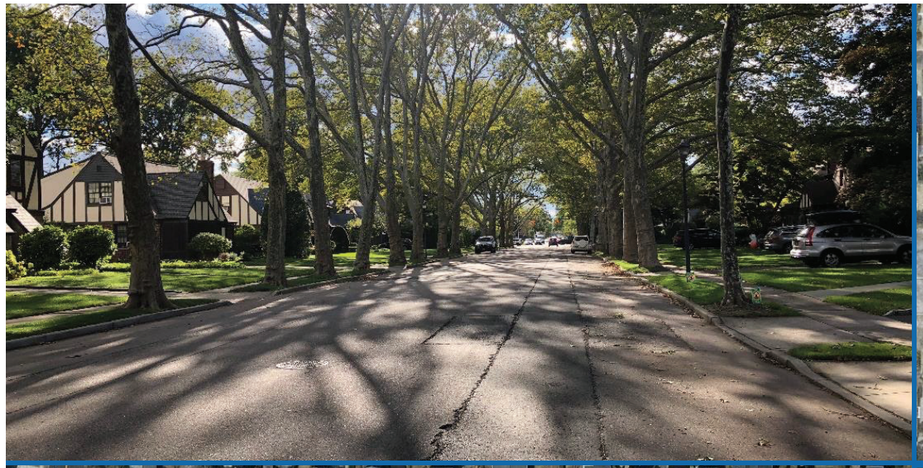

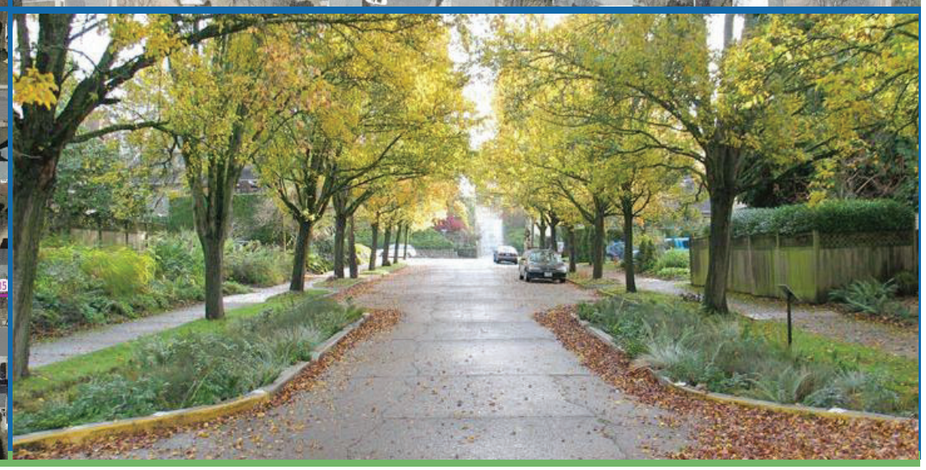

Prepared for:

VILLAGE OF GARDEN CITY

SATELLITE STUDY AND TRAFFIC CALMING MASTER PLAN FINAL REPORT

August 20, 2023

Prepared by:

Creighton Manning

Contents

Executive Summary

The Village of Garden City, New York (the Village), is interested in understanding the issues around, and possible treatments for, calming traffic throughout the municipality, based on concerns from residents and elected officials, about speeding and street safety. As an extension of two related, but separate, studies conducted in the Central Section (Cathedral Avenue Road Diet and Village-owned Numbered Streets Study), the Village retained Creighton Manning Engineering (CM) to conduct a traffic calming study in several smaller, delineated study areas in the other three sections of Garden City, and that effort eventually turned into this project, which is called the *Satellite Study – Traffic Calming Master Plan*.

In some ways this effort was similar to the Numbered Street Study, but this time CM did more to explain the principles of Traffic Calming and provided the Village with more ideas and strategies to achieve their goals. CM evaluated the existing conditions, collected and analyzed traffic data, researched possible treatments assessed street segments in the study area for suitability, and developed concept plans for select treatments on representative streets. The data reveled there are some locations in the village where speeding is present and some intersections and road segments where there are higher incidents of crashes.

