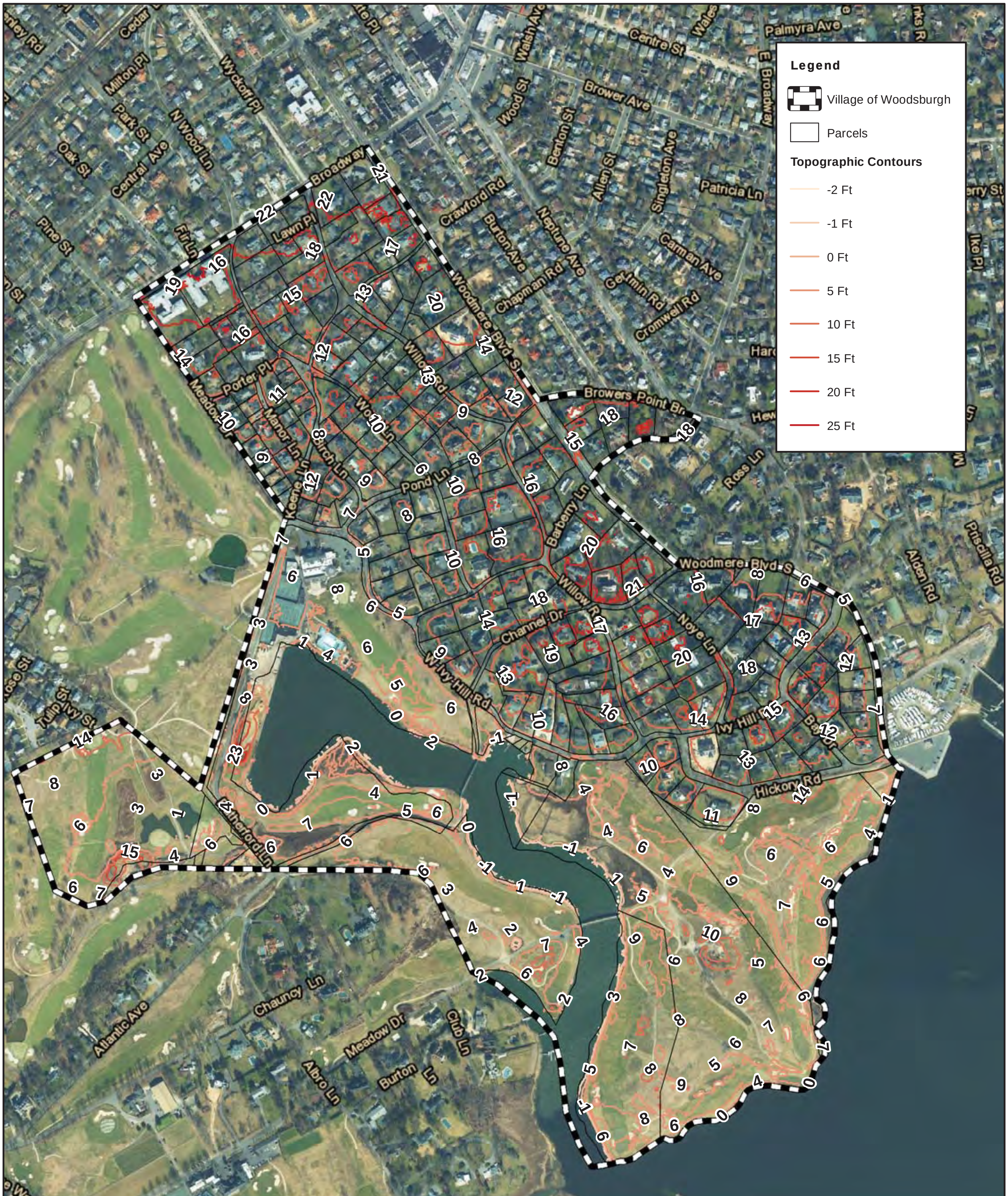


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FIGURE 5
TOPOGRAPHY

Source: NOAA LIDAR, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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Village of Woodsburgh
Vision Plan

3. Water Resources

The Significant Habitats and Habitat Complexes of the New York Bight Watershed identifies the aquatic areas at the coastline of the Village as a part of the Hempstead Bays – South Oyster Bay Complex. According to this resource, this habitat complex includes the entire aquatic habitat of West, Middle, and East Hempstead Bays, and South Oyster Bay, including all salt marsh islands and dredged material islands as well as the undeveloped sections of the Long Beach and Jones Beach barrier islands. There is a higher percentage of salt marsh islands in this complex than in the Great South Bay system to the east but, unlike Great South Bay, the mainland salt marshes and creeks in this section have been virtually eliminated by bulkheading and filling. There are no sizable tributaries entering the bays, and most of the mainland tidal creeks have been bulkheaded. The mainland watershed has been densely developed to residential and commercial uses. The following sections describe water resources in and adjacent to the Village.

Surface Waters

Freshwater surface waters within the Village of Woodsburgh are limited to the artificial ponds present on the existing golf course. These water bodies are maintained as an aspect of landscaping on the golf courses. Given their proximity to marine waters, these ponds likely have a higher salt content then would be typical of further inland waterbodies. Tidal waters make up most surface waters within the Village. West Hempstead Bay meets the southern and southeastern borders of the Village, and the Woodmere Channel bisects the Village at the western areas from West Hempstead Bay. Additional discussion regarding these waterbodies is included in the wetlands section below.

The Federal Clean Water Act requires states to periodically assess and report on the quality of waters in their state. Section 303(d) of the Act also requires states to identify "Impaired Waters", where specific designated uses are not fully supported. For these Impaired Waters, New York must consider the development of a Total Maximum Daily Load (TMDL) or other strategy to reduce the input of the specific pollutant(s) that restrict waterbody uses, in order to restore and protect such uses. In 2016, both the Great South Bay West waterbody segment and the Woodmere Channel as were listed as impaired waterbodies.

Stormwater Management

Stormwater runoff from weather events, if not captured by storage systems, has the potential to collect and transport pollutants from development areas to nearby surface waters. In order to protect nearby surface waters and drinking water, the two Counties (Nassau and Suffolk County), various Towns and some Villages provide stormwater requirements for development. Currently, the Village Code does not provide specific requirements for onsite stormwater management systems. Nassau County utilizes a minimum storage requirement to contain 8 inches of stormwater runoff, with some options to reduce this requirement. In the Town of Hempstead, stormwater must be managed on-site based on a design storm, to the satisfaction of the Town Engineer and the Town's stormwater management requirements are based upon Nassau County standards. The Village's stormwater management program is based upon the New York State Pollution Discharge Elimination System (SPDES) requirements for minimum stormwater management standards and controls as noted in Chapter 150, Article IX of the Village Code entitled Erosion and Sediment Control. Under existing conditions, pervious areas of residential properties and both golf courses provide areas for stormwater recharge.

As specified in Section 150-65 of the Village Code, land development activities increase impervious surface coverage and stormwater runoff and, therefore, must be regulated by certain stormwater management standards and appropriate site design to mitigate potential adverse effects of erosion and sediment transport. All development activities that are not subject to review as stated in the Code are required to submit a Stormwater Pollution Prevention Plan (SWPPP) to the Stormwater Management Office.

Chapter 131 of the Village Code provides minimum general requirements for subdivisions. Section 131-21.B notes that subdivisions must be designed to not only conform to existing topography in order to minimize grading and retain natural contours, but to also to limit stormwater runoff and conserve natural vegetation. With respect to drainage improvements for subdivisions, §131-23.B states the following:

1. *The subdivider may be required by the Planning Board to carry away by pipe or open ditch any spring- or surface water that may exist either previous to or as a result of the subdivision. The subdivider may be required to continue the piping of upstream drainage systems. Such drainage facilities shall be located in the street right-of-way where feasible or in perpetual unobstructed easements of appropriate width.*

2. *Drainage facilities shall, in each case, be large enough to accommodate potential runoff from their entire upstream drainage area, whether inside or outside the subdivision, based on a one-hundred-year storm and assuming conditions of maximum potential development within the watershed as permitted by the Zoning Law. The applicant shall be responsible for submitting such computations to the Village Engineer in sufficient detail to make possible the ready determination of the adequacy of the proposed drainage installations, and the Village Engineer shall be responsible for reviewing these and preparing recommendations for the Planning Board.*

3. *The Planning Board may also require the subdivider to prepare a study of the effects of the subdivision on existing downstream drainage facilities. Where such study or the Planning Board, after an independent analysis, determines that the additional runoff incident to the development of the subdivision will overload an existing downstream drainage facility, the Planning Board shall notify the owner of such downstream facility of such potential condition and may withhold approval of the subdivision until provision has been made for the correction of said potential condition, or, in the alternative, the developer may deposit in escrow the full cost of the required improvement of said potential condition in such sum as the Planning Board shall determine. No subdivision shall be approved unless adequate drainage will be provided to an adequate drainage watercourse or facility.*

The Village of Woodsburgh is within a designated municipal small separate stormwater sewer system (MS4) area. MS4s are regulated under the U.S. Environmental Protection Agency's Phase II Stormwater Rule which requires MS4s to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the "maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. As per the NYSDEC website, stormwater runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces such as paved streets, parking lots and rooftops and does not seep into the ground. Consequently, it accumulates and transports chemicals, nutrients, sediment or other pollutants and debris. If the runoff is not captured or it is discharged without first being treated, it can adversely affect water quality in the receiving lakes, rivers and estuaries.

The impact from stormwater runoff increases as new impervious surfaces are introduced into a community. Urban stormwater runoff is identified as a major source of pollutants in 37 percent of all waterbodies assessed as impaired in New York State. In another 40 percent of impaired waterbodies, urban stormwater runoff is listed as a contributing source (though not the most significant source). In addition, for 35 percent of the waters with less severe minor impacts or threats, urban stormwater runoff is noted as a major contributing source of impact. The Village of Woodsburgh regulates stormwater activities as per the regulations in Chapters 121, Sewers, and 85, Illicit Discharges, Activities and Connections, of the Village Code.

Floodplains

The National Flood Insurance Program ("NFIP") was established with the Federal legislature's adoption of the National Flood Insurance Act of 1968. The NFIP is a program that enables property owners in participating communities to purchase flood insurance as protection against flood losses, while requiring State and local governments to enforce floodplain management regulations that reduce future flood damages. The Village of Woodsburgh regulates activities proposed within the 100-year floodplain as per Chapter 77, Flood Damage Prevention, of the Village Code. The Village does not appear to limit uses within the floodplain but requires a floodplain development permit to build within it. Specifically, Article V within Chapter 77 contains general construction standards, general construction standards for residential structures (both within coastal high-hazard areas and outside of coastal high-hazard areas), general construction standards for non-residential structures (both within coastal high-hazard areas and outside of high-hazard coastal areas) and general construction standards for manufactured homes and recreational vehicles. To date, the Village Code does not regulate the density or intensity of new development within a floodplain.

Based on results from the public open house meeting and resident survey, it is apparent that flooding frequently occurs in the Village during rain events and is a well-known issue throughout the Village. Many residents reported flooding is very common on the roadways throughout the Village, especially along Broadway and Woodmere Boulevard. Attendees of the open house also noted that frequent flooding occurs on Browers Point Branch, severe flooding on Ivy Hill Road south of the Woodmere Clubhouse and Keene Lane and that flooding occurs on properties on Ivy Hill Road between Channel Road and Willow Road during high tides. Based on input received during the open house, additional roadways where flooding has been observed by community members include Meadow Drive near Broadway, Railroad Avenue, Pond Lane, and Woods Lane (one attendee noted that there is a low point on Woods Lane and water from Broadway accumulates there due to inadequate drainage infrastructure).

By law, the Federal Emergency Management Agency ("FEMA") can only provide flood insurance to those States or communities that adopt and enforce floodplain management regulations that meet or exceed minimum NFIP requirements. The NFIP requirements apply to areas mapped as Special Flood Hazard Areas ("SFHA") on Flood Insurance Rate Maps ("FIRMs") issued by FEMA. The SFHA is the area that would be flooded by the "base flood" (defined as the flood that has a 1 percent chance of occurring in any given year; also known as the "100-year flood"). The NFIP requirements include but are not limited to:

- Elevation of new and substantially improved residential structures above the base flood level.
- Elevation or dry floodproofing (made watertight) of new or substantially improved non-residential structures.
- Prohibition of development in floodways, the central portion of a riverine floodplain needed to carry deeper and faster moving water.
- Additional requirements to protect buildings in coastal areas from the impacts of waves, high velocity, and storm surge.

Although the Village of Woodsburgh's boundary appears on several maps, the FEMA Flood Insurance Rate Maps that show floodplains within the Village are Map Panels 0214H and 0302G, Community Number 360496, last revised September 11, 2009. As portrayed on **Figure 6**, a large portion of the Village, including most of the golf course properties, is located within the special flood area labeled as Zone AE, which are within the 100 year flood limits and have required base flood elevations. Additionally, some of the southern portions of the Village are within Zone VE, which are subject to additional hazards due to storm velocity wave action; the Village's coastline is within the limit of moderate wave action. The required base flood elevations as illustrated on the FIRM are between 9 and 11 feet above grade level, such that the lowest portion of the buildings construction (including basement or cellar as stated in §77-13 of the Village Code) in these areas must be above the base flood elevation as well as adhering to additional building requirements.

Chapter 77 of the Village Code contains general provisions, floodplain development permit requirements and processes, construction standards and variance procedure for flood damage prevention. The purpose and objectives of this Chapter, as stated in §77-2 and §77-3 are as follows:

Purpose:

A. *Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;*
B. *Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;*
C. *Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;*
D. *Control filling, grading, dredging and other development which may increase erosion or flood damages;*
E. *Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and*
F. *Qualify and maintain for participation in the National Flood Insurance Program.*

Objectives:

A. *To protect human life and health;*
B. *To minimize expenditure of public money for costly flood control projects;*
C. *To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;*
D. *To minimize prolonged business interruptions;*
E. *To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, sewer lines, streets and bridges located in areas of special flood hazard;*
F. *To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;*
G. *To provide that developers are notified that property is in an area of special flood hazard; and*
H. *To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.*

Any construction and other development proposed in a special flood hazard area in the Village requires a floodplain development permit in order to protect "*citizens from increased flood hazards and ensuring that new development is constructed in a manner that minimizes its exposure to flooding*". Any applicant proposing development within the floodplain must comply with the application procedures for floodplain development permits as provided in §77-13 of the Village Code. Additionally, all new development must adhere to the construction standards provided in §77-15 through §77-22 of the Village Code.

A Sea, Lake and Overland Surge from Hurricanes (SLOSH) map was prepared to determine the areas of the Village that are susceptible to storm surges from various hurricane category levels. In a Category 1 hurricane, winds range from 74 to 95 mph (which is increased to between 96 mph and 110 mph or 111 mph to 129 mph for a Category 2 and 3 hurricanes respectively). As depicted in **Figure 7**, the shoreline of the Village is impacted by a Category 1 hurricane storm surge however, most of the Village would be susceptible to storm surge for a Category 2 hurricane and the entire Village susceptible for a Category 3 hurricane.

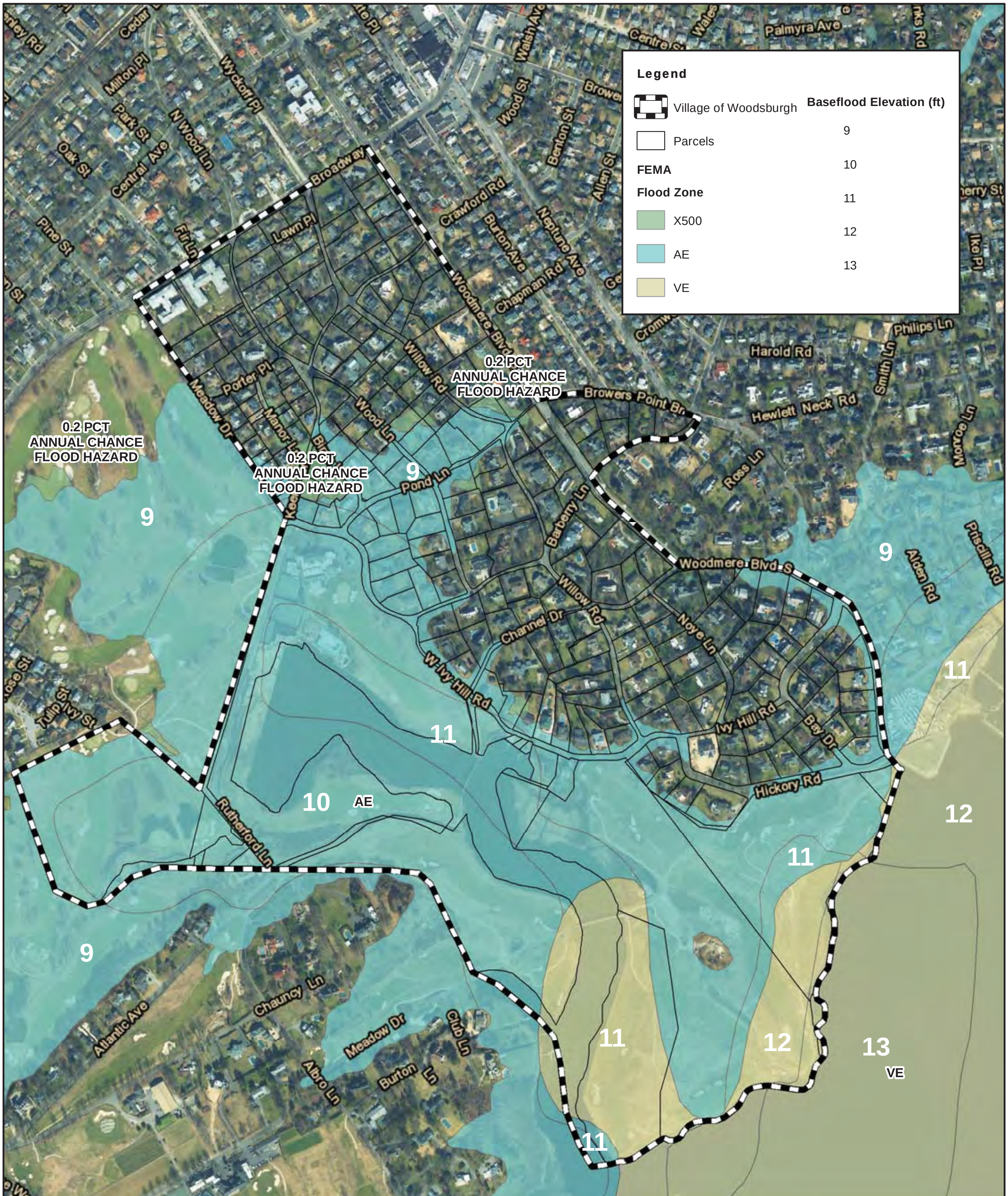

FIGURE 6
FEMA FLOODPLAINS

Source: NYS GIS Orthoimagery 2016, FEMA,
ESRI World Transportation
Scale: 1 inch = 700 feet