To assist these efforts, CM developed a public engagement strategy which consisted of multiple activities. General and location-specific feedback was solicited from the wider community on traffic safety issues, including almost 1,000 comments gathered through the **Survey 123** app. Three **Community Advisory Committees (CAC)** were established to provide more detailed information on problem areas at one set of meetings in November 2022 and to gauge support for possible treatments at a second set of meetings in March 2023. Lastly, Village staff and the **Traffic Commission** were consulted regularly to ensure that local leaders were aware of the study's progress and actively involved in shaping the final direction of the work. This level of community engagement is vital to any successful planning effort – without feedback from the community, the work has no credibility, and without the support of leadership, the recommendations have little chance of being realized.

This study provides an evaluation of existing conditions. A **suitability assessment** which helps with an initial understanding of which treatments are likely to be suitable in different locations throughout the village. There are also specific recommendations for concepts which were developed after reviewing the data and community concerns, and then discussing the ideas with the CACs and the Traffic Commission.

The traffic calming treatments recommended in this study are regularly proposed by transportation planning and traffic engineering professionals because they are considered best-practices in the areas of pedestrian safety and calming traffic. These treatments are effective at reducing speeds, reducing incidents of crashes, and reducing vehicle volumes. While they can be implemented in isolation, traffic calming treatments are often most effective when deployed in multiple locations across a targeted area, ***and*** **even more effective** when complemented by increased enforcement to stop bad actors and public information campaigns to raise awareness and encourage good behavior. There are also policies related to traffic safety which the Village is exploring, including lowering the speed limit. This is a relatively new option which municipalities across New York State are exploring since new legislation was passed. This document explains a few of the policy options which the Village can explore.

One specific aspect of this Traffic Calming Master Plan which was not in the prior study is a recommendation for the Village to develop a ***traffic calming request process or protocol***. The Traffic Commission will be working on defining and refining what goes into this document in the coming weeks. This process would build on the work of the suitability analysis by taking a closer look at feasibility and by providing a mechanism for residents to request these treatments in specific locations.

If a treatment receives enough support from the Traffic Commission and/or a group of residents, there is always the option to implement it as a pilot with temporary materials. The plan explains some of the ways the different materials can be used to create the same traffic calming elements without having to make the treatment permanent. Temporary speed humps have been installed on 4th Street. The Traffic Commission will study their impacts on speeds and volumes on that street and the adjacent roadways before deciding whether or not to install permanent speed humps.

Figure 1: Temporary speed humps have been installed on 4th Street; this was a recommendation from the prior traffic calming study

CM also has included in this Traffic Calming Master Plan an acknowledgement that treatments were not developed for every single street in Garden City, even if the street has long been identified as a serious traffic safety issue. The Traffic Commission is aware that there are streets with habitual speeding and high incidents of crashes but were not directly addressed in this study. That is because those streets are under the jurisdiction of Nassau County or are larger streets in the Village which carry more traffic, do not qualify for certain traffic calming treatments, and require more thorough studies than other traffic calming treatments. The Traffic Commission knows of those and is working to address those locations through other efforts.

I. Introduction

The Village of Garden City is an incorporated village in the Town of Hempstead, in Nassau County. The 2020 population was 23,272[1]. The village has 214 lane miles of roadway, four Long Island Railroad stations, holds several County government buildings including the Nassau Supreme Court, and is home to the main campus of Adelphi University.

The village's suburban setting means most residents own and use private automobiles on a regular basis. The fact that regional commercial, educational, and governmental institutions are located in the village means a large number of private automobile trips pass through or end within Garden City daily. In short, there is a lot of driving going on in the and through the village. Many residents perceive traffic to be increasing, with negative effects on quality of life. At the same time, the village is very "walkable" due to numerous attributes: the rectilinear street grid, the relatively level grade, the extensive sidewalk network, presence of schools and parks in most residential neighborhoods, and multiple Long Island Railroad stations.

A. Project History

The Village initially hired CM in 2019 to conduct a study of how best to calm traffic along Cathedral Avenue. This study led to a recommendation for a "Road Diet". During that study, residents of neighboring streets expressed interest in complementary traffic calming treatments on the village-owned streets in the vicinity of Cathedral Avenue. Between Fall 2021 and Spring 2022, CM conducted what is referred to as the "Numbered Streets Study". That project saw CM working closely with the Village Administrator and the Central Property Owners Association (CPOA) to evaluate those streets for possible traffic calming treatments.

Following the successful completion of that study, the Village decided to commission a similar study using smaller areas throughout the municipality to identify issues and understand possible solutions. In consultation with Village Administrator Ralph Suozzi and Police Commissioner Kenneth Jackson, the smaller study areas or "satellites" were selected, hence the reason this effort is often called the Satellite Study. During the scoping for this work, CM worked closely with the Traffic Commission including Chairman Charles Kelly, Trustee Lawrence Marciano, and then Trustee (now Mayor) Mary Carter Flanagan. It was the Traffic Commission who requested that the final product be a more comprehensive document, which is the reason this study is also referred as the Traffic Calming Master Plan. [Village Engineer John Borroni and Trustees Edward Finneran and Michael Sullivan were not involved in the initial aspects of the study but have been involved extensively since being hired and elected, respectively.]

B. Project Goals

The goal of this Satellite Study – Traffic Calming Master Plan is to recommend a Village-wide traffic calming plan made up of study areas that typify local streets. At completion of the study, CM will provide the Village with a robust network of proposed physical traffic calming treatments, suggested avenues for supporting traffic calming with request and prioritization protocols, and direction toward policy-related efforts that would complement the proposal. The ultimate goals for traffic calming are to reduce the speed of vehicle traffic, deter cut-through driving on residential streets, and improve quality of life by making streets safer for all users.

C. What is Traffic Calming?

Traffic calming, as a principle, seeks to value the safety of roadway users over the maximization of capacity or speeds. By actively working to reduce speeds, traffic calming measures increase the livability of a community and extend comfort and safety to vulnerable road users like pedestrians and bicyclists. Its many objectives include reducing crash frequency, reducing cut-through motor vehicle traffic, creating safe and attractive streets, promoting pedestrian travel, and enhancing the street environment[2]. As awareness of dangerous driving behavior rises nationwide, more and more municipalities have recognized that persistent concerns about speeding and safety can be addressed by a well-established set of treatments including speed reducers, curb extensions, and other interventions.

Referred to as the "three E's", traffic calming is often described as a multifaceted program involving education, enforcement, and engineering or planning[3]. In this report, CM will define and provide context for several established geometric traffic calming treatments as well as introduce concepts useful for reinforcing traffic calming at a policy level.

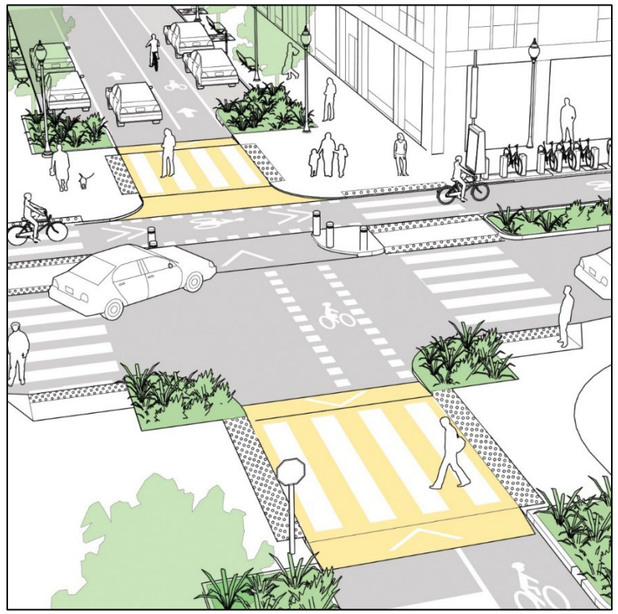

Figure 2: An intersection using raised crosswalks, bicycle lanes, bump-outs, and other treatments for traffic calming (source: NACTO)

D. Project Scope

CM set out to take inventory of existing street conditions, solicit and incorporate community input, identify appropriate traffic calming treatments, determine the suitability and feasibility of those treatments, develop full concept sketches for key locations, and summarize findings and recommendations to report to the Village.