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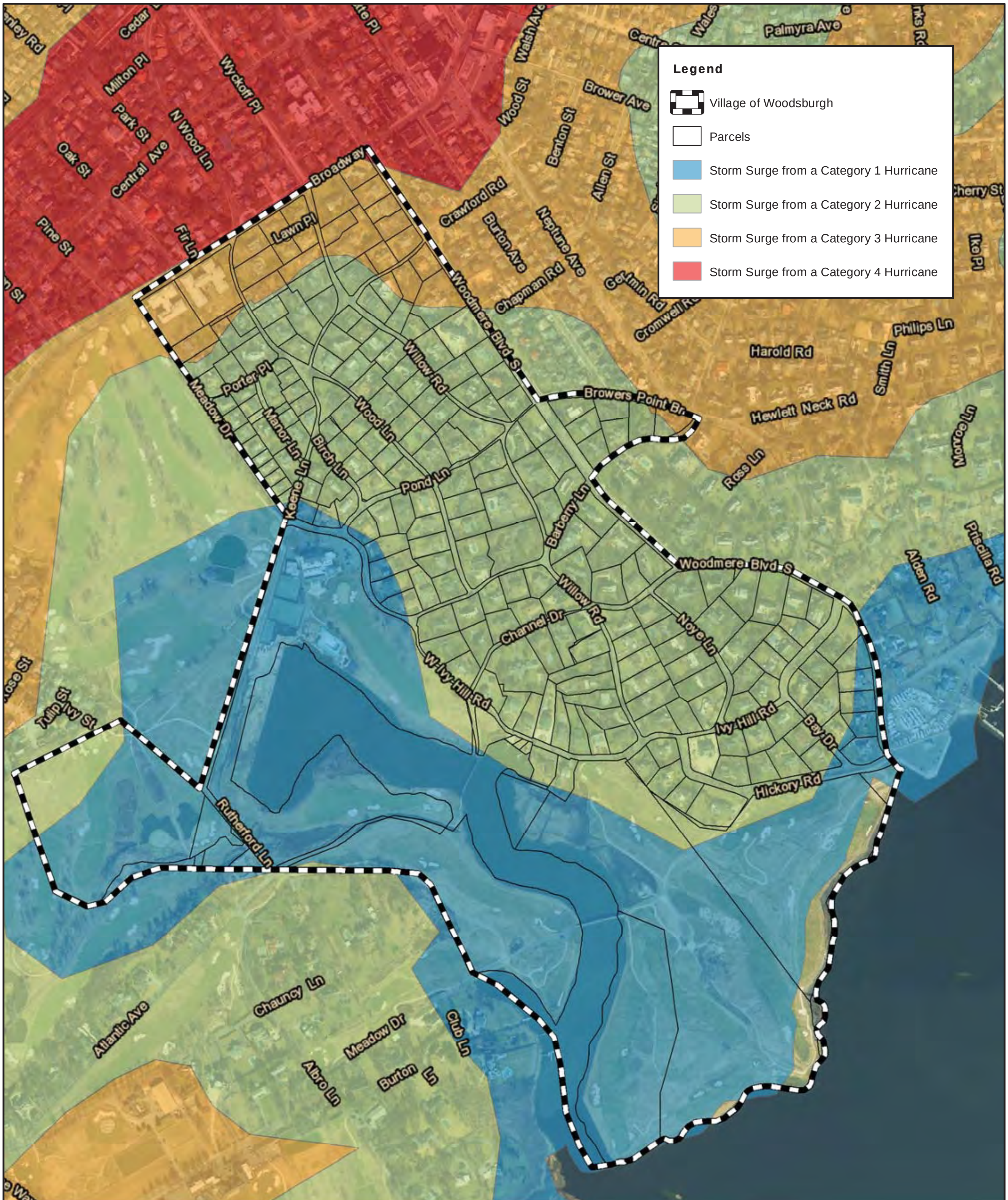

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FIGURE 7
SEA, LAKE AND OVERLAND SURGE FROM HURRICANES (SLOSH) MAP

Source: Nassau County GIS, SLOSH, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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Storm surges from hurricane events cause significant flooding in low-lying coastal regions. In 2012, Superstorm Sandy caused major damage to the south shore of Long Island from heavy rains, strong winds and record storm surges. The Village of Woodsburgh was one of many areas along the south shore that was impacted by the storm as a result of low elevations and coastline locations. The Rockaway Club property within the Village, most of the Woodmere Club, including areas outside of the Village, as well as portions of the neighborhoods north of these properties were inundated from Superstorm Sandy.

According to the public survey, a number of homes and areas were flooded during following Superstorm Sandy. Commenters were asked to help identify locations in the Village that experienced the most significant amounts of flooding. According to the public survey, the most flooded areas included:

- Woodmere Boulevard South (60.6%)
- Ivy Hill Road (60.6%)
- Meadow Drive (37.4%)
- Keene Lane (31.3%)
- Hickory Road (29.3%)
- Bay Drive (22.2%)
- Rutherford Lane (14.1%)
- Other responses:
    - Railroad Avenue
    - Wood Lane
    - Pond Lane
    - Willow Road
    - Manor Lane
    - Area by the Woodmere Dock

Many of the residents that lived in the area during Superstorm Sandy reported at the public open house that much of the Village was flooded, resulting in boats traveling from the Marina and up Woodmere Boulevard to Ivy Hill Lane where they ended up on residents' lawns and damaged many homes. It was noted during the public open house that one property along Ivy Hill Road collected approximately five feet of water inside the home after Superstorm Sandy, which took approximately two years to rebuild. Additionally, the basement of the main clubhouse building was reported to have contained multiple feet of water inside after Superstorm Sandy. One resident sent a member of the consultant staff several photographs of the aftermath of Superstorm Sandy for use in this Vision Plan, which are included below.

Thank you to the residents of Woodsburgh for providing these photographs at the public open house.

Sea level rise is also an issue of concern for the Village of Woodsburgh and surrounding areas due to its low elevation and location along the coastline. As sea levels continue to rise, these areas will become increasingly vulnerable to impacts associated with flooding from storm surges and weather events. These factors present major concerns for future development within the Village's coastal areas. In general, sea level rise presents a risk to people, resources and the economy.

In response to climate change and sea level rise, the New York State Energy Research and Development Authority (NYSERDA) prepared sea level rise projections known as ClimAID in 2011 and supplemental projections in 2014 along New York's coastlines and estuaries. These projections evaluate the risks to New York State communities and individuals in order to plan for resiliency and adaption in the future. The New York State ClimAID study includes consideration of the possibility of rapid melt of land-based ice on Antarctica and Greenland. Recently published research confirms[9] that the rapid melting of land-based ice is occurring and could result in high rates of sea-level rise, especially if greenhouse gas emissions remain persistent. The adopted regulation includes a "definition" of high projections of approximately six feet of sea-level rise by 2100, which is considered to be the best available information at this time for New York State and is utilized by the NYSDEC pursuant to 6 NYCRR Part 490 of the Environmental Conservation Law. The chart below presents the ClimAid model projections downscaled to Long Island:

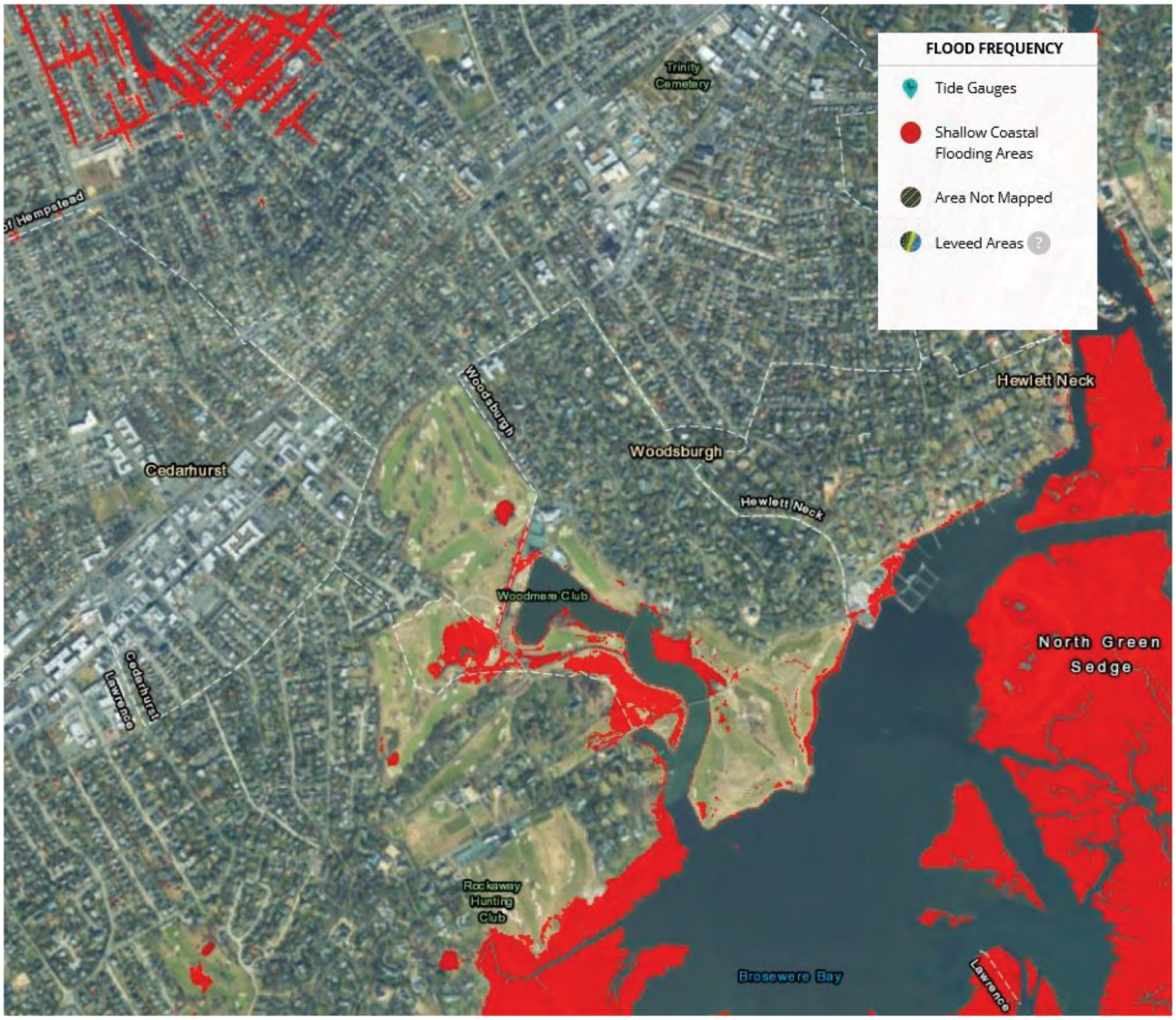
Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	21 inches	34 inches	47 inches	72 inches

Similarly, in 2012, the National Oceanic and Atmospheric Administration (NOAA) scientists conducted a review of the research on global sea level rise projections at the request of the U.S. Climate Change Science Program.[10] NOAA scientists concluded that that there is very high confidence (greater than 90 percent chance) that global mean sea level will rise at least 8 inches (0.2 meter) but no more than 6.6 feet (2.0 meters) by 2100.

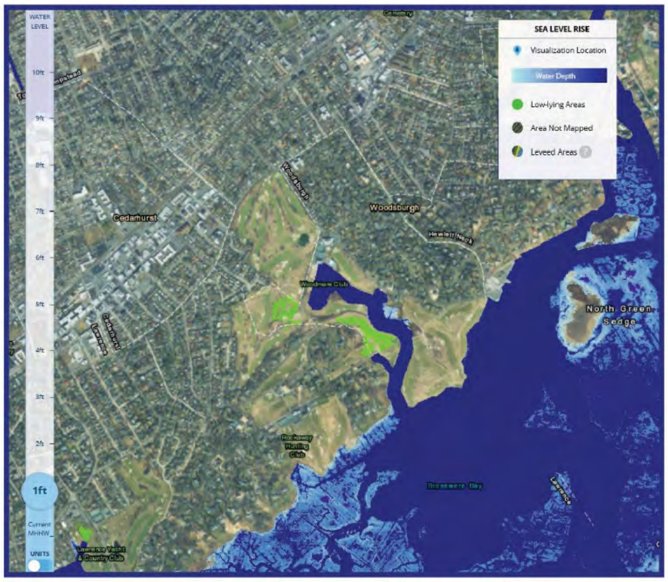
NOAA's Office for Coastal Management developed a web mapping tool to illustrate areas impacted by sea level rise.[11] This tool, known as the Sea Level Rise Viewer, helps visualize community level impacts from coastal flooding or sea level rise (up to 10 feet above average high tides) and provides data for all coastal states and territories except for Alaska. The Sea Level Rise Viewer also depicts areas of high tide flooding,

[9] https://www.dec.ny.gov/press/109195.html
[10] https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level
[11] https://coast.noaa.gov/digitalcoast/tools/slr.html

often called "recurrent or nuisance flooding" according to the web mapping tool. The image below depicts high tide flooding in the Village.

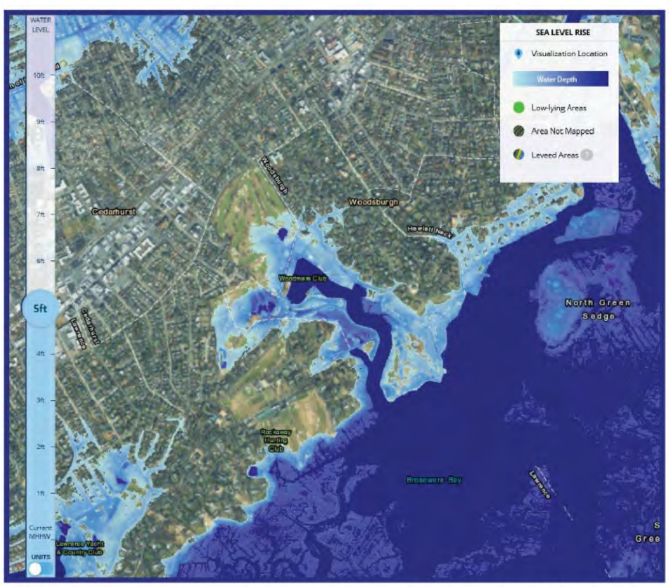


The images below portray sea level rise inundation from a 1-foot sea level rise to a 6-foot sea level rise in the Village of Woodsburgh, according to NOAA's Sea Level Rise Viewer.

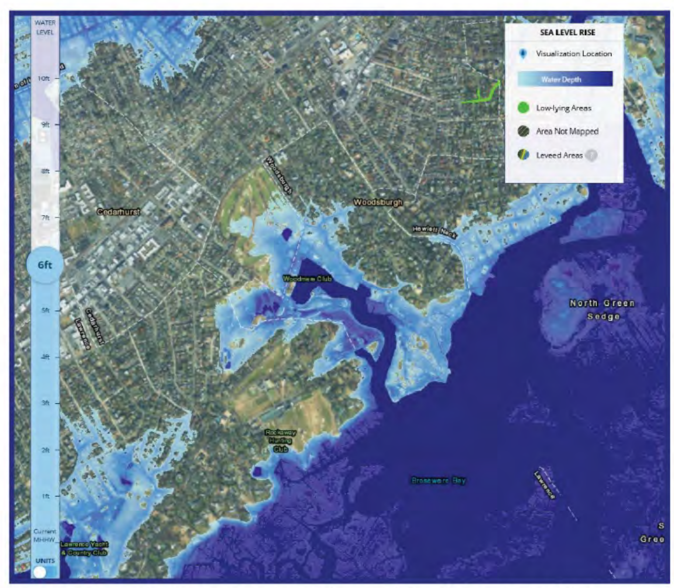


Represents a one-foot water level rise, which generally relates to the high projection of 10 inches for the 2020s and the low-medium to medium projections of 11 inches to 16 inches in the 2050s as depicted in the ClimAid model projections.

Represents a three-foot water level rise, which generally relates to the high projection of 30 inches for the 2050s and the medium to high-medium projections of 29 inches to 39 inches in the 2080s as depicted in the ClimAid model projections.



Represents a five-foot water level rise, which generally relates to the high projection of 58 inches for the 2080s and the medium to high-medium projections of 34 inches to 47 inches in the 2100s as depicted in the ClimAid model projections.



Represents a six-foot water level rise, which relates to the high projection of 72 inches for the 2100s as depicted in the ClimAid model projections.

As sea level is anticipated to rise by approximately 6 feet by 2100, the Village must implement coastal resiliency measures to adapt to these changing conditions. This is particularly important in the lowest lying areas of the Village.

Groundwater

The Village of Woodsburgh is located over the Long Island aquifer system that occurs beneath the entirety of the island (Nassau, Suffolk, Queens, and Kings counties) and is within a sole source aquifer meaning that all drinking water is obtained from groundwater. Three major aquifers make up the designated SSA and are listed from top to bottom: The Upper Glacial aquifer, the Magothy aquifer and the Lloyd aquifer. The Upper Glacial aquifer has been impacted by organic and nitrate pollution. The Magothy aquifer is utilized for the majority of water needs in Nassau County and is less impacted by pollution. At the deepest part of the system lies that Lloyd aquifer which is the least impacted but difficult to access due to the presence of a clay lens (the Raritan Clay layer) above it. The clay also limits and slows the amount of recharge in this system.

A large portion of the Village contains areas with high groundwater elevation resulting in flooding and drainage issues throughout the Village. **Figure 8** indicates that the depth to groundwater within the Village is very shallow in many areas which provides a limitation for construction and the installation of effective drainage management systems.

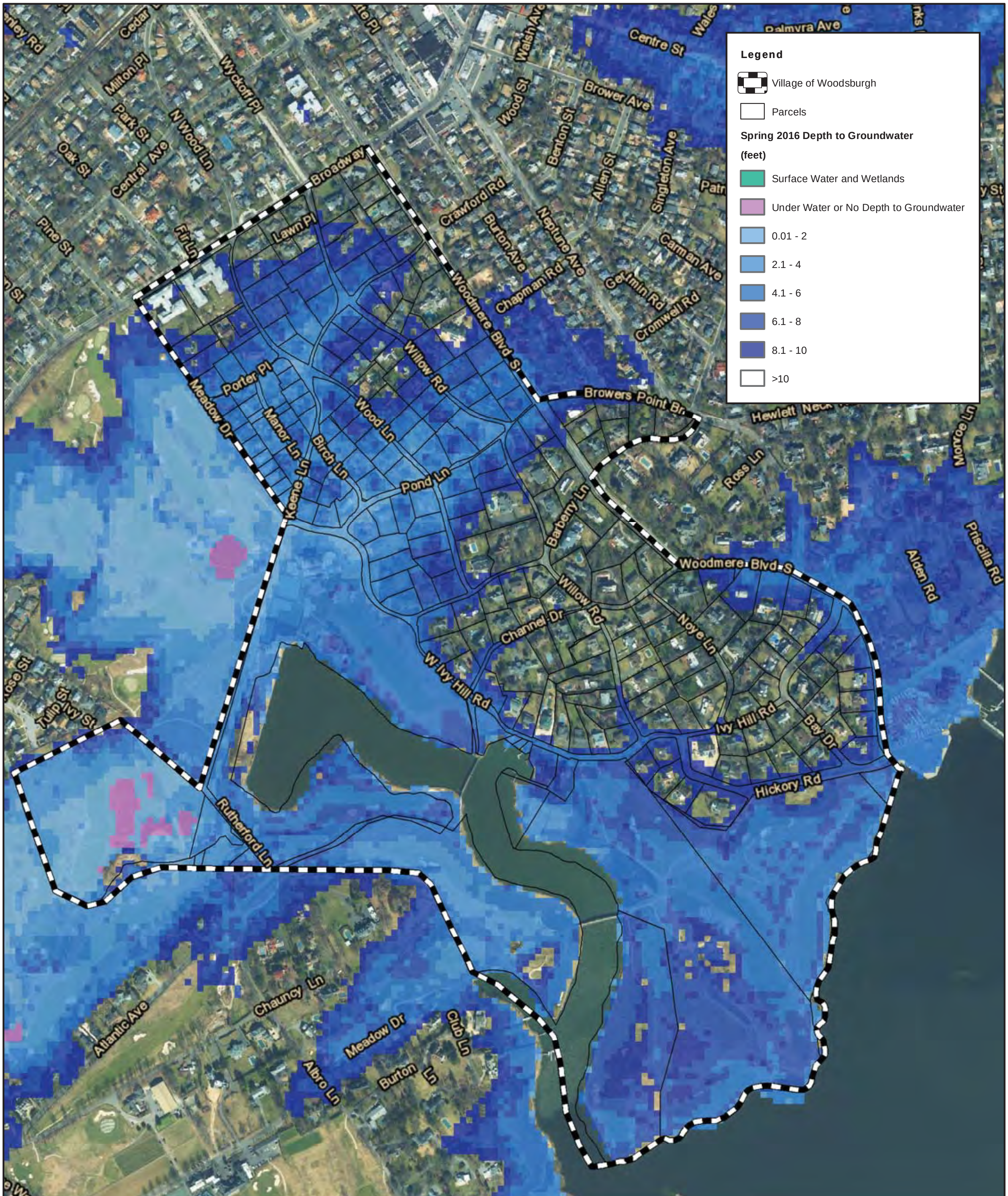


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FIGURE 8
DEPTH TO GROUNDWATER

Source: USGS SIM Map 3398 April-March 2016 data,
NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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4. Wetlands

Wetlands are some of the most productive ecosystems, and provide nesting, spawning, and breeding habitat for a diverse variety of wildlife and plants. They also perform vital ecosystem services, such as water filtration and storage, which can assist in reducing flood impacts and improve water quality by absorbing pollutants and reducing turbidity. Additionally, wetlands provide groundwater recharge; assist in maintaining base flow in streams and rivers and support ponds and lakes. They also provide opportunities for recreation, education and research, and provide natural open space.

The NYSDEC regulates activities that occur within or adjacent to freshwater and tidal wetlands. The U.S. Army Corps of Engineers (USACOE) regulates activities that occur only directly within freshwater and tidal wetlands.

There are no mapped state-regulated freshwater wetlands within the boundaries of the Village. The United States Fish and Wildlife Service (USFWS) publishes a series of National Wetland Inventory (NWI) maps that illustrate the location of smaller wetland systems - these wetlands are typically regulated by the ACOE. The artificial ponds located on the golf course are regulated by the ACOE and represent potential waters of the United States (see **Figure 9**). Any activities that occur directly within these water bodies would require consultation with the USACOE.

The waters and marsh areas along the coastline of the Village, including Woodmere Channel, constitute tidal wetlands regulated by both the NYSDEC and ACOE (see **Figure 3** in the **NATURAL RESOURCES** section above). Wetlands are categorized by the types of vegetation present. The regulations identify classifications of uses, procedures for conducting activities in wetlands and requirements for conducting activities in wetlands. The NYSDEC regulates activities within the wetland itself, and, generally, a 300-foot adjacent area immediately surrounding a wetland. Regulated activities which require a permit from the NYSDEC include, but are not limited to: construction of buildings, roadways, septic systems, bulkheads, dikes, or dams; placement of fill, excavation, or grading; modification, expansion, or extensive restoration of existing structures; drainage, except for agriculture; and application of pesticides in wetlands.

As defined by the ACOE and U.S. Environmental Protection Agency, wetlands are "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include swamps, marshes, bogs, and similar areas. The ACOE determines wetlands based on vegetation, soils and hydrology, and regulates activities within the wetland and does not regulate activities within any adjacent area.

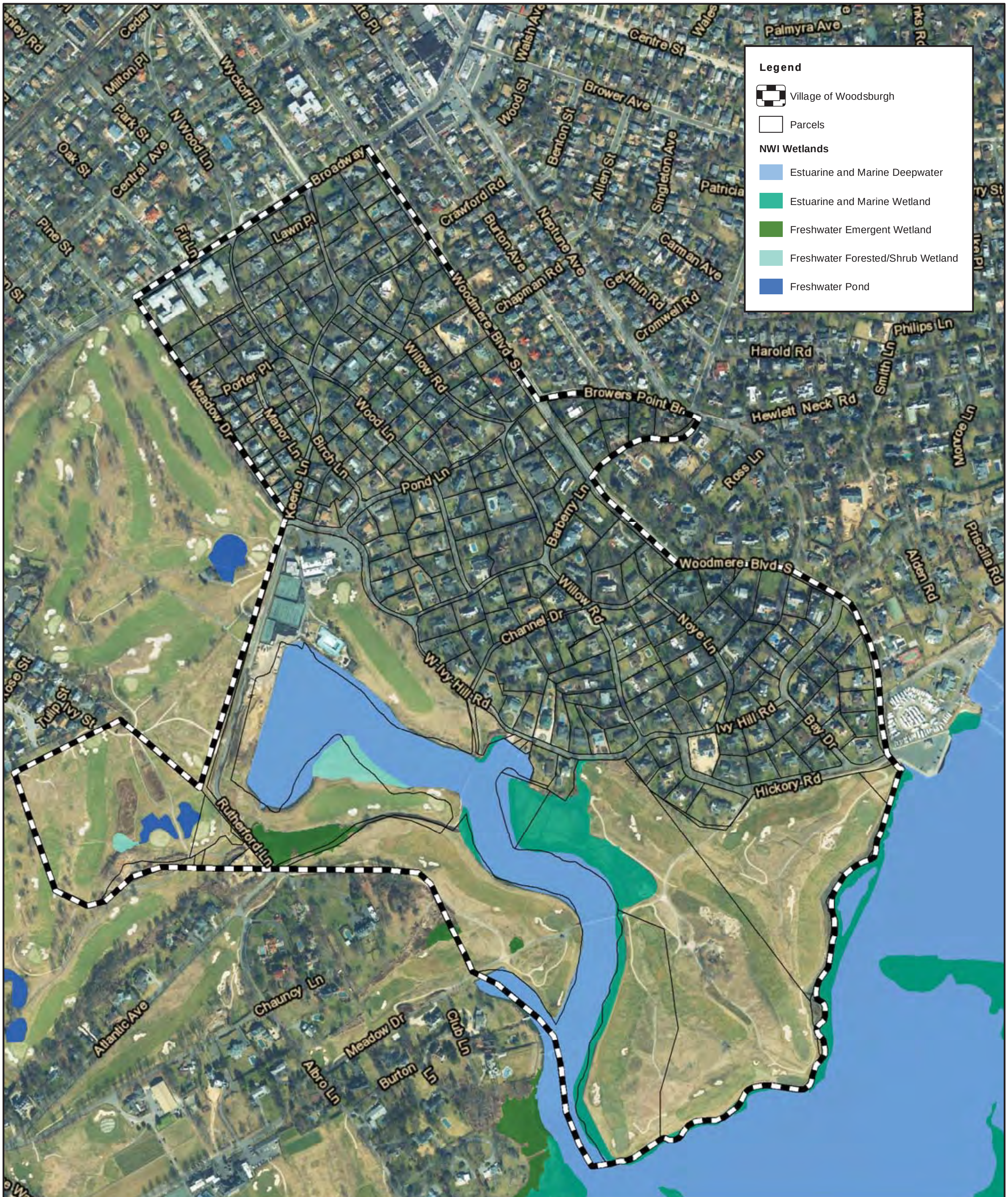

FIGURE 9
NATIONAL WETLANDS INVENTORY

Source: Nassau County GIS, NWI, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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5. Ecology

The Village of Woodsburgh is almost entirely built out, with the golf courses being the only area considered as open space. As such, the terrestrial flora and fauna are those species that are best adapted for the developed suburban environment. Vegetation is mainly comprised of landscaping and manicured lawn areas within residential properties and the golf course properties. Frontier species and invasive species would be expected in relative abundance due to their opportunistic niches and tolerance of poor environmental conditions. A site inspection of the Village conducted on May 7, 2019 indicated a prevalence of Common Reed (Phragmites australis) and Mugwort (Artemisia vulgaris) within right-of-ways and other Village owned areas. These species are considered non-native and highly invasive.

While the golf course areas are considered open space, their ecological value is lessened by the presence of the turf grasses associated with the fairways, greens and roughs. Vegetation between these areas is sparse and provides little cover; as such, most fauna utilizing this area likely do so in a transient manner. Diminished breeding habitats may be present for some species of typical passerine birds and small mammals tolerant of human activity (e.g., Robins, Wrens, Mice).

In contrast to the terrestrial landscape, the tidal waters of West Hempstead Bay and associated islands offer an undeveloped, open ecosystem that is of significant conservation concern. According to the Significant Habitats and Habitat Complexes of the New York Bight Watershed, this area, in conjunction with the Middle and East Hempstead Bays and South Oyster Bay, is identified as the Hempstead Bays – South Oyster Bay Complex, and is an area of particular ecological importance due to the presence of multiple species of nesting shorebirds of various state and federal protected levels. Sea turtle habitats are also present, which likely occur on an infrequent manner. Additionally, the Northern Diamondback Terrapin (Malaclemys t. terrapin) is known to nest within the Hempstead Bays – South Oyster Bay Complex and sightings have been reported in the area by residents of the Village.

The majority of the shoreline within the Village, including Woodmere Channel, is hardened. With respect to the immediate vicinity of the Village, the hardened shorelines severely limit the presence of marine organisms within Village boundaries. Depositional forces and accretion have left a narrow strip of intertidal marsh on the seaward side of the bulkhead bordering the southwestern portion of the Rockaway Hunting Club. This strip is fronted by an area of coastal shoals, bars, and mudflats (SM) wetlands. During the May 7, 2019 site inspection, Saltmarsh Cordgrass (Spartina alterniflora) was observed seaward of the bulkheaded border of the golf course. In addition, several Brant (Branta bernicla), a species of small, migratory goose, were observed within the proximate waters. In addition, a small high marsh area is present within the middle portions of Woodmere Channel. Although limited, these areas represent the most ecologically viable areas within the boundary of the Village. The high marsh area is approximately two acres and may include potential habitat and nesting areas for certain protected shorebird species.

According to the NYSDEC, High Marsh is defined as: "The normal upper most tidal wetland zone usually dominated by salt meadow grass, Spartina patens; and spike grass, Distichlis spicata. This zone is periodically flooded by spring and storm tides and is often vegetated by low vigor Spartina alterniflora and Seaside lavender, Limonium carolinianum". Additional information about High Marsh is defined by the habitat classification system developed by the NYSDEC (Edinger et al., 2013):

> *"Characteristic birds at varying abundance that breed in or near salt marshes include marsh wren (Cistothorus palustris), saltmarsh sharp-tailed sparrow (Ammodramus caudactus), red-winged blackbird (Agelaius phoeniceus), black-crowned night heron (Nycticorax nycticorax), Canada goose (Branta canadensis), American black duck (Anas rubripes) clapper rail (Rallus longirostris), and willet (Catoptrophorus semipalmatus) (Niedowski 2000). Many more birds*

> *depend on salt marshes for food, such as green heron (Butorides striatus), great egret (Casmerodius albus), snowy egret (Egretta thula), glossy ibis (Plegadis falcinellus), tree swallow (Tachycineta bicolor), and terns (Sterna spp.) (Niedowski 2000)".*

Although, relatively small, especially as compared to the marshy islands of Hempstead Bay, this patch of High Marsh is well sheltered due to its location at the mid-point of Woodmere Channel. Thus, this area represents potential habitat for a small population of multiple species. Potential future development should include consideration for preservation and restoration of these areas.

West Hempstead Bay, located adjacent to the south of the Village, is part of the West Hempstead Bay/Jones Beach West Important Bird Area. The National Audubon Society notes:

> *"An Important Bird Area (IBA) is a site providing essential habitat to one or more species of breeding or non-breeding birds. The sites vary in size, but are usually discrete and distinguishable in character, habitat, or ornithological importance from surrounding areas… In general, an IBA should exist as an actual or potential protected area, with or without buffer zones, or should have the potential to be managed in some way for birds and general nature conservation".*

The West Hempstead Bay/Jones Beach West IBA consists of barrier islands on the south shore of Long Island and islands and marshes on the bay side. Sandy beach and dune systems, natural salt marshes and spoil islands are included. According to the National Audubon Society, large numbers of waterfowl utilize this area in winter. Specifically, during the 1990 Christmas Bird Count (an annual one-day event), 25,000 Brant (Branta bernicla) and 10,000 American Black Ducks (Anas rubripes) were documented in this area. The area functions as a significant breeding habitat for multiple shore species of bird, including the state endangered Piping Plover (Charadrius melodus) and state threatened Common Tern (Sterna hirundo). The area also functions as a feeding area for migratory shorebirds. It should be noted that Woodmere Channel is not considered part of the West Hempstead Bay/Jones Beach West IBA but is contiguous to it and should be considered as an area to be protected.

When asked to rate the importance of the Village's ecology, the responses from community members and residents in the public survey were as follows:

- Extremely important (70%)
- Very Important (16.4%)
- Somewhat important (7.3%)
- Not so important (3.6%)
- Not at all important (2.7%)

During the public open house, residents notes several different species in the Village which may be a result of the relatively lower density of development within Woodsburgh in comparison to its neighboring villages, and the significant expanses of open space within the two golf courses situated in the Village. The golf courses abut the waterfront, which has allowed for some critical coastal habitats to be retained. As a portion of Woodsburgh has been developed with residential uses and golf courses for a considerable length of time, the wildlife species present have had time to adapt and have found a niche. As would be expected, residents remarked on a large variety of backyard wildlife, particularly Passerine (songbird) species and Rabbits. Additional species reportedly observed include Raccoons (Procyon lotor), Opossums (Didelphis virginiana) and various Passerine species including Northern Cardinals (Cardinalis cardinalis), Blue Jays (Cyanocitta cristata) and finches. It is important to note that these species are particularly easy to observe due to their habitat and/or diurnal behavior. Within the upland areas of the Village, several species of note were reported by at least one individual. These species include Peregrine Falcon (Falco peregrinus), Osprey (Pandion haliaetus), and Yellow-crowned Night Heron (Nyctanassa violacea). Several individuals also noted hearing a "ghostly" call at night – likely Eastern Screech Owls (Megascops asio).

Several commenters at the public open house noted Diamondback Terrapins (Malaclemys terrapin) throughout the waters. Two observers also noted the species on land. It is important to note that this species only utilizes the land to nest; therefore, it is reasonable to acknowledge that Diamondback Terrapins are at least attempting to reproduce in the area. Diamondback Terrapins are not identified as an endangered or threatened species in New York State and until recently were considered a game species with an open season. On May 1, 2018 commercial harvest was completely eliminated in New York State. Although the species receives no additional protections from the state, it is considered a vulnerable species, with several other states currently listing the species as endangered, threatened, or a species of special concern. Many individuals also noted Osprey flying overhead, especially near the golf courses.

One individual noted a variety of fish and crustaceans in Woodmere Channel including Bluefish (Pomatomus saltatrix), Blue Claw Crabs (Callinectes sapidus), Black Sea Bass (Centropristis striata), Flounder (Pseudopleuronectes americanus), and Bunker (Brevoortia tyrannus).

Some responders had pointed out that one of the golf courses ponds, though located within the neighboring Village of Lawrence, contains turtles, herons, and hawks. This pond appears to be a more active pond as compared to the three located within the Village of Woodsburgh. One hypothesis is that the active pond is located further from Woodmere Channel and is thus exposed to less salt spray. Changes in salinity of these ponds likely translates to high transience of semi-aquatic and aquatic animals within these systems, as evidenced by one observation of a frog/toad (likely a Green Frog (Rana clamitans), Bullfrog (Rana catesbeiana) or Fowler's Toad (Anaxyrus fowleri)) within the northeastern area of the Village.

The wildlife observed and noted within the Village can be divided into two categories: species that are well adapted to suburban environments and/or species that have at least some dependence on estuarine/marine ecosystems.

Significant Species

On March 1, 2019, the NYSDEC Natural Heritage Program was consulted to determine whether rare, threatened, endangered, or species of special concern are present in or in close proximity to the Village. In a response dated March 25, 2019, the NYSDEC listed the following species:

- Common Tern (Sterna hirundo) – NYS threatened species, confirmed as breeding within 0.4 mile of the village boundary;
- Yellow-crowned Night Heron (Nyctanassa violacea) – NYS rare species, documented within 0.25 mile east of the village boundary.
- Forster's Tern (Sterna forsteri) – NYS rare species, documented with 0.25 mile east and 0.4 mile south of the village boundary.

- Little Blue Heron (Egretta caerulea) – NYS rare species, documented within 0.25 mile east of the village boundary.
- Gull-billed Tern (Gelohelidon nilotica) – NYS rare species, documented within 0.4 mile south of the village boundary.

In addition, the NYSDEC has indicated that high-quality occurrences of low salt marsh, high salt marsh, and salt panne ecological communities proximate to the Village; each of these habitats is associated with West Hempstead Bay. An Osprey (Pandion haliaetus) was observed within the Village during the May 7, 2019 inspection (see **Figure 10**). Same is considered a species of "special concern" by the NYSDEC. Special concern species are native species which are not recognized as endangered or threatened, but for which there is documented concern about their welfare in New York State as a whole. Unlike threatened or endangered species, species of special concern receive no additional legal protection under Environmental Conservation Law Section 11- 0535. Given its coastal location, the Village of Woodsburgh represents an area that could readily be fitted with infrastructure (e.g., nesting platforms) to encourage the breeding and proliferation of Osprey.

Terrestrial mammals and herpetofauna would be limited to those species best adapted to suburban landscapes, including Eastern Gray Squirrel (Sciurus carolinensis), Raccoon (Procyon lotor) and Garter Snake (Thamnophis sirtalis). Herpetofauna would be especially limited due to the proximity of marine waters, which are not tolerated by the majority of regional species.

There are no NYSDEC designated critical environmental areas in the Village. For most sites, comprehensive field surveys have not been conducted; the NYSDEC report only includes records from its databases. The agency cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of any proposed project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

Probably the most interesting zoological assessment of the Village comes from the relative abundance of Yellow-crowned Night Herons nesting in the part of the Village farthest from the water, as noted by several participants in the public open house. According to the NYS Natural Heritage Program (NYNHP), this species is imperiled in New York and very vulnerable to disappearing from New York due to rarity or other factors. It is likely that Woodmere Channel hosts an array of crustaceans, the primary food for Night Herons. This species; however, typically nests in trees. According to the NYNHP, Yellow-crowned Night Herons can be found in marshes, swamps, lakes, lagoons, and mangrove swamps, depending on geographical location. In New York, Yellow-crowned Night Herons nest and feed in low, coastal shrubland, dredge spoil, on salt marsh islands, and in woodlands near swamps, rivers, and harbors in the Long Island Bays. They will also nest in wooded neighborhoods that are near water and food sources and are known to inhabit the Hempstead bay islands. As the two golf courses make up the majority of the shoreline, the presence of trees at the water is limited. Rather than nest elsewhere, multiple individuals of the Yellow-crowned Night Heron population have likely nested farther inland in order to still utilize Woodmere Channel as a food source. As compared to other heron species, these species are relatively tolerant of human activities and have also likely utilized these suburban areas as heterospecifics will not.

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FIGURE 10
ECOLOGICAL RESOURCES MAP

Source: Nassau County GIS, NPV Ecology data based on a May 7, 2019 field inspection
Scale: 1 inch = 700 feet

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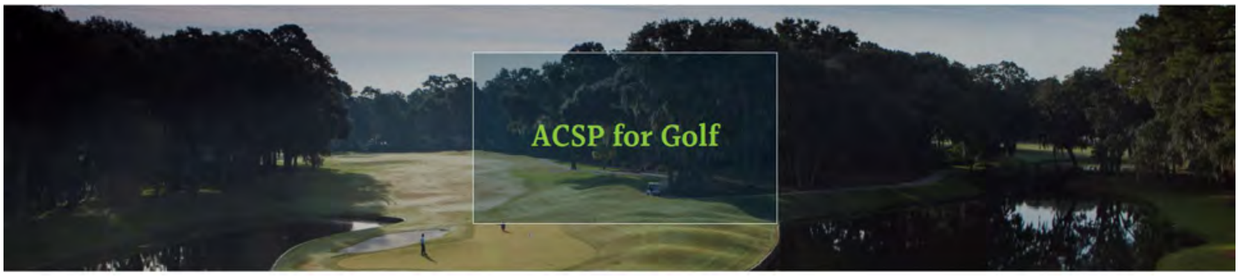
Village of Woodsburgh Vision Plan

Audubon Cooperative Sanctuary Program for Golf Courses

Since 1991, the Audubon Cooperative Sanctuary for Golf Courses is an environmental education and certification program that has helped golf properties incorporate environmental protection into golf course operations. This program enhances natural areas and wildlife habitats that golf courses provide, minimizes potential detrimental impacts from golf course operations and improves efficiency at participating properties. Audubon International has established Environmental Management Practices that are generally relevant to all golf course and are the basis for the Audubon Cooperative Sanctuary for Golf Courses program certification guidelines. The six key environmental components of the program and associated description[12] include:

- *Environmental Planning – Evaluation and planning helps course managers to balance the demands of golf with their responsibility to the natural environment. An initial site assessment and environmental plan, followed by yearly review and goal setting, helps golf course superintendents and others to responsibly care for the land, water, wildlife, and natural resources upon which the course is sustained.*
- *Wildlife and Habitat Management – Implementing environmental management practices enhances existing natural habitats and landscaping on the golf course to promote wildlife and biodiversity conservation. The great variation in golf course location, size, and layout, as well as special wildlife species and habitat considerations, must be accounted for when planning and implementing appropriate practices.*
- *Chemical Use Reduction and Safety – Golf courses must employ best management practices and integrated pest management techniques to ensure safe storage, application, and handling of chemicals and reduce actual and potential environmental contamination associated with chemical use.*
- *Water Conservation – Water conservation on the golf course involves maintaining irrigation equipment to maximize efficiency and minimize waste, as well as employing water conserving irrigation practices.*
- *Water Quality Management – The use of best management practices helps golf courses to protect the health and integrity of water resources. Water quality monitoring provides a valuable tool for evaluating whether management practices are working.*
- *Outreach and Education – Golfer support for the environmental management program is essential to its longterm success. A variety of education and outreach activities assist golf course maintenance staff in communicating with patrons and community members and invite participation where appropriate. The ACSP for Golf Courses requires that golf courses form a Resource Advisory Group to help plan and implement environmental projects and educational efforts. Representatives from the golf course, as well as the local community, often participate to offer advice or volunteer assistance.*

[12] https://auduboninternational.org/wp-content/uploads/2019/02/G_E-Environmental-Management-Guidelines-for-Golf.pdf



In order to become a Certified Audubon Cooperative Sanctuary, a golf course must join the program, create a customized environmental management plan incorporating each of the six key environmental components, document the results and performance of the environmental management plan and host a site visit with Audubon International staff members. Any participating golf course property must become recertified every three years to maintain the Certified Sanctuary designation.

As the golf course properties within the Village are privately owned and it may not be feasible for these courses to become certified, certain Audubon Cooperative Sanctuary practices can be adopted at these properties to ensure environmentally responsible maintenance practices are incorporated into day-to-day golf course operations.

C. LAND USE AND ZONING

The land use pattern in the Village of Woodsburgh has evolved as a result of a variety of factors that relate to history, environment, and transportation infrastructure. In the early 1800s, the Village was only known as farmland in the Rockaways. Samuel Wood, a wealthy entrepreneur began to acquire Rockaway farmland in 1868 in the area that is now Woodsburgh to fulfill his dream of improving the community of his childhood. By the late 1800s, the railroad was completed, and New York's upper class sought out areas east of the City for relaxation and outdoor recreation. Mansions were established along the south shore to house the elite during the summer months. The influx of affluent second homeowners supported the development of social organizations and the Rockaway Hunt Club (now the Rockaway Hunting Club), which was established in 1878 and became the center of social activity in the Rockaways. Two years before Woodsburgh became an incorporated Village in Nassau County in 1912, the Woodmere Club was established. As a result of the 1929 stock market crash and the Great Depression, many homeowners were forced to sell their properties and estates in Woodsburgh. However, both golf courses remained as recreational open space during this time. Following World War II, land speculators demolished the mansions and constructed several single-family houses in their place. Seventy-five percent of the homes in Woodsburgh today were built after 1939, which is apparent from the variety of architectural styles throughout the Village.

Development patterns have remained the same since and the Village's growth, to some extent, is constrained by tidal waters and floodplains to the south. Portions of both the Woodmere Country Club and Rockaway Hunting Club also further limit new development in the Village. As a result of the golf course properties and densely developed residential communities in the Village, the ability to accommodate certain types of development is constrained. Ultimately, the Village has enacted land use regulations that are intended to guide development based on the various factors identified above. This section evaluates the Village's existing land use pattern, and the land use regulations intended to guide this pattern. Also discussed are the land use policy documents of other agencies which influence land use in the Village.

1. Comprehensive Planning

To date, a comprehensive planning document has not been prepared for the Village of Woodsburgh. Therefore, all Comprehensive Planning documents discussed below are County planning documents that have helped guide development in the Village of Woodsburgh over the last 20 years. The current overall Nassau County Comprehensive Plan was prepared in 1998 and there have been several updates to this plan since that time, including a 2003 Inventory update, a 2008 Trends Analysis update and a 2010 Draft Master Plan. Since the 2003 and 2008 Master Plan updates are revised inventory documents, and the 2010 Draft Master Plan has not been finalized or approved and remains in draft form, the 1999 Master Plan is the official comprehensive planning document that guides growth and development in Nassau County. However, the relevant recommendations provided in all of the County's planning documents are presented below.

1998 Nassau County Master Plan

The Nassau County Planning Commission prepared and adopted a Comprehensive Plan in 1998 in accordance with the Amendments to the County Charter. These amendments also directed the Planning Commission to update their Comprehensive Plan every five years. The 1999 Master Plan was designed to guide development which is protective of Nassau County's natural resource and open space areas, provides a vision for current and long-range growth, and to maintain and enhance the quality of life. The 1999 Master Plan provides the following relevant goals, recommendations and implementation strategies that were considered during the preparation of this 2019 Vision Plan for the Village of Woodsburgh (where text is **bold**, emphasis was added).

The Nassau County Comprehensive Plan is a visionary policy document which focuses on the current and long-range protection, enhancement, growth and development of Nassau County. Overall, the Comprehensive Plan contains 22 Goals; 107 Policy Recommendations; and 332 Implementation Strategies relevant to the subject matters of: interagency planning and coordination, land use, environmental resources, transportation, housing, the economy, culture and recreation, and community facilities and services. The policy recommendations and implementation strategies identify important issues, studies and programs, and initiatives which can be undertaken by a variety of entities (County departments and agencies, municipalities, local committees and organizations, private sector and non-profit organizations, as well as State, Federal and regional agencies).

Interagency Planning and Coordination

Goal: Facilitate and encourage inter-municipal, interagency, and regional efforts which result in the efficient provision of services, implementation of projects, and better communication between organizations.

- *Policy Recommendation: Foster greater communication between Nassau County Departments and municipalities to provide better coordination, improve understanding, and maximize the efficient use of resources.*
    - *Implementation Strategies:*
        - *The County, municipalities, State and regional agencies should come to agreement on a common methodology to be used to collect and record data on existing land use and environmental conditions, future plans, area-wide projects, demography, and similar matters.*

Land Use

Open space contributes to the environmental, social, recreational, and economic vitality of the County. Environmentally, open space provides groundwater protection; wetland, surface and marine habitats for various plants and animal species; and natural buffers between developed areas. Open space also provides opportunities for outdoor recreation and educational activities, social gatherings, and relief from the tensions of everyday life.

Parks, golf courses, waterfronts and beaches can help attract tourists and maintain economic investment in the community. In addition, open space can cost less to service than residential, commercial and industrial uses.

Goal: Promote a balanced pattern of land use that encourages the concentration of future development in established areas with adequate infrastructure and facilities, so as to make efficient utilization of the transportation network, preserve the County's environmental and scenic resources, and revitalize existing downtowns and Centers.

- *Policy Recommendation:* *Define a future land use plan for Nassau County that is based on the established downtowns and Centers, preferred development patterns, existing and proposed transportation systems, and environmental features in the County.*
- *Policy Recommendation:* *Encourage land uses that minimize impacts to the County's natural resources, particularly the surface waters, coastal areas, groundwater recharge basins, wildlife habitats, and other critical environmental areas.*
  - *Implementation Strategies:*
    - *The County and municipalities should, through their respective development review powers,* ***promote appropriate development by limiting permitted densities in environmentally sensitive areas****, limiting impervious surface coverage, minimizing land disturbance, requiring landscaping and revegetation, and protecting important habitat areas.*
    - *Municipalities should continue to use the State Environmental Quality Review Act, and the National Environmental Policy Act for projects with federal funding or activities, during project reviews as an effective tool to ensure that development activities are respectful of and compatible with environmentally sensitive areas.*
- *Policy Recommendation:* ***Foster the protection and preservation of open space to counterbalance the impact of land development****.*
  - *Implementation Strategy:*
    - *The County and municipalities* ***should preserve, and where appropriate, restore as much open space as possible in order to provide a balance to residential and non-residential development, protect critical natural resources, and generally enhance the quality of life in Nassau County****.*
- *Policy Recommendation:* ***Support efforts by property owners to protect or preserve critical natural resources within estates and large parcels that are planned for development or subdivision****.*
  - *Implementation Strategies:*
    - *Municipal planning boards, local conservation groups and the County Planning Commission should continue to work with owners of estates and other large parcels during the early phases of the development planning process to* ***design subdivisions and/or site plans that preserve as much open space as possible and protect critical resources, while at the same time accommodating the owner's reasonable economic interests in land development****.*
    - *Environmental organizations, such as land trusts and the Nature Conservancy, should work with property owners to inform them about options, such as conservation easements, which can provide tax benefits while permanently protecting land from future development.*
    - *Municipalities and property owners should* ***consider the use of cluster development and/or conservation subdivision techniques as alternatives to the standard subdivision design****, and as a means of protecting critical resources, where these techniques are appropriate.*

- *The County Planning Department, with input from environmental organizations, should prepare a report on environmentally sound and sustainable development techniques which describes alternative land use approaches for minimizing environmental (short and long term) impacts.*

- *Policy Recommendation:* *Promote* ***development plans which are compatible with the capacities of, or mitigate potential impacts on, the infrastructure, roadways and services****.*
  - o *Implementation Strategies:*
    - *Municipalities should work with developers to* ***design land use projects which meet the existing and/or programmed capacity of the water and sewer systems in the County, as well as other infrastructure, adjacent roadways, and services****.*
    - ***Municipalities should evaluate their master plans, zoning codes, and subdivision regulations to determine whether their provisions and policies accurately reflect the community's current approach to land development****.*

Environmental Resources

Environmental resources in Nassau County consist of the water sources (groundwater, surface, coastal); vegetation; open space; fish and wildlife; and air. From a public water supply perspective, the quality of the drinking water delivered to County residents by the various public/private water suppliers satisfies all Federal, State and local standards and is available in sufficient quantity to meet demand. Protection of the County's groundwater supply from various point and non-point pollution sources is required to ensure both future supply and to maintain the excellent quality of the groundwater.

In terms of the other natural resources, Nassau County has experienced a dramatic decrease in vegetated areas, wildlife habitats, and wetlands over the last century as a result of the amount of development activity. However, many of Nassau County's significant vegetation and wildlife areas which remain are protected as publicly or privately-owned parks, preserves and parkways, while other significant vegetation and habitat areas are held in private ownership and may not be protected.

A. Critical Resources

Goal: Protect and preserve the County's critical natural resources, including the wetlands, aquifers, shorelines, water bodies, open space, significant vegetation and nature preserves.

- *Policy Recommendation: Evaluate options for* ***improving the protection of stream corridors, wetlands and other surface waters, and groundwater resources****.*
- *Policy Recommendation: Support options which promote the* ***permanent preservation of open space****, whether by direct or regulatory action.*
  - o *Implementation Strategies:*
    - *Environmental organizations and land trusts should work with property owners to inform them about options, such as conservation easements, which can provide tax benefits while permanently protecting the land from future development.*
    - *Municipalities should consider* ***incorporating provisions into their subdivision and zoning regulations which will encourage the permanent protection of open space and natural resources within development plans, such as clustering; conservation subdivisions; environmental resource overlay zones; transfer of development rights (TDR); and other open space standards****.*

- *<u>Policy Recommendation:</u> Establish an Environmental Fund to protect, preserve and acquire open space and natural resources in the County.*
    - *<u>Implementation Strategy:</u>*
        - *The County and municipalities should make use of the environmental data in the County's Geographic Information System and the Open Space component of the Comprehensive Plan Map, as well as recommendations of the County Open Space Committee, in their decision making regarding properties targeted for protection, preservation and/or acquisition, as well as for any proposed sale of public property.*
- *<u>Policy Recommendation:</u> Inform developers and communities how to plan for development that minimizes environmental impacts while utilizing available infrastructure and satisfying the needs of specific land uses.*
- *<u>Policy Recommendation:</u> Promote coordination between the various non-profit, public, and private environmental groups to maximize efforts focused on preserving, protecting and maintaining the County's natural resources, and informing the public.*
    - *<u>Implementation Strategy:</u>*
        - *The County Planning Department should **continue to work with local environmental groups and municipalities to coordinate and improve the overall effectiveness of their efforts to preserve the County's critical resources** and to inform residents about environmental issues.*
- *<u>Policy Recommendation:</u> Maintain the scenic qualities of the County's natural resources for the enjoyment of residents and visitors.*
    - *<u>Implementation Strategy:</u>*
        - *Municipalities and the County should explore use of the State's Scenic Roads Program (administered through the New York State Department of Environmental Conservation) to designate roads and viewsheds as scenic resources.*

B. <u>Water Resources</u>

<u>Goal:</u> Protect the quality and quantity of Nassau County's groundwater and surface water resources.

- *<u>Policy Recommendation:</u> Enforce and expand regulations to reduce contamination of water bodies and stormwater runoff from non-point sources.*
    - *<u>Implementation Strategy:</u>*
        - *The County and municipalities should consider **preserving or setting aside areas along shorelines, bays, and waterfronts** to accommodate future stormwater control measures and structures.*
- *<u>Policy Recommendation:</u> Encourage coastal communities to prepare Local Waterfront Revitalization Programs and pursue the implementation of their recommendations for the coastal zones.*
    - *<u>Implementation Strategies:</u>*
        - *Coastal municipalities should work closely with the County Planning Department, New York Department of State's Division of Coastal Resources, Federal Office of Coastal*

Resources, local businesses and residents, as well as waterfront property owners to develop Local Waterfront Revitalization Programs (LWRPs). The LWRPs will provide comprehensive plans which identify the community's approach to the appropriate utilization and protection of water resources, redevelopment of sites, public access, harbor and stormwater management, and other issues connected to the waterfronts.

- *The New York Department of State's Division of Coastal Resources, County, local communities, and/or environmental groups should sponsor a seminar or conference to address the importance of protecting waterfront areas while exploring opportunities for redevelopment and tourism business development.*

- *Policy Recommendation: Support initiatives identified in the South Shore Estuary stud(y) which protects the public health and restore beneficial use of water bodies.*
  - *Implementation Strategy:*
    - *The County should work with local communities, the South Shore Estuary Reserve Council and other environmental groups to carry out initiatives identified in the final South Shore Estuary Reserve Comprehensive Plan.*

Transportation

Goal: Maintain the function and improve the capacity of the roadway network to serve a variety of transportation purposes.

- *Policy Recommendation: Identify opportunities for access management in the County, such as, restricting the minimum distance between driveways; controlling the design and location of median openings and driveways; incorporating feeder roads between sites; synchronizing signals; and limiting new signalized intersections.*
  - *Implementation Strategies:*
    - *The County, State and municipalities should r**equire that development projects with frontage on major or collector roads be designed to minimize the number of curb cuts with such roads and create feeder roads or connections between adjacent sites**.*
- *Policy Recommendation: Enhance and improve the visual quality of roadways through landscaping, quality signage and design features.*
  - *Implementation Strategies:*
    - *The County should work with communities to develop inter-municipal roadway guidelines, especially for roadways that serve as municipal boundaries. Such guidelines should be designed to encourage consistency with respect to landscaping (including the appropriate type and size of roadside trees, shrubs and other vegetation), signs, lighting, and other streetscape improvements.*
    - *The County and municipalities should enforce signage and landscaping regulations on a regular basis to maintain and improve the visual character of the roadways and developed properties in Nassau County.*

Goal: Support opportunities for alternative forms of transportation.

- *<u>Policy Recommendation:</u> Identify linkages that can be developed between new and existing bicycle/pedestrian trails or routes, and parks, open space, nature trails, waterfronts, downtowns and transportation facilities.*
    - *<u>Implementation Strategy:</u>*
        - *Municipalities, the County and State should evaluate their own opportunities to provide trails or walkways within public parks, recreational sites and other property.* ***Municipalities should also work with developers to set-aside recreational easements in areas that can be connected to existing trails, parks, waterfronts and downtowns****.*
- *<u>Policy Recommendation:</u> Explore opportunities for the creation of bicycle, pedestrian and horseback trails, and the designation of bicycle routes along appropriate roadways.*
    - *<u>Implementation Strategy:</u>*
        - *The County, State and municipalities should evaluate roadways for their appropriateness as bicycle routes, and incorporate the necessary improvements (shoulders, markings, signage etc.) into their highway capital budgets.*
- *<u>Policy Recommendation:</u> Specify ways to make bicycle and pedestrian travel safer along roadways, and in downtowns and Centers.*
    - *<u>Implementation Strategies:</u>*
        - *Municipalities and the County should apply for potential funding which could be used towards pedestrian and bicycle safety capital improvements in downtowns and Centers. Some of the improvement projects could include: traffic calming around intersections; providing safe crosswalks and intersections; improved timing of signals to allow for pedestrian crossings; restriping or placement of other material in crosswalks; signage, such as "Yield to Pedestrians," "Bike Route;" installation of benches, bicycle racks, and lighting to enhance pedestrian activities; and creating buffers between bike lanes and traffic, where possible.*
        - *The County and municipalities should increase efforts to construct, and* ***require developers to incorporate into projects, sidewalks or walkways to provide safe connections*** *between commercial properties, between residential and commercial areas, as well as between residential areas and parks, preserves and public spaces.*

<u>The Economy</u>

- *<u>Policy Recommendation:</u> Support local planning efforts for coastal areas targeted at revitalizing the waterfronts, creating public access and recreational opportunities, supporting downtown businesses, as well as providing an economic stimulus to the community and tourism activity.*
    - *<u>Implementation Strategy:</u>*
        - *Coastal municipalities should work closely with the County Planning Department, New York Department of State's Division of Coastal Resources, Federal Office of Coastal Resources, local businesses and residents, as well as waterfront property owners, to develop Local Waterfront Revitalization Programs (LWRPs). The LWRPs will provide comprehensive land and water use plans which identify the community's approach to development, redevelopment, public access, and other issues related to waterfronts.*

Culture and Recreation

*Goal: Support **the preservation of the County's historic resources** as key attributes to the quality of life and historic evolution of the region.*

- *Policy Recommendation: Protect the integrity of historic buildings and sites in the County, and preserve them for current and future generations.*
    - *Implementation Strategies:*
        - *The County, State and municipal historic preservation organizations as well as local Landmarks Commissions should work with local officials and property owners to evaluate opportunities to have Historic Districts designated in communities which have concentrations of historic properties united historically or aesthetically.*
        - *The County and municipalities should **consider the historic attributes and significance of buildings and properties** in their review of proposed development activities and/or decision making which would affect historic properties.*

Goal: Provide sufficient parks, preserves, and recreational facilities to serve the current residents and growing segments of the County's population.

- *Policy Recommendation: **Maintain and enhance the parks, preserves, and recreational facilities** in the County for the benefit of all residents, with special consideration to underserved communities, and to support tourism.*
- *Policy Recommendations: **Encourage developers to incorporate permanent open space as an integral part of development projects**, and where possible, provide pedestrian and trail connections to adjacent areas.*
    - *Implementation Strategy:*
        - *Municipalities should also work with developers to set-aside recreational easements, where appropriate, in areas that can be connected to existing public trails, parks, waterfronts and downtowns.*

While the 1999 Master Plan does not incorporate site specific recommendations for properties within the Village of Woodsburgh, the goals, recommendations and strategies including those included above as the most relevant, have been reviewed, and considered in preparation of this Vision Plan.

2003 Master Plan Update

In 2003, Nassau County prepared its first Master Plan update since the adoption of the 1998 Master Plan. Although the recommendations in this update are primarily directed toward actions to be taken on by Nassau County, the recommendations relevant to future actions in the Village are provided below.

Land Use

The Nassau County Planning Commission should revise Nassau County's subdivision regulations to reflect current planning practices, including connectivity, traffic calming, inclusionary zoning, walkability and conservation.

Environmental Resources

Nassau County should coordinate with the Open Space and Parks Advisory Committee ("OSPAC") and other entities to ensure that existing tools for the preservation and protection of Open Space are *used effectively. The Nassau County Planning Commission should work with OSPAC to develop criteria to evaluate properties for acquisition.*

Culture and Recreation

Nassau County should additionally promote its wide range of cultural, historic and retail destinations to maximize the economic strength of its tourism industry.

The intentions of these recommendations have been incorporated into this Vision Plan.

2010 Draft Master Plan

The Nassau County Planning Department 2010 Master Plan remains in draft form. This Master Plan was drafted immediately following the 2008 national economic recession and was created to address the economic problems the County was facing during a period of high unemployment rates and stagnant economic growth. In order to address the problems that residents and business owners were facing at that time, as well as to stimulate sustainable growth by 2030, the 2010 Draft Master Plan called for a paradigm shift from all levels of government, the private sector, not-for-profits and County residents in hopes of achieving the following:

- *the creation of sustainable high-value jobs in targeted growth areas;*
- *controlling the increases in the cost of government;*
- *new housing choices and availability for the County's young workforce and seniors;*
- *the revitalization and reinvestment in downtowns and underutilized commercial and industrial areas;*
- *streamlining and expediting the entire land use regulatory process;*
- *an increase in public transit infrastructure and usage;*
- *selective and affordable preservation of remaining open space and environmentally valuable areas; and,*
- *energy conservation and affordable local renewable energy generation.*

Relevant policies and goals presented in the 2010 Draft Master Plan that pertain to future actions in Woodsburgh are provided below.

Chapter 3 – Land Use

Policy 3: Protect and maintain economically viable commercial land uses and residential neighborhoods by directing future development to targeted growth areas.

Year 2030 Goals
Single-Family Neighborhoods and Open Space: ***Increase the total land area designated as open space, parks, natural area or preserves by 1,000 acres*** *(or 1/5 of remaining unprotected open space and environmentally valuable lands).*

A discussion of preservation strategies for Nassau County's private golf courses is provided within the land use chapter of the 2010 Draft Master Plan. Specifically, pages 52 and 53 of the 2010 Draft Master Plan **note the vulnerability of golf courses due to limited availability of vacant land in Nassau County**. In order to preserve remaining open space within the County, while also seeking to revitalize existing downtowns, the Master Plan recommends reviewing the viability of transferring the development potential of golf course properties to existing downtown centers. According to the 2010 Draft Master Plan:

"The creation of a Transfer-of-Development Rights (TDR) program should be explored by municipalities that have identified golf courses within their boundaries, as well as a well-defined growth/downtown center. A market-funded preservation of open space and downtown investment can be made possible by the transfer ("sale") of a golf course's unused development credits ("seller") to a downtown or growth area receiving district ("purchaser")".

The fiscal advantage of preserving golf courses through a TDR program, as noted in the Draft Master Plan is that *"the assessed value of the preservation parcel is transferred to a receiving site along with the purchased development credit. This prevents the reduction of the local property tax base when property is preserved through other measures (i.e. government/not-for-profit acquisition)".*

<u>Chapter 4 – Infrastructure: Retrofitting Nassau</u>

Although the specific policies and 2030 goals set forth Chapter 4 of the 2010 Draft Master Plan are not specific to Woodsburgh, there are notable recommendations in this chapter relating to landscaping and flooding that are pertinent to the Village. The following landscaping findings and recommendations presented in Chapter 4 that reduce water use, reduce energy demand and mitigate flooding include:

- *Pervious surfaces that allow stormwater infiltration are beneficial to landscaping, help to mitigate local and large-scale flooding and reduce peak runoff to streams, wetlands and larger water bodies.*
- *Reduction in pavement areas reduces heat buildup and stormwater runoff.*
- *Reduction in lawn area and preservation of woodlands reduces the need for mowing and chemical use.*
- *Reduction in fertilizer use, namely nitrogen, reduces lawn growth rates and the need for excessive mowing.*
- *Maintaining longer grass blades to out-compete lawn weeds and conserve soil moisture reduces maintenance cost and use of fuel fired power equipment.*
- *Shading of walkways and southern exposure of buildings with deciduous trees set an appropriate distance from building facades, foundations and pavement surfaces significantly reduces heating and cooling costs.*
- *Planting native and drought resistant plant species that are non-invasive allow greater success of material and reduction in maintenance.*
- *Collecting roof runoff for landscape irrigation purposes reduces run-off and conserves water.*
- *Mandating Ecological Pest Management (EPM) that prohibit the use of chemical lawn treatments that have adverse impacts on wildlife and water quality in favor of organic practices.*

This chapter also recommends implementation of a suburban reforestation program that will reduce heat island effect, energy use and enhance aesthetics and quality of life. Specifically, "*effective site selection is essential since the primary goal is to increase the rate of plant survival and the likelihood that planted species will attain their optimal size and provide the benefits intended. Programs headed by individual towns and villages, the County and other organizations should be coordinated*".

The final section of the 2010 Draft Master Plan is the Action Plan Matrix, which provides the recommendations or "Actions" presented in the body of the Master Plan, timeframes and responsible entities. The following Actions relate to the future of the Village:

Land Use:

- *Study use of Transfer of Development Rights (TDR) to protect groundwater and direct future development to downtowns and designated growth areas* (short-term, 2-5 years to be implemented by the County and municipalities)
- *Identify parcels that can be designated for open space* (short-term, 2-5 years to be implemented by the County and municipalities)
- *Sustain in perpetuity the County's open space acquisition program through additional funding. Establish a dedicated source of County open space acquisition funding* (short-term, 2-5 years to be implemented by the County)
- *Work with municipalities to encourage development of identified parcels as community open space* (short-term, 2-5 years, and medium-term, 5-10 years, to be implemented by the County)

Transportation:

- *Require traffic plans for congested areas to minimize loss of capacity during construction* (short-term, 2-5 years to be implemented by the County, New York State Department of Transportation and municipalities)

Environment and Climate Change:

- *Initiate "Greening Nassau County," a new interdepartmental and municipal strategy to plant 40,000 new trees by 2030 (Identify desired species and sources of material and incentives for private landowner)* (short-term, medium-term and long-term to be implemented by the County and municipalities).

Although still in draft form, the intention of these policies, goals and action items have been incorporated into this Vision Plan.

2001 Nassau County Open Space Plan

Nassau County Planning Commission, on March 13, 2001, adopted the *Nassau County Open Space Plan* which was prepared in order to identify existing open space resources in Nassau County, highlight important natural resources, identify recommendations, location potential open space for acquisition, and provide techniques and funding sources to provide a framework for how a comprehensive Open Space Program could be established in Nassau County. An existing Open Space Inventory was prepared as a reference for the County when determining potential open space locations, environmental projects, parks and preserves, trail connections and other associated activities. This plan was reviewed to determine whether the County has established any land use or other recommendations specific to the Village of Woodsburgh.

According to Figure 1C "Existing Open Space – Southwest Quadrant", the Rockaway Hunting Club and the Woodmere Club within and adjacent to the Village are designated as "Golf Course" properties, and the Woodmere Dock along the southeastern boundary of Woodsburgh (within the jurisdiction of the Village of Hewlett Neck) is designated as "Marinas and Yacht Club", "Waterfronts and Beaches" and "Village/Town/City Park". The islands and marshes in West Hempstead Bay in the near the Village are considered Village/Town/City Preserve areas and there is a "Bird Sanctuary/Important Bird Area" in the vicinity of these islands and marshes, according to Figure 1C of the Open Space Plan. The Open Space Plan notes the following:

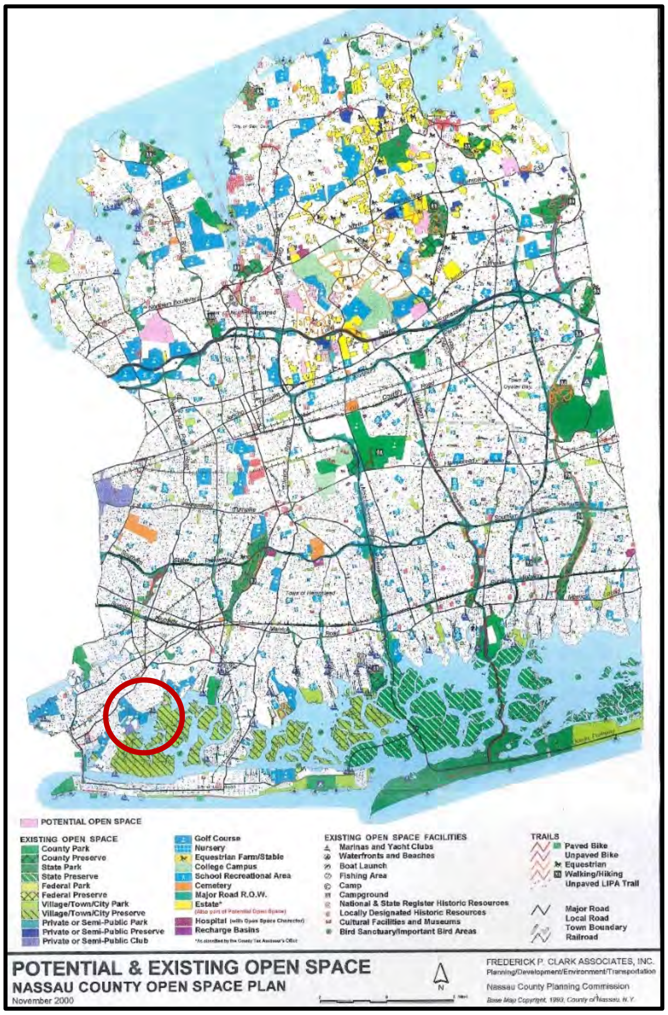
Parks, Preserves, Golf Courses, Clubs, Camps, Campgrounds and other Recreation Areas:

"The parks/preserves contain features such as trails, wetlands, bird sanctuaries, fishing, beaches, and boat launch areas which were also mapped as existing open space resources on the Existing Open Space Map, Figure 1.

Golf courses, clubs (hunting, fishing, horse racing), camps and campgrounds have also been identified on the Existing Open Space Map. Some of these resources may be privately owned. However, their size and vegetated nature provide an open space amenity which is visually accessible from public areas."

Figure 5 of the Open Space Plan indicates that the southern half of the Village of Woodsburgh is considered an "Important Bird Area" since the Village is immediately north of West Hempstead Bay. Figure 5 is based on the National Audubon Society and American Bird Conservancy, which have identified over 500 IBAs, as previously discussed. Figure 6 "Significant Habitats & Rare Species" depicts areas south of the Village, as well as the Woodmere Channel within the Village as part of the "Hempstead Habitat Complex". Figure 6 also portrays the northern portion of the Woodmere Channel within the Village, immediately south of Railroad Avenue, as a designated "Sensitive Area – Historical Species". West Hempstead Bay is also identified as a "New York State Department of State Significant Coastal Fish & Wildlife Habitat" on Figure 6.

Figure 15 "Potential & Existing Open Space" does not identify additional potential open space within the Village's boundaries. However, a small portion of land immediately southwest of the Village (salt marsh) within the Village of Lawrence is noted as "Potential Open Space".



Chapter VI of the Open Space Plan provides techniques and funding sources for acquiring additional open space and preserving existing open space in Nassau County. The following techniques are an integral part of open space preservation that are relevant to the Village:

<u>Ways to Achieve Open Space Objectives:</u>

- Conservation Easements – *a deed restriction which limits the right of property owners to use certain portions of their land in some way which would preserve or protect the open space resource.*

- Transfer of Development Rights (TDR) – *the development rights of a particular property are transferred to and added onto the development rights of a property located in another area while the original property is permanently precluded from development. TDR does not alter the total amount of development that can occur in a region or country. Rather, TDR redistributes development so as to protect resource areas and open space in areas which are recognized as being the most important to preserve.*

<u>Land Use Planning Tools and Regulations:</u>

- Large Lot Zoning
- Setback and Landscape Requirements
- Tree Preservation Ordinances
- Required Reservations of Land
- Site Plan Review
- Conservation Subdivision/Clustering
- Planned Unit Development (PUD) Zoning
- Bonus/Incentive Zoning
- Overlay Zones

<u>Other Creative Approaches:</u>

- Public/Private Agreements
- Management/Conservation Agreements
- Tax Incentives/Abatements

These techniques and figures have been reviewed, and any that are relevant in the Village have been incorporated in the Village's goals and objectives outlined in **Chapter IV.**

2. Existing Land Use Patterns

The Village is mainly comprised of residential development, aside from the Woodmere Club and the Rockaway Hunting Club, both of which are the main sources of open space and recreation within the Village. The Village's outdoor recreational needs have been met historically by private country clubs within the Village and the adjoining communities. Presently, in the Village, the only recreational opportunities are private golf courses and a small park containing the Culluloo Telewanna monument. Just outside of the Village, there are opportunities for recreation, including water-related recreation such as docks and private yacht clubs.

Figure 11 illustrates the existing land use pattern within the Village of Woodsburgh. Most of the housing units in the Village are single-family residences, with the exception of the multi-family housing (Crestwood Co-operative Apartments and The Mayfair) fronting on Broadway in the northern portion of the Village.

Chapter 150 of the Village of Woodsburgh Zoning Code permits the following uses in all Village zoning districts:

- Single-family residence or housekeeping unit
- Office of a physician, surgeon, dentist, architect, engineer or lawyer, provided that the occupational facility is in the dwelling where the practitioner lives
- Libraries or public museums
- Schools and places of worship
- Private docks, private boathouses and private bathhouses
- Farming, truck gardening or nurseries, provided that no commercial greenhouses are used in connection with same
- Accessory uses associated with the above uses, including a private garage, greenhouse, garden house or professional sign of the practitioner
- Village police purposes

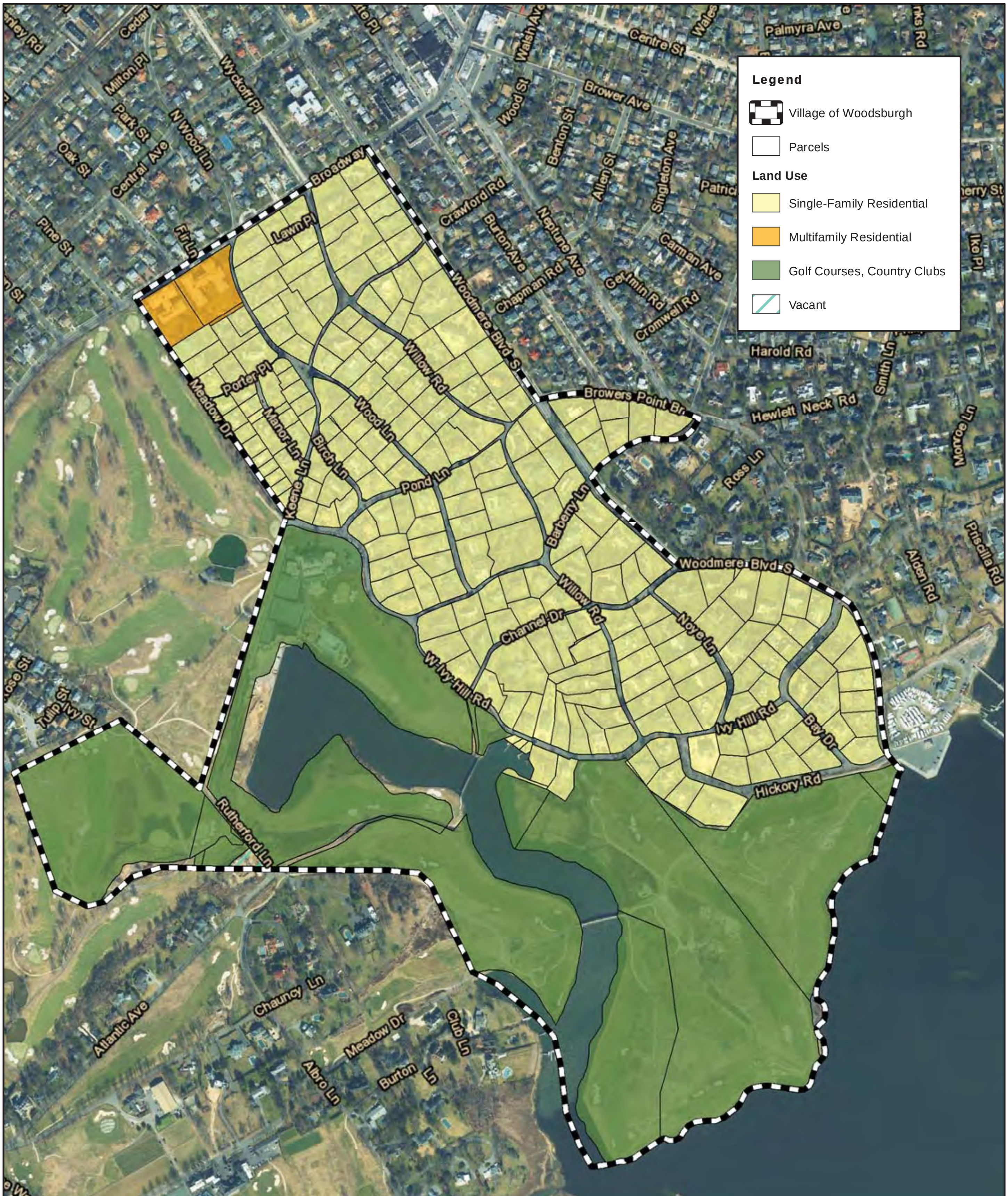


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FIGURE 11
EXISTING LAND USE

Source: Nassau County GIS, ESRI World Transportation, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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Table 14 lists the acreages of the land uses within the Village[13]. The land use categories were selected based on the types of uses that are identified in the Village's zoning regulations and the land use categories set forth in the tax assessment roll.

Table 14 - Village of Woodsburgh Land Use			
Land Use	**Parcels**	**Acres**	**% of Total**
Vacant	1	0.3[1]	0.1
Single Family Residential	252	114	50.2
Multifamily Residential	2	3.3	1.5
Private Golf Country Clubs	13	109.5	48.2
Total Parcel Acreage		**227.1**	100.00
Total Area of Village		**267.7**	
Source: Nassau County GIS *Any errors due to rounding.* [1]Area of parcel located within the Village boundary			

Beyond the Village boundaries, land uses primarily consist of recreation/open space and single-family residences (to the east and west). Northeast and northwest of the Village, along Broadway and Central Avenue, land uses are mixed with commercial (dining, retail and office), single-family residential, multi-family residential, institutional (religious and educational), community services (fire department and post office) and municipal parking. Beyond these mixed-use corridors is the Long Island Rail Road (LIRR). General land use and development patterns in the Five Towns consist of concentrated mixed-use corridors (Broadway and Central Avenue) situated near the LIRR, with higher density residential development close to these roadways, extending to less dense residential development as one moves south of these mixed-use areas. Along the waterfront, land use patterns transition to single-family residences on larger lots, private communities and recreation/open space.

Currently, there aren't any water dependent uses (e.g., marina, boat dock, waterfront park) within the Village's boundaries. As part of the public survey, community members were asked if the water dependent uses should be included in the Village. Approximately 30 percent of respondents said yes, 43 percent of respondents said no, and 30 percent of respondents replied unsure.

Other responses included uses would be supported if they were available to Village residents only; the shoreline should not be altered as it will impact flooding; the Woodmere dock should be cleaned up and should be properly maintained; and the golf course property along the Woodmere Channel should be used as a private park/nature preserve.

For those who answered yes or unsure (73 of 130 participants), participants were asked which types of water dependent uses they would like to see in the Village. The responses included the following:

- Waterfront park (69%)
- Boat dock (49%)
- Kayak/canoe launch (49%)
- Marina (34%)
- Fishing pier (14%)
- Short term parking for boaters (3%)

[13] Note that the land use evaluation includes the land area for real property tax parcels within the Village (227.1 acres) while the total area of the Village including wetlands and waterbodies is approximately 267.7 acres. The difference between the two estimates also represents all land area within local streets and rights-of-way.

Currently in the Village, there are 300 housing units which are oriented in a conventional subdivision design. As per 7-738 of New York State Village Law, a "cluster development" is a subdivision in which the applicable zoning local law is modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands. To date, the Village Code does not contain cluster subdivision regulations.

3. Existing Zoning Regulations

The purpose of zoning is to promote the orderly growth, development and redevelopment of a municipality in order to protect the health, safety, and general welfare of its people. Zoning reflects public goals and interests through standards developed by research, planning, and public outreach. It provides the means by which to implement a comprehensive land use strategy that reflects the community's vision for the future and the sensible use of land based on established planning practices. Specifically, zoning promotes the utilization of land for the purposes it is most suited for, and strives to protect and enhance the established character, aesthetics, land values, economic conditions, and environmental qualities of the community. It encourages the social and economic well-being of its residents and regulates land use to promote compatibility between adjacent land uses and other zoning districts. As noted above, the Village contains six zoning districts, all of which are residentially zoned districts. These zoning districts are as follows:

- Residence 2A
- Residence 1A
- Residence A
- Residence B
- Residence C
- Residence D

The locations of these zoning districts within the Village are illustrated in **Figure 12.** The Residence 2A and Residence 1A zoning districts are designated for the portions of the Woodmere Club and the Rockaway Club situated in the Village, such that the entirety of the Rockaway Club is in the Residence 2A district and the majority of the Woodmere Club is in the Residence 1A zoning district (less than an acre of the Woodmere Club is in the Residence 2A zoning district). The dimensional regulations for the Village zoning districts are provided in **Table 15** below.

Table 15 - Dimensional Regulations for the Village of Woodsburgh Zoning Districts							
Zoning District	**Minimum Lot Size (SF)**	**Maximum Height (feet/stories)[1]**	**Minimum Street Frontage**	**Minimum Front Yard Setback (feet)[3]**	**Minimum Side Yard Setback (feet)[4]**	**Minimum Rear Yard Setback (feet)**	**Minimum Floor Area (SF)**
Residence 2A	87,120	25/2 ½	200[2]	70	40	50	2,400
Residence 1A	43,560	25/2 ½	150[2]	60	30	40	2,400
Residence A	20,000	25/2 ½	100	50	20	25	2,400
Residence B	14,500	25/2 ½	100	35	15	25	2,000
Residence C	12,000	25/2 ½	100	20	15	20	1,600
Residence D	12,000	25/2 ½	100	25	15	25	1,600

[1]The maximum height of any building or any part thereof shall be 28 feet in the case of a gable, hip or gambrel roof, or 25 feet in the case of all other roofs, or 2 1/2 stories, whichever is less. The minimum height is 2 stories or 20 feet, whichever is greater.
[2]One hundred feet on turnarounds.
[3]In case of a corner lot, a front yard shall be required on each street upon which the lot abuts. The interior angles formed by the intersection of the lot's lines with the street line shall not be less than 75° for the entire distance from the street lines to the front yard setback line or lines.
[4]Two side yards must be provided on every lot.

Figure 13 presents the tax parcel sizes throughout the Village.

The provisions bulk and dimensional regulations for each of the Village zoning districts can be found in 150 Attachment 1 of the Village Code, as well as in individual Articles of Chapter 150.

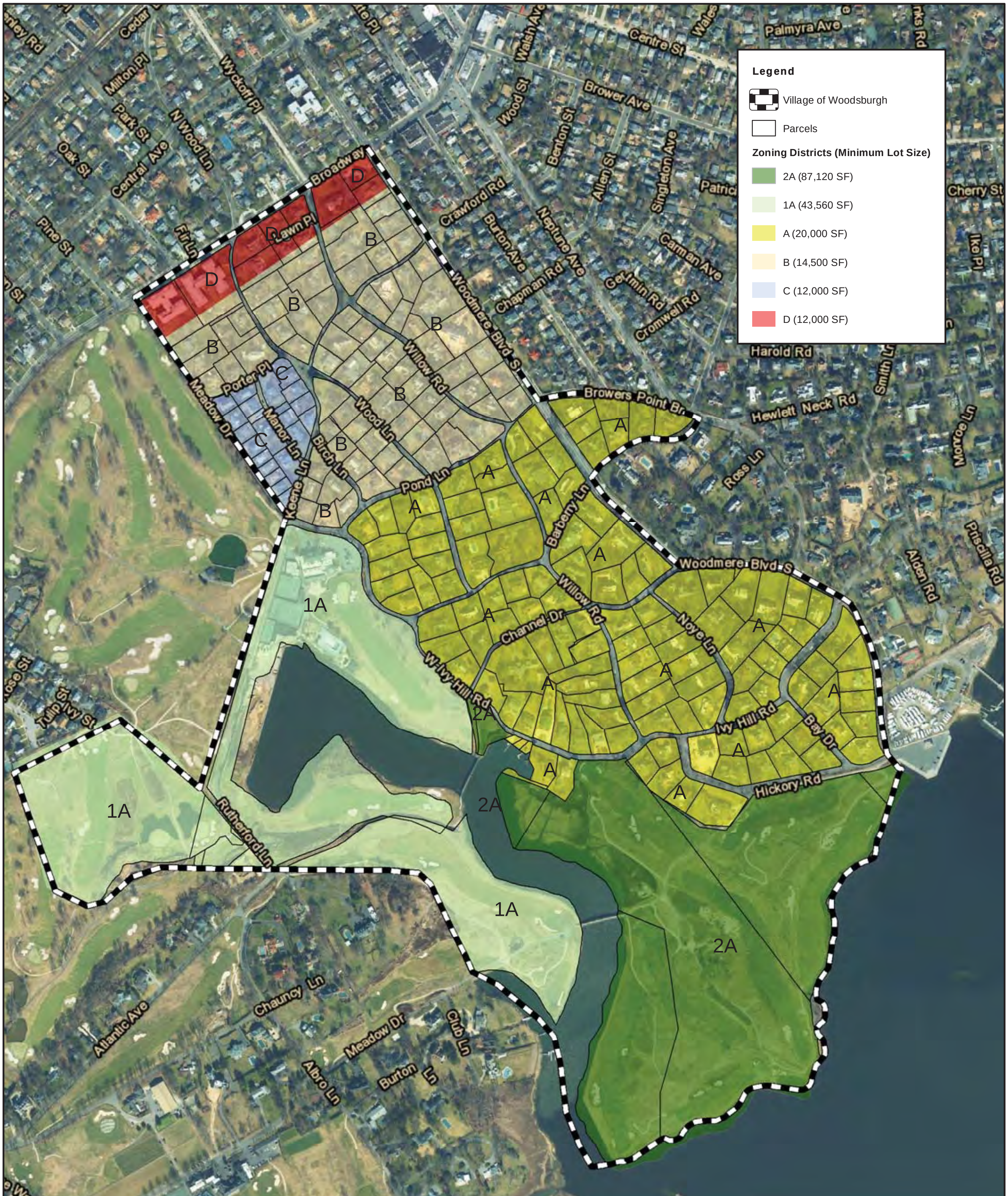

FIGURE 12
ZONING MAP

Source: Nassau County GIS, NYS Orthoimagery Program 2016
Scale: 1 inch = 700 feet

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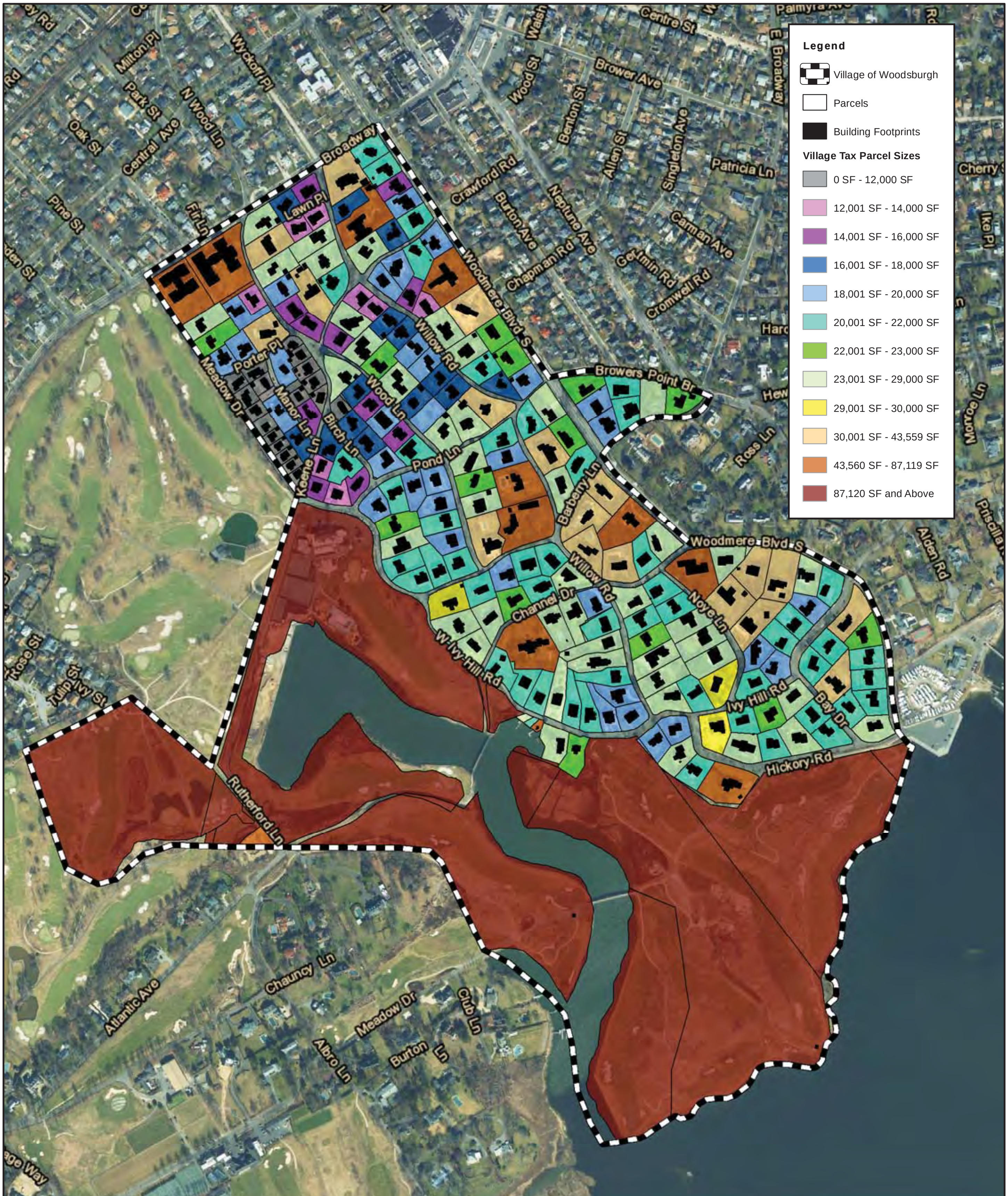

FIGURE 13
EXISTING TAX PARCEL SIZES

Source: Nassau County GIS, NYS Orthoimagery Program 2016, ESRI World Transportation
Scale: 1 inch = 700 feet

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Each zoning district article provides a maximum permitted floor area with calculations; however, the calculations for maximum permitted floor area are the same for all zoning districts, as provided in **Table 16**.

Table 16 - Maximum Permitted Floor Area	
Lot Size (SF)	**Maximum Permitted Floor Area (SF)**
0 to 12,000	3,000
12,001 to 14,000	3,000, plus 0.26 times lot area over 12,000
14,001 to 16,000	3,000, plus 0.25 times lot area over 12,000
16,001 to 18,000	3,000, plus 0.24 times lot area over 12,000
18,001 to 20,000	3,000, plus 0.23 times lot area over 12,000
20,001 to 22,000	3,000, plus 0.22 times lot area over 12,000
22,001 to 23,000	3,000, plus 0.21 times lot area over 12,000
23,001 to 29,000	3,000, plus 0.20 times lot area over 12,000
29,001 to 30,000	3,000, plus 0.19 times lot area over 12,000
30,001 and above	3,000, plus 0.18 times lot area over 12,000

Based on these calculations, maximum home sizes for each district were estimated (see **Table 17**).

Table 17 - Maximum Permitted Floor Area by Zoning District			
Zoning District	**Minimum Lot Area by Zoning District (SF)**	**Calculation**	**Maximum Home Size/Maximum Floor Area by Zoning District (SF)**
Residence 2A	87,120	3,000, plus 0.18 times lot area over 12,000	16,522
Residence 1A	43,560	3,000, plus 0.18 times lot area over 12,000	8,681
Residence A	20,000	3,000, plus 0.23 times lot area over 12,000	4,840
Residence B	14,500	3,000, plus 0.25 times lot area over 12,000	3,625
Residence C	12,000	--	3,000
Residence D	12,000	--	3,000

Additional dimensional regulations and specific land and use regulations are contained in Article VI of Chapter 150 of the Village Code. This article contains the maximum permitted lot coverage for all structures (including accessory structures) for each zoning district, as follows:

- Residence 2A, Residence 1A, Residence A and Residence B: 15 percent maximum lot coverage
- Residence C and Residence D: 20 percent maximum lot coverage

Based on the maximum lot coverage percentage and the minimum lot area per district, maximum lot coverage for each district is as follows:

- Residence 2A: 13,068 SF (87,120 SF x 0.15)
- Residence 1A: 6,534 SF (43,560 SF x 0.15)
- Residence A: 3,000 SF (20,000 SF x 0.15)
- Residence B: 2,175 SF (14,500 SF x 0.15)
- Residence C: 2,400 SF (12,000 SF x 0.20)
- Residence D: 2,400 SF (12,000 SF x 0.20)

In addition, Article VI provides maximum permitted impervious site coverage, as provided in **Table 18**.

Table 18 - Maximum Permitted Impervious Site Coverage		
Lot Area (SF)	Maximum Permitted Impervious Coverage	
	For Base Lot Area (SF)[1]	For Lot Area Over Base Lot Area (percent)
0 to 4,000	0	55
4,001 to 6,000	2,200	35
6,001 to 12,000	2,900	27
12,001 to 16,000	4,520	26
16,001 to 20,000	5,560	25
20,001 to 30,000	6,560	24
30,001 to 40,000	8,960	23
40,001 and larger	11,260	22

[1]"Base lot area" is the minimum end of the lot area range in the "Lot Area" column.

All of above referenced regulations (i.e., minimum lot area, setbacks, maximum permitted floor area and maximum permitted lot coverage) dictate how large a home/structure can be and where it can be located on any lot based on the applicable zoning district. For any split zoned parcels, §150-41 of the Village Code notes that the regulations of the most highly restricted district with apply to any lot in two or more zoning districts.

Chapter 131 of the Village Code titled Subdivision of Land, provides general requirements for subdivision designs for preservation of natural features, new streets, improvements (street, drainage utilities, etc.), lots, reservations and easements in Article V.

Chapter 131 also provides general regulations for street improvements, drainage improvements, underground utilities, monuments, traffic control and street signs, fencing, streetlighting, sewage and water, street trees, fire alarms and school bus pickup areas. A discussion of street standards is provided in the TRANSPORTATION section of this Vision Plan. Any new subdivision proposed within the Village must also adhere to the general lot regulations in Chapter 131 such as lot arrangement, driveways, lot dimensions, access from collector streets, double-frontage lots, water bodies, access across a water course, steep slopes and easements and subdivision of land in two or more zoning districts.

As noted throughout this Vision Plan, a major goal of the Village is to protect natural areas and features within Woodsburgh. Therefore, §131-21.B, preservation of natural features is an essential aspect of the Village Code, which states:

A. *Land to be subdivided shall be designed in reasonable conformity with existing topography in order to minimize grading, cut and fill and to retain, insofar as possible, the natural contours, to limit stormwater runoff and to conserve the natural vegetative cover and soil. No tree, topsoil or excavated material shall be removed from its natural position except where necessary and incidental to the improvement of lots and the construction of streets and related facilities in accordance with the approved plan. Topsoil shall be restored to a depth of at least six inches and properly seeded and fertilized in those disturbed areas not occupied by buildings or structures.*

B. Existing natural features which are of ecological, aesthetic or scenic value to residential development or to the village as a whole, such as wetlands, watercourses, water bodies, rock formations, stands of trees, historic spots and similar irreplaceable assets, shall be preserved, *insofar as possible, through harmonious design of the subdivision, and, where appropriate, the Planning Board may require the inclusion of such features in permanent reservations.*

There are also certain provisions for reservations and easements for any proposed subdivision within the Village including park reservations, widening or realignment of existing streets, utility and drainage easements, slope easements, sight easements and pedestrian access easements. As there are few opportunities for parks and recreation in the Village, the park reservation aspect of Chapter 131 is essential for any potential subdivision in the Village. Section 131-25.A provides the following requirements:

1. *General standards. The Planning Board may require that land be reserved within subdivisions for a park or parks suitably located for playground or other recreational purposes. Each reservation shall be of suitable size, dimensions, topography and general character and shall have adequate street access for the particular purpose or purposes envisioned by the Planning Board. The area shall be shown and marked on the plat as "reserved for park purposes."*
2. *Minimum size. Area for parks shall be of reasonable size for neighborhood playgrounds or other recreational uses. Not more than 10% of the area of the subdivision shall be set aside for such purposes.*
3. *Ownership of park area. The ownership of reservations for park purposes shall be clearly indicated on the plat and established in a manner satisfactory to the Planning Board so as to assure their proper future continuation and maintenance.*
4. *Cash payment in lieu of reservation. Where the Planning Board determines that a suitable park or parks of adequate size cannot be properly located in a subdivision or where such a reservation is otherwise not appropriate or practical, the Board may require, as a condition to approval of any such plat, a payment to the village of a sum to be determined by the Planning Board. Moneys collected in such fashion shall constitute a trust fund, which shall be utilized only for park, playground or recreation purposes, including the acquisition of land, or for historic preservation purposes or otherwise as provided by law. To the extent that Subdivision 1 of § 7-730 of the Village Law may be inconsistent with this section, said provision of the Village Law is superseded by this section.*

During the public participation process, the community expressed that low density residential zoning was preferred if any new development were to occur to minimize the number of new homes and related impacts related to loss of open space, recreational use, changes in viewshed and loss of important environmental resources.

D. HISTORIC AND SCENIC RESOURCES

The character and charm of the Village of Woodsburgh is based to a large extent on its unique history. “History” can be defined as a “narrative” or “story” of events about a place. Woodsburgh’s early history is a testament to the unique environment upon which it thrived. Historic buildings and structures are remnants of past events that continue to provide the community with its own unique sense of character. In order to preserve the Village’s unique sense of place, those resources, and the history these resources embody, need to be identified. It is a primary goal of this Plan to preserve and protect the cultural and historic resources which reinforce the Village’s unique identity, support its scenic character and are a source of pride for all Village citizens.

Currently, the Village does not have any locally designated historic districts or landmarks. The New York State and National Register of Historic Places contain buildings, structures, districts, objects and sites significant to the history, architecture, archaeology and culture of the state or nation. However, these databases do not take into account resources that possess special character or historic or aesthetic interest of value to local communities. When asked if the community would be in favor of adopting historic regulations to preserve locally historic buildings approximately 78 percent supported the idea. This section below encapsulates existing archaeologically sensitive areas, historic resources listed on the State and National Registers of Historic Places, scenic views and neighborhood character of the Village of Woodsburgh.

1. Archaeologically Sensitive Areas

The New York State Historic Preservation Office's (SHPO) Cultural Resources Information System (CRIS) identifies areas that are "archaeologically sensitive". These areas are generally within a certain radius of a known archaeological site or an area likely to have supported pre-historic homesites. The Village as a whole is identified as an "archeologically sensitive" area (see **Figure 14**). The location of the Village along the just north of West Hempstead Bay, would have been a major resource used by prehistoric groups. The designation of archaeological sensitivity in CRIS does not definitively determine that the Village contain archaeological resources, only that locations warrant on-site investigation. Consultation with SHPO should occur for any projects proposed within the Village to ensure that the developments will not impact significant archaeological resources.

2. National Register of Historic Places

According to the CRIS database, there are no designated or eligible historic districts within the Village's boundaries. However, there are four National Register eligible resources within the Village. Based on review of SHPO's CRIS database in July 2019, the following eligible resources are within the Village:

- 45 Willow Road
- 75 Willow Road
- 76 Wood Lane
- 127 Willow Road

These residences are considered eligible for inclusion in the National Register of Historic Places under Criterion C, as these structures "*that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction*".[14]

There are two National Register of Historic Places eligible Historic Districts that border the Village of Woodsburgh, as further discussed below and depicted in **Figure 14.**

Rockaway Hunt Historic District

Immediately south and west of the Village is the National Register of Historic Places eligible Rockaway Hunt Historic District. The district is roughly bounded by Barret Road and Atlantic Avenue to the northwest, the Woodmere Club to the northeast, marshland and the intersection of Causeway Road and Sage Avenue to the southeast, and a mix of marshland and the Lawrence Country Club to the southwest. This historic district is strictly limited to the residential dwellings within the district boundary and has a period of significance between 1878 through 1967. These dwellings embody various architectural styles and forms such as Colonial Revival, Tudor Revival, Spanish Revival and Mid-Century Modern, and were constructed by locally and nationally renowned architects. According to the resource evaluation form dated April 23, 2018 (see **Appendix B**), the Rockaway Hunt Historic District has been determined eligible for listing in the National Register of Historic Places due to the following:

[14] https://parks.ny.gov/shpo/national-register/documents/NRStateRegisterCriteriaforEvaluation.pdf

> *The Rockaway Hunt Historic District is eligible for inclusion on the National Register of Historic Places (NRHP) under Criterion A in the area of Community Planning and Development for its association with the initial development of the Village of Lawrence as well as for its planned layout as an exclusive speculative development along winding drives. The district is also eligible for inclusion on the NRHP under Criterion C as a unique ensemble of elaborate 19th-20th century dwellings of a number of architectural styles designed by a number of both locally and nationally important architects. The Period of Significance is 1878 through 1967. The Period of Significance begins with the establishment of the Rockaway Hunting Club in 1878, a central fixture of this area for almost 140 years, as well as with the first confirmed dwelling date of construction. Additionally, the Period of Significance runs up through the 50 year mark in 1967 as the club is still in use today and remains an important gathering place within this upscale neighborhood. Individual dwellings also continued to be constructed on subdivided lots throughout this period.*

Additional information regarding the district's eligibility for inclusion on the National Register of Historic Places can be found in **Appendix B**.

Flower Street Historic District

Northwest of the westernmost Village Boundary is the National Register of Historic Places eligible Flower Streets Historic District. This historic district is roughly bounded by Broadway to the north, a residential development and the Woodmere Club to the northeast, and Copperbeech Lane to the southwest. Of the 39 residential dwellings within the historic district boundary, two dwellings are considered noncontributing properties due to significant alterations. Residences that are contributing structures to the historic district represent Colonial Revival and Gothic Revival architectural forms. According to the resource evaluation form dated October 26, 2017 (see **Appendix B**), the Flower Streets Historic District has been determined eligible for listing in the National Register of Historic Places for the following reasons:

> *The potential Flower Streets Historic District is eligible for the NRHP under Criterion A in Community Planning/Development as a planned neighborhood that reflects the patterns of development of southern Nassau County, Long Island, as an early automobile suburb. The potential district is also eligible under Criterion C in Architecture as an ensemble of twentieth-century dwellings that embody Colonial Revival and Gothic Revival modifications of the foursquare form. The district retains its integrity of location, setting, design, materials, workmanship, feeling, and association Consultation with OPRHP will be required prior to redevelopment of the Rockaway Hunting Club and the Woodmere Club.*

Additional information regarding the district's eligibility for inclusion on the National Register of Historic Places can be found in **Appendix B**.

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FIGURE 14
CULTURAL RESOURCES

Source: ESRI Web Mapping Service;
NYS DEC cris.parks.ny.gov
Scale: 1 inch = 700 feet

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Vision Plan

3. Visual Resources

Views of the overall Village are of winding and narrow roads, residential properties, landscaped vegetation, trees, lush green space associated with the golf course properties and expansive views of the Woodmere Channel and West Hempstead Bay. Specifically, views from properties along Meadow Drive and Ivy Hill Road include the expanse of green recreationally used golf course property, as these roadways border the Woodmere Club and the Rockaway Club and views along Railroad Avenue.

During preparation of the Vision Plan, a public survey was administered, and residents and property owners were asked to identify the most scenic views within the Village. The locations that were named the most significant scenic resources include:

- Meadow Drive looking toward the golf course (82.2%);
- Ivy Road looking toward the Woodmere Channel (76.6%);
- Meadow Drive looking toward the Woodmere Clubhouse (61.7%);
- Keene Lane/Railroad Avenue looking toward the Woodmere Channel (57%);
- Hickory Road looking toward the Bay (57%);
- Broadway looking toward the golf course (53.3%);
- Keen Lane/Wood Lane looking toward the triangular pocket park containing the Culluloo Telewana monument (53.3%); and
- The Woodmere Boulevard corridor (48.6%).

Other responses from the public survey included Pond Lane/Ivy Hill Road looking toward the golf course and the Woodmere Channel, and views from the Woodmere dock.

During the public open house, community members we asked to identify their favorite places to enjoy their community or places they value. Responses included:

- Dock (just outside of the Village)
- Views along Ivy Hill Road across from the golf course
- Views from Barberry Lane along Ivy Hill Road
- Walking and jogging along Railroad Avenue
- Views of the Woodmere Channel from the Woodmere Club
- Views along Meadow Drive

These resources help define the community identity unique to the Village of Woodsburgh. There are many of these distinct places, but those that stand out the most to community residents are noted below and **Figure 15** illustrates these locations within the Village.

Photograph 1: View of the Woodmere Club from Meadow Drive.

Photograph 2: View of Meadow Drive.

Photograph 3: View of Railroad Avenue.

Photograph 4: View of Ivy Hill Road.

Photograph 5: View toward the Woodmere Channel from Ivy Hill Road.

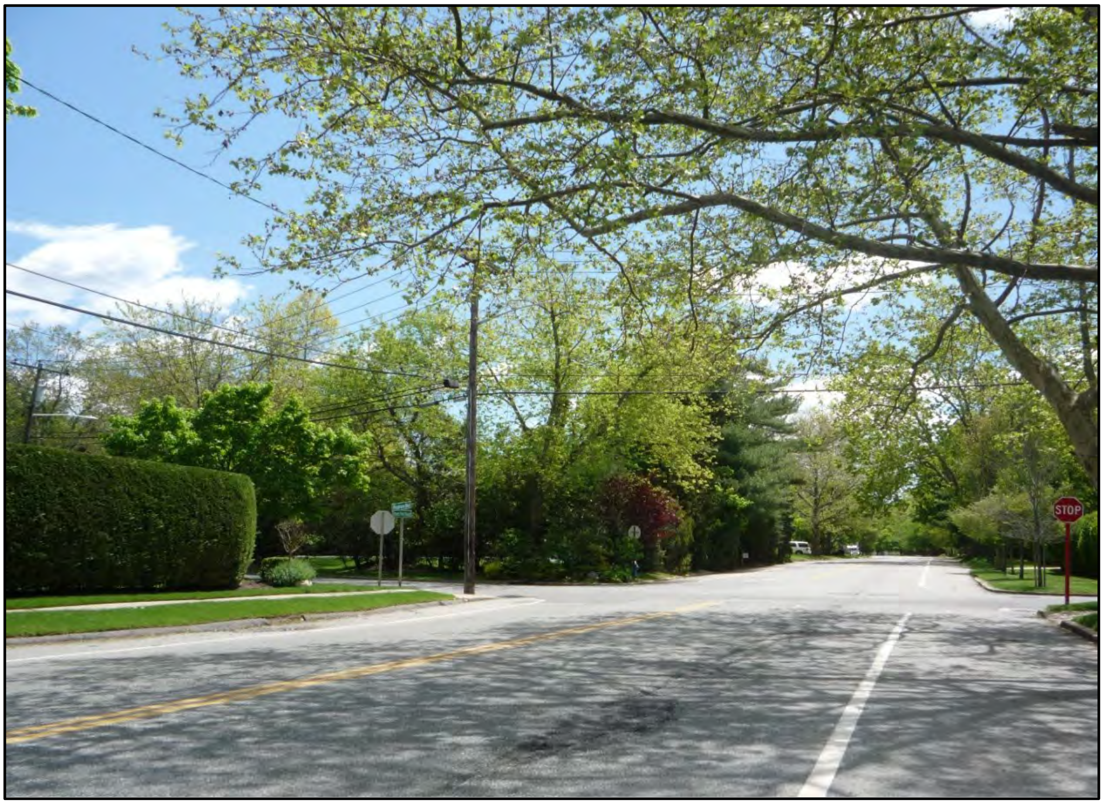
Photograph 6: View of the Woodmere Clubhouse from Meadow Drive.

Photograph 7: View of Brosewere Bay from Hickory Road.

Photograph 8: View of the Woodmere Club from Broadway.

Photograph 9: View of the triangular pocket park containing the Culluloo Telewana

Photograph 10: View of the Woodmere Channel from Keene Lane/Railroad Avenue.
monument from Keene Lane/Wood Lane



Photograph 11: View of the Woodmere Boulevard corridor

Photograph 12: View of the Rockaway Hunting Club from the Woodmere Dock.

FIGURE 15
SCENIC VIEW LOCATIONS

Source: NYS GIS Orthoimagery 2016,
ESRI World Transportation
Scale: 1 inch = 700 feet

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Village of Woodsburgh
Vision Plan

4. Neighborhood Character

The Village of Woodsburgh is characterized by year-round residents and quiet residential streets with established tree cover and can be defined as suburban in character. The medium-density residential neighborhood in the Village is generally defined by the large two- and three-story single-family houses on small lots with driveways and lawn/yard areas. The neighborhood is oriented inward, contains trees and winding roads, with few straight connections from one end of the village to the other. The golf course properties are distinguishing visual features that contribute to the character of the village and provide recreation and public open space within the community.

The Village of Woodsburgh is a small, historic and distinctive residential community nestled between scenic coastal waters with marsh islands and well-established and attractive residential neighborhoods associated with the Five Towns. Woodsburgh is a close-knit, tranquil community with narrow winding tree-line roads and scenic views that the community cherishes. Residents are often seen walking with family members or children are playing throughout the quiet neighborhood streets. Others enjoy running or jogging along the scenic roadways beside the channel and the bay. Security cameras and security warning signs throughout the Village's streets make pedestrians and residents feel safe and comfortable.

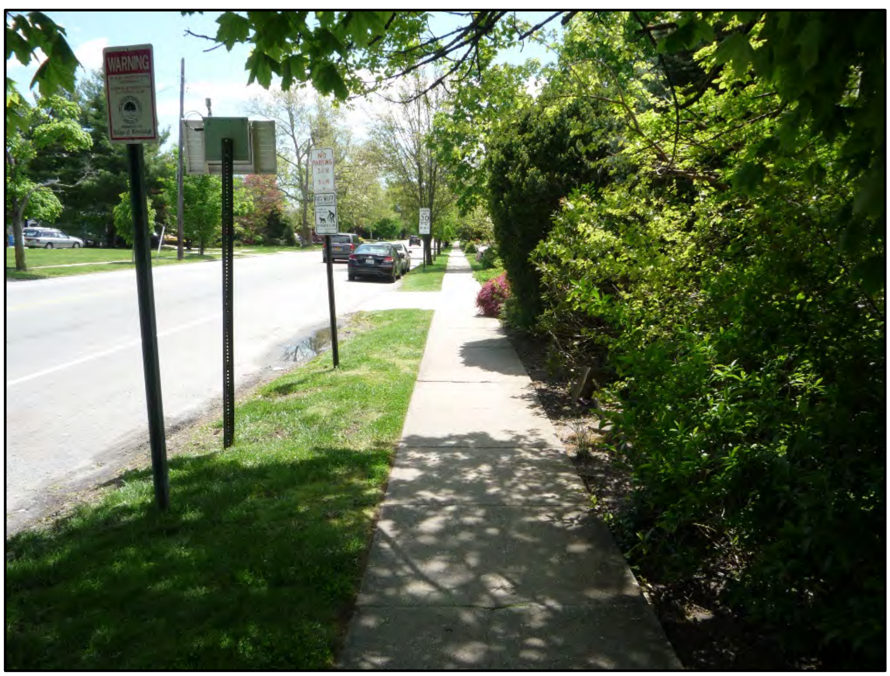
Attractive residential architecture also helps define the character of Woodsburgh. The Village contains various architectural styles, such as Colonial, Tudor, Contemporary, Victorian, Ranches and Post Modern. Although there is not one cohesive style, the variety of architecture through the Village makes Woodsburgh unique and attractive. The following is an excerpt from *A Brief History of the Village of Woodsburgh*:

> "*For a number of years after its incorporation, Woodsburgh changed very little. Its affluent residents strove to maintain the residential character of the community and the quality of new construction. The 1929 stock market crash and the subsequent Depression caused financial turmoil throughout the nation and many homeowners who were wealthy one day were forced to sell their properties the next. After World War II, land speculators who had bought up large estates were in a position to demolish the mansions and erect several fashionable single-family houses where one had been. Woodsburgh was no exception. Seventy-five percent of the houses in Woodsburgh were built after 1939 and the existing homes show a variety of architectural styles. Winding roads and magnificent trees remain -- a testament to the gracious lifestyle of the early residents as Woodsburgh introduces new generations to the charms of one of the South Shore's most historic and congenial communities*".

Additionally, streetscape elements such as street furniture, way-finding signage, gateway signage, lighting and landscaping are important visual resources that define the character of Woodsburgh. Examples of such distinctive features in the Village include:

Decorative wooden sign and lamp post.

Gateway sign with decorative landscaping and security signage.



Wayfinding and security signage.

Street furniture.

When asked what existing features in the Village enhance the character of Woodsburgh, public survey respondents indicated the following:

- Tree lined streets (93%)
- Decorative lamp posts (86%)
- Well maintained properties (85%)
- Winding narrow roads (82%)
- Wooden street signage (75%)
- The Woodmere Clubhouse (68%)
- Traditional architecture (65%0
- Triangular pocket park at Keene Lane/Wood Lane (58%)
- Belgian block curbs (55%)
- Culluloo Telewana monument (52%)

Other responses included no sidewalks and more trees, beautiful green acres adjacent to the Village, large lots, exclusivity and the golf course setting. Residents also indicated in the public survey that there are certain aspects of the Village that can be improved to enhance the Village's quality of life. Feasible responses from the community included:

- Provide more access to the waterfront
- Create public areas to sit near the waterfront
- Improve bicycle lanes and walking paths
- Repair deteriorating roads in the Village
- Improve drainage within the Village to reduce street flooding and flooding in homes
- Reduce traffic in the Village and enforce stricter traffic regulations
- Provide additional stop signs throughout the Village to reduce speeding
- Provide more street parking
- Create a park within the Village
- Maintain existing green space and viewsheds
- Create a Village clubhouse just for residents
- Install new lighting within the Village
- Require lower buildings heights and widths for future development in order to maintain the small quaint Village character
- Prevent overdevelopment within the Village in order to preserve the existing community character
- Limiting powered gardening tool operations to Monday through Friday only
- Limit all construction to Monday through Friday only
- Enforce stricter noise regulations to prevent noise emanating from residences that impacts adjacent homeowners
- Increase security patrol hours and police presence within the Village
- Reduce biting greenhead flies
- Ensure residents are appropriately placing garbage bins on curbsides during designated collection days to increase curb appeal
- Ensure sanitation is properly collected by the sanitation department so that excess garbage is not left in the roadways

In order to preserve the character of Woodsburgh, the elements and features that contribute to the Village's community character must be protected in order to maintain the existing quality of life. If the visual character of the Village is not protected, future residents will not enjoy many of the assets that current residents' value today.

E. TRANSPORTATION

1. Census Data

Commuting Patterns

The U.S. Census Bureau collects data on commuting or "journey to work" characteristics, including the "means of transportation to work" through the American Community Survey (ACS). While the trip to work data does not encompass all trips made within Woodsburgh, the data can assist in understanding the modal preferences and patterns of residents from the Village for one of the largest users of transportation: commuters. **Table 19** below demonstrates commuting data from the 2012 and 2017 American Community Survey Five-Year Estimates for the Village of Woodsburgh.

According to the 2012 and 2017 Five-Year American Community Survey Estimates, the number of workers aged 16 and over increased in the Village by approximately 70 workers from 2012 to 2017. The most common means of transportation to work for both 2012 and 2017 was to drive alone, followed by public transportation then carpooling. The percentage of workers that drove alone to work remained fairly steady around 74 percent of commuters with only a slight increase of 0.81 percent. The percentage of people using public transportation decreased by approximately 15 percent but was still the second most common means of transportation to work. Carpooling increased drastically by 88 percent while walking increased by 66.67 percent and other means of travel slightly increased; bicycling remained at zero. The percentage of people working from home decreased by 14.47 percent according to the 2017 estimates.

Table 19 - Means of Transportation to Work

Means of Transportation	2012 ACS 5-Yr Est.	2017 ACS 5-Yr Est.	Change
Workers 16 years old and over	314 workers	384 workers	+70 workers
Car, truck or van	76.4%	79.2%	+3.66%
Drove alone	73.9%	74.5%	+0.81%
Carpooled	2.5%	4.7%	+88%
Public Transportation	15.3%	13%	-15.03%
Bicycle	0%	0%	-
Walk	0.6%	1%	+66.67%
Other Means	0%	0.3%	Cannot be defined
Worked at Home	7.6%	6.5%	-14.47%
Total	**100%**	**100%**	-

Source: 2012 5-Year ACS, 2017 5-Year ACS Commuting Characteristics

Travel Time to Work

The American Community Survey collects data regarding residents' travel time to work and this data is recorded in the ACS five-year estimates. The travel time to work data for Woodsburgh is shown in **Table 20.** Within Woodsburgh, the average travel time to work decreased from 36.4 minutes in 2012 to 33.6 minutes in 2017 (a change of 2.8 minutes). In 2012, a commute time of 60 minutes or more was the most common with nearly 30 percent of residents, followed by commute times of 30-44 minutes (23.5%), under ten minutes (17.9%), 10-19 minutes (10.7%), 45-59 minutes (9%), and finally 20-29 minutes (8.6%). According to the 2017 ACS estimate, a commute time of 10-19 minutes was the most common (24.8%), followed by 60 minutes and over (24.2%), 45-59 minutes (16.7%), 30-44 minutes (13.4%), 20-29 minutes (12%), and finally under 10 minutes (8.9%).

Between 2012 and 2017, a commute time of 10-19 minutes increased the most with an approximately 131.78 percent increase. A commute time of 45-59 minutes (approximately 85.56 percent) and 20-29 minutes also grew significantly (approximately 39.53 percent); all other categories decreased. The less than 10 minute category experienced the greatest decrease of approximately 50.28 percent, followed by the 30-44 minute category which decreased by approximately 42.98 percent, while the 60 minutes and over category experienced a 20 percent decrease. The total mean travel time decreased by 2.8 minutes from 2012 to 2017.

Table 20 - Travel Time to Work			
Travel Time	**2012 ACS 5-Yr Est.**	**2017 ACS 5-Yr Est.**	**Percent Change**
Less than 10 minutes	17.9%	8.9%	-50.28%
10 – 19 minutes	10.7%	24.8%	+131.78%
20 – 29 minutes	8.6%	12%	+39.53%
30 – 44 minutes	23.5%	13.4%	-42.98%
45 – 59 minutes	9%	16.7%	+85.56%
60 minutes and over	30.3%	24.2%	-20.13%
Total	**100%**	**100%**	-
Mean travel time (minutes)	*36.4*	*33.6*	*- 2.8 minutes*
Source: 2012 5-Year ACS, 2017 5-Year ACS			

2. <u>Roads</u>

NYS DOT Functional Classification

There are approximately 5 miles of roadways contained within the Village of Woodsburgh. These roads are generally in good repair and serve the residents well. Many of the roadways are narrow and quiet residential streets with one lane in each direction. There are also one-way streets within the Village (**Figure 16**) and there is at least one roadway that suffers periodic flooding that contributes to its poor state of repair.

The New York State Department of Transportation (NYSDOT) groups roadways into "functional classes" based on the level and character of service the roadway provides. A roadway's classification defines its importance within the overall network. There are six classifications of roads: Principal Arterial Interstate, Principal Arterial Expressway, Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local. However, within the Village, all roads are classified as Minor Arterial, Major Collector, and Local Roads. Broadway and Meadow Drive are classified as Minor Arterials and Keene Lane (between Woodmere Boulevard South and Meadow Drive), Pond Lane, Woodmere Boulevard, and Browers Point Road are classified as Major Collectors. The remaining roadways within the Village are considered local roads.

Table 21 - AADT Values for the Village of Woodsburgh	
Roadway Name and Location	**AADT Value (vehicles)**
Keene Lane (between Woodmere Boulevard South and Meadow Drive)	300
Keene Lane (within the Village and Rutherford Lane)	776
Meadow Drive (between Broadway and Keene Lane)	885
Browers Point Branch (between Woodmere Boulevard South and Hewlett Neck Road)	1,258
Broadway (within the Village)	15,137
Woodmere Boulevard South (north of Barberry Lane)	3,507
Woodmere Boulevard South (south of Barberry Lane)	1,257

NYSDOT provides Annual Average Daily Traffic (AADT) data for some of the roadways within the Village. AADT is an estimate of the average daily traffic along a defined segment of roadway based on short term traffic counts and estimation techniques. The AADT estimation process allows the user to be 95 percent confident that the estimated AADT is within approximately 10 percent of the actual value. The traffic counts, or estimated AADT, for these roads were last updated in 2015 and are shown in **Figure 16**. The AADT values range from 300 vehicles in the interior Village streets to over 15,000 vehicles on Broadway. **Table 21** presents the AADT of vehicles at specific roadways within the Village. It should be noted that the population of the Village and surrounding areas are significantly religious (orthodox Jewish), and there is limited traffic on Saturdays as a result of same.

Input from residents and community members indicated that there are several Village roadway issues and concerns ranging from roadway flooding to congestion. Specific concerns noted in the public survey included provide more on-street parking, reduce traffic within the Village, provide more stop signs to reduce speeding along the curved neighborhood roadways, repave Village roadways and limit traffic on Broadway.

According to Chapter 131, there are specific design standards for new streets and general design standards for improvements to existing streets for subdivision. Design standards for new streets are contained within §131-22(H). With respect to requirements for existing streets, the Village Code notes that all aspects of existing streets must be graded and improved (e.g., gutters, sidewalks, lighting, etc.); however, the Planning Board may waive or vary improvements, subject to appropriate conditions. In addition, the Village Code states that traffic control and street signs must be provided by the applicant for any future development. Chapter 128 of the Code, Streets and Sidewalks, provides general provisions for street excavations and grading, as well as public sidewalks.

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FIGURE 16
AVERAGE ANNUAL DAILY TRAFFIC (AADT)

Source: NYS GIS Orthoimagery 2016,
ESRI World Transportation, NYSDOT
Scale: 1 inch = 700 feet

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3. Passenger Rail Service

The Village of Woodsburgh is accessible by rail transportation via LIRR's Far Rockaway Branch. Although there are not any train stations within the Village, the Cedarhurst Train Station and Woodmere Train Station are located just outside the Village, north of Broadway and Central Avenue. The Cedarhurst Train Station is approximately 2 miles northwest of the Village and the Woodmere Train Station is approximately 0.6-mile to the north of Woodsburgh. The Far Rockaway Branch provides service between Far Rockaway and Penn Station and has connections to the Hempstead Branch, West Hempstead Branch and Babylon Branch.

4. Bus Transportation

Nassau Inter-County Express (NICE) local bus service provides 39 bus routes throughout the County. Routes 31 and 32 provide service from Far Rockaway to the Hempstead Transit Center with stops along Broadway and West Broadway in the vicinity of the Village. The Hempstead Transit Center is a major bus terminal that offers connects to several NICE routes including Routes 6, 15, 27, 35, 40/41, 48/49, 54/55, 70/71/72 and Mercy Medical Shuttle service.

On weekdays, Route 31 provides four northbound services and three southbound services between Far Rockaway and the Hempstead Transit Center. However, southbound service begins at Broadway and Merrick Road Five Corners for two of the three southbound services, and southbound service from Hempstead Transit Center and the Malverne LIRR Station to the Far Rockaways is only provided at 7:00 p.m. On Saturdays, there are 19 northbound services and 21 southbound services on Route 31. However, only 19 southbound services are provided from Hempstead Transit Center and Malverne Long Island Railroad Station to the Far Rockaways. Route 31 does not service Long Island on Sundays or Holidays. Route 32 provides 10 northbound services and eight southbound services on weekdays. However, only seven of the eight southbound services are provided from the Hempstead Transit Center and Malverne LIRR to the Far Rockaways (southbound service begins at Broadway and Merrick Road Five Corners for the first morning trip). On Saturdays, Route 32 offers 25 northbound services and 24 southbound services. On Sundays and Holidays, there are 29 northbound services and 28 southbound services.

5. Air Transportation

The Village of Woodsburgh does not contain any airports but there are two relatively close with John F. Kennedy International Airport approximately 7 miles northwest of the Village and LaGuardia Airport approximately 16 miles north-northwest of the Village. Airports are served by numerous passenger airlines including but not limited to American Airlines, Delta, Jet Blue and United. Residents can also utilize smaller airports in western Suffolk County Long Island for domestic travel. These airports include Republic Airport in East Farmingdale, which is approximately 20 miles east of Woodsburgh or Long Island MacArthur Airport in Ronkonkoma, which is approximately 40 miles east of the Village. Republic Airport offers aircraft charters through Jet Flite, Northeastern Aviation Corporation, Ponderosa Air, Sundance Aviation, Talon Air and Ventura Air Services; helicopter charters and casino charters are also offered at Republic Airport. Long Island MacArthur Airport offers non-stop service to many cities and carriers include Southwest, American Airlines and Frontier Airlines.

6. Pedestrian Environment

Within the Village of Woodsburgh, most of the streets do not provide sidewalks. The roadways in the Village which do are Broadway, segments of Woodmere Boulevard South (north of Pond Lane/Browers Point Branch) and the north side Browers Point Branch. Woodmere Boulevard South, south of Pond Lane/Browers Point Branch, contains wide shoulders which could be improved with sidewalks to improve walkability. The remaining roads in the Village are narrow local roads. According to Walk Score, the Village currently has a score of 43 which indicates that the Village is car-dependent, and most errands require a car.[15]

F. COMMUNITY SERVICES AND FACILITIES

Community service providers are publicly funded agencies, departments, organizations, or districts that deliver an essential governmental service or utility for public benefit. The quality of life within any community is defined in part by the quality of services afforded to its citizens. Providing adequate public facilities and delivering essential services and utilities are of critical importance in maintaining an economically viable and operationally successful and sustainable community. The Village of Woodsburgh residents rely on community service providers that provide an important and critical component of Village day-to-day operations. **Figure 17** depicts the community facilities (i.e., schools, police, fire and sewer district) that service the Village.

1. Governmental Services

Village Government

The Village of Woodsburgh is an incorporated village within the Town of Hempstead, Nassau County, New York. This small 0.4 square-mile suburban community is part of the Five Towns in Nassau County. The Village is located north of Brosewere Bay, on the south shore of Long Island, and is bounded by the Town of Hempstead to the north, Village of Lawrence and Town of Hempstead to the west, and the Village of Hewlett Neck and Town of Hempstead to the east.

The Village of Woodsburgh shares a Village Hall with the Village of Hewlett Bay Park. Village Hall is located outside of the Village boundaries at 30 Piermont Avenue, Hewlett. Governmental services are administered by a Mayor and the Village is governed by a Board of Trustees consisting of five Village Trustees including the Mayor and Deputy Mayor. The Village has a Clerk, Village Treasurer, Village Attorney and a Code Enforcement Officer and Inspector. Village Court is also located at 30 Piermont Avenue.

The administration of the day-to-day function of the Village is performed through a combination of Village, Town and County-administered programs and services. Village functions include but are not limited to: the enactment of local laws; building inspection and code enforcement; and site plan and subdivision review. Highway maintenance of local roads is divided between the Town of Hempstead and Nassau County. Garbage and trash pickup are handled by Sanitary District No. 1 through the Town of Hempstead. The Nassau County Police Department Fourth Precinct administers policing. The Nassau County Fourth Precinct Police Department is located 1699 Broadway in Hewlett.

2. Fire and Ambulance Protection

Fire and ambulance services are provided by the Woodmere Fire Department, located at 20 Irving Place in the Town of Hempstead. The Woodmere Fire Department is a volunteer emergency response organization with engine companies for extinguishing fire, ladder companies for search and rescue, and rescue companies to treat and transport all patients to the hospital.

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[15] https://www.walkscore.com/score/96-wood-ln-woodmere-ny-11598

FIGURE 17
COMMUNITY FACILITIES

Source: NYS GIS Orthoimagery 2016,
ESRI World Transportation, Nassau County GIS
Scale: 1 inch = 700 feet

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3. Medical Services

There are no hospitals within the Village of Woodsburgh. The nearest hospitals are St. John's Episcopal Hospital located at 327 Beach 19th Street in Far Rockaway and South Nassau Communities Hospital located at One Healthy Way in Oceanside.

St. John's Episcopal Hospital is a non-profit, faith-based institution that is the only full-service acute care hospital on the Rockaway peninsula. The 257-bed facility provides comprehensive preventative, diagnostic, treatment and rehabilitative services to the Rockaways and Five Towns in southern Queens County and southwestern Nassau County. St. John's Episcopal Hospital's team consists of more than 400 physicians and more than 1,500 employees. In addition, the hospital is also a teaching hospital and trains over 180 residents annually in 10 Graduate Medical Education Programs accredited by the New York State Department of Education.

South Nassau Communities Hospital is also a non-for-profit teaching institution with 455 beds. The hospital provides emergency, medical, surgical, obstetrical/gynecological and acute care services to residents of the entire South Shore from the Rockaways to Massapequa. Aside from the main campus in Oceanside, South Nassau Communities Hospital has nine other satellite facilities in the region.

4. Police Protection

The Village of Woodsburgh does not have its own local police force. Protection services are provided by the Nassau County Police Department.

Nassau County Police Department

Police protection in Woodsburgh is provided by the Nassau County Police Department – Fourth Precinct, located at 1699 Broadway in the Village of Hewlett, New York. The Fourth Precinct serves the communities of Inwood, Hewlett, Hewlett Bay Park, Hewlett Neck, Woodsburgh, Hewlett Harbor, Woodmere, Cedarhurst, Lawrence, East Rockaway, Bay Park, East Atlantic Beach, Atlantic Beach Estates, Oceanside, North Long Beach, Atlantic Beach, Island Park, Lido, and Point Lookout. Both the Woodmere Country Club and the Rockaway Hunt Club are listed as "Places of Interest" on the Fourth Precinct's website.

In 2012, the Fourth Precinct building was damaged during superstorm Sandy and was in accessible due to flooding on the South Shore. A new and larger station house was built adjacent to the old building in 2017 through grant funding and was designed to withstand severe storm event conditions.

In addition to the services provided by the Nassau County Police Department – Fourth Precinct, the Nassau County Auxiliary Police – Fourth Precinct Unit, which is entirely comprised of volunteers, serves Woodsburgh in addition to Atlantic Beach, Hewlett Harbor, Inwood, Cedarhurst, Woodmere, Hewlett, North Woodmere, Hewlett Neck, Woodsburgh, Hewlett Bay Park, Lawrence and Meadowmere Park.

5. Schools

Public educational services, from pre-kindergarten to Grade 12, are provided by both the Hewlett-Woodmere Public School District and the Lawrence Union Free School District. The school district boundary that divides the Village in half runs along Woods Lane, continues south along Birch Lane and West Ivy Hill Road and encompasses the area of the Rockaway Club within the Village boundary. School children in the western portion of the Village attend the Hewlett-Woodmere Public School District and school children in the eastern portion of the Village attend the Lawrence Union Free School District.

The Hewlett-Woodmere Public School District office is located at 1 Johnson Place, Woodmere, and the Lawrence Union Free School District office is located at 195 Broadway, Lawrence.

6. <u>Library Services</u>

Library services are provided by both the Hewlett-Woodmere Public Library, which is located 1125 Broadway in Hewlett and the Peninsula Public Library, which is located at 280 Central Avenue in Lawrence.

The Hewlett-Woodmere Public Library is the Music and Art co-central library of the Nassau Library System and serves the Hewlett-Woodmere School District. Not only does the library loan books, music, videos and DVDs, but also provides defensive driving courses, monthly book discussion and museum passes, among other services for the community. Peninsula Public Library was chartered by the State of New York as a school district library in 1951 and serves residents of the Lawrence Union Free School District. Similar to the Hewlett-Woodmere Public Library, the Peninsula Public Library loans various materials and provides many programs for the community.

7. <u>Waste Disposal and Water Supply</u>

The Village is currently being serviced by the Woodmere-Hewlett Sewer Collection District. Wastewater discharge from the Village is collected at the Cedar Creek Water Pollution Control Plant, which is operated by the Nassau County Department of Public Works (NCDPW). Additionally, the New York American Water Company supplies domestic water to the Village.

8. <u>Village Parks and Recreation</u>

Parks and recreational areas come in many forms. They can be school playgrounds, municipal parks, private recreational clubs, nature preserves or athletic complexes. Presently, in the Village, the only recreational opportunities are the private golf courses. There is also a small pocket park containing the Culluloo Telewanna monument. Just outside of the Village, there are opportunities for water-related recreation including docks and private yacht clubs.

As part of the public survey, community members were asked to identify recreational facilities they utilize outside of the Village and future recreational facilities they believe are needed in the Village. According to the public survey results, the majority of community use County parks (50.8%), public beaches (50.8%), nature preserves (45%), country clubs/golf courses (44.3%), private athletic clubs (40.2%) and pocket parks (31.2%). Less than 30 percent of community members indicated that they use other types parks and recreational areas (i.e., public athletic fields and school playgrounds). When asked what types of recreational facilities members of the community would like to see in the Village (whether or not there is sufficient developable space), community responses included:

- Passive recreation such as benches for viewing the waterfront (57%)
- Pedestrian pathways (53%)
- Bike pathways (51%)
- Play areas (42%)
- Marine park (40%)
- Community gardens (38%)
- Observation platform on the waterfront (30%)
- Tennis courts (30%)
- Pocket parks (2/8%)
- Active recreation such as athletic fields (26%)
- Dog park (26%)
- Swimming pools (19%)
- Basketball courts (18%)
- Community social center (14%)
- Skate park (8%)

In order to determine the proximity of nearby parkland and recreational space to the Village, a drive time analysis was conducted through ESRI ArcGIS. The drive-time analysis identifies the areas that can be reached within a specified driving time (ten-minutes was used for this analysis) from the center of the Village. **Figure 18** indicates the various parkland and recreational space located within the ten-minute drive time area. Private golf country clubs are the primary opportunities for outdoor recreation within the Village. Just outside of the Village, there are few opportunities for water-related recreation including docks and private yacht clubs. Parkland and wetlands are located along the outskirts of the ten-minute drive time radius.

When asked to provide other comments, respondents stated that they would like to see parks for kids, nature trails for walking, green park for relaxation and quiet passive social interaction (but the park should not allow events and or playing fields), and a walkable nature preserve along the Woodmere Channel.

Based on the public open house, there are several locations in the Village where community members would like to see additional parks and recreational facilities including a Village park on the Woodmere Club or at the existing observation area/parking area overlooking the Woodmere Channel, a nature trail/boardwalk loop along the Woodmere Channel, and a Village Community Clubhouse or Community Recreational Center at the existing Woodmere Clubhouse.

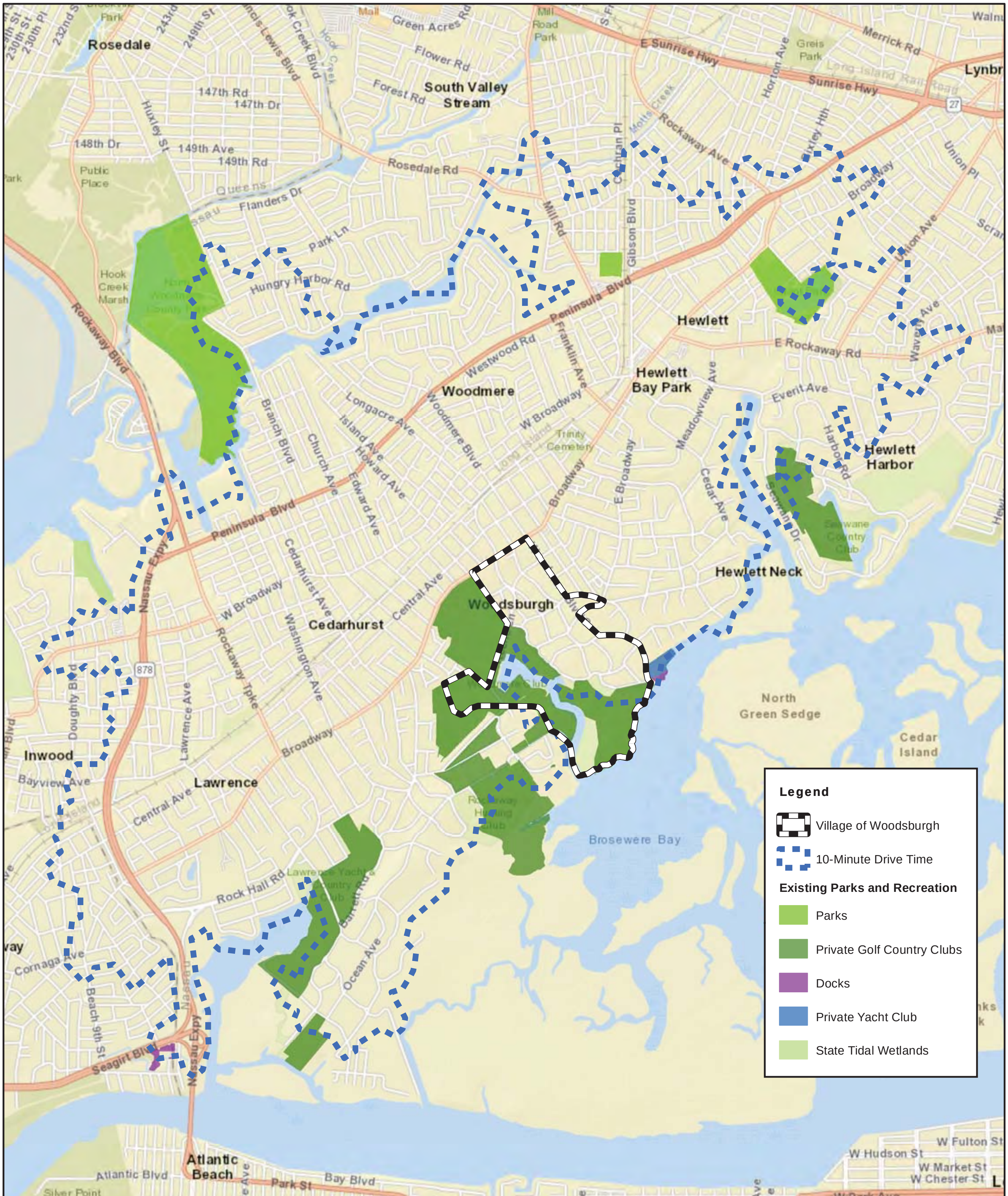

FIGURE 18
PARKS AND RECREATION

Source: Nassau County GIS, ESRI World Street Map
Scale: 1 inch = 3,000 feet

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