CM used a variety of qualitative and quantitative methods to determine which traffic calming measures would be most appropriate for the study area and have the most effect. These techniques included street-specific suitability analyses based on traffic volumes and vehicular speeds, geospatial survey-based public outreach and direct input from community members at public meetings. Throughout the process, CM worked with both the leadership and

[1] US Census Bureau, https://www.census.gov/quickfacts/fact/table/gardencityvillagenewyork/PST045222
[2] Institute of Transportation Engineers
[3] Federal Highway Administration

residents of Garden City to identify several traffic calming measures most applicable to the Village's needs and preferences. This report serves as an overall summary of work completed by CM.

II. Study Areas

The Satellite Study – Traffic Calming Master Plan – used seven distinct study areas in which to develop treatment recommendations. The areas were selected to represent all types of existing streets in the Village to allow proposed treatments to be extrapolated to other, similar streets elsewhere. Though they may be shaped differently, all areas are approximately six-block-by-six-block squares. CM located study areas across segments of the village, choosing two study areas in the Garden City West Property Owners Association, two study areas in the Garden City Estates Property Owners Association, and three study areas in the Garden City East Property Owners Association.

These study areas were selected with guidance from Village Administrator Suozzi and Police Commissioner Jackson to contain a school, park, or other pedestrian generator that would benefit from effective traffic calming treatments. These areas were intentionally selected to be the same approximate size as the original study of the Village-Owned Numbered Streets Study in the Central Property Owners Association. Within each section, CM identified intersections or roadway segments at which to evaluate and propose traffic calming strategies. Like in previous studies, the focus is on streets that the Village has design jurisdiction over and does not include County or State controlled roadways.

West Section

Within the Garden City West Property Owners Association, the two study areas are:

- **Homestead-** bounded by LIRR tracks to the north, Clinch Ave to the west, Tanners Pond Rd to the east, and Stewart Ave to the south. This section contains the Homestead School, a key location generating pedestrian activity and requiring traffic calming attention.
- **Plaza to Cambridge-** bounded by LIRR tracks to the north, Cambridge Ave to the south, Edgemere Rd to the east and New Hyde Park Rd to the west. This section contains both St. Anne's School and Edgemere Park, two key locations generating pedestrian activity and requiring traffic calming attention.

Estates Section

Within the Garden City Estates Property Owners Association, the two study areas are:

- **Stratford-** bounded by Newmarket Rd to the north, Stewart Ave to the south, Tanners Pond Rd to the east, and Nassau Blvd to the west. This section contains the Stratford Avenue School and field, a key location generating pedestrian activity.
- **Salisbury and Chester-** bounded by LIRR tracks to the north, Cambridge Ave to the south, Roxbury Rd to the east, and Brompton Rd to the west. This section is adjacent to Adelphi University and contains both the Garden City Waldorf School and an exit to the Nassau Blvd LIRR Station, key locations generating activity in the neighborhood.

East Section

Within the Garden City East Property Owners Association, the three study areas are:

- **Hemlock**- bounded by E Old Country Rd to the north, Transverse Rd to the south, Russel Rd to the east, and Lefferts Rd to the west. This section contains Hemlock Elementary School, a key location generating pedestrian activity with a demand for midblock crossing.
- **Huntington-** curved rectangle bounded by Wyatt Rd to the north, Osborne Rd to the south, Clinton Rd to the east, and Washington Ave to the west. Segments of Lefferts Rd and Westbury Rd were included to capture Triangle Park, a key pedestrian trip generator in the area.
- **Locust and Grove-** bounded by Brook St to the north, Meadow St to the south, Grove St to the east, and Clinton Rd to the west. This section contains the Locust School, a key location generating pedestrian activity with a demand for midblock crossing.

Study Areas Map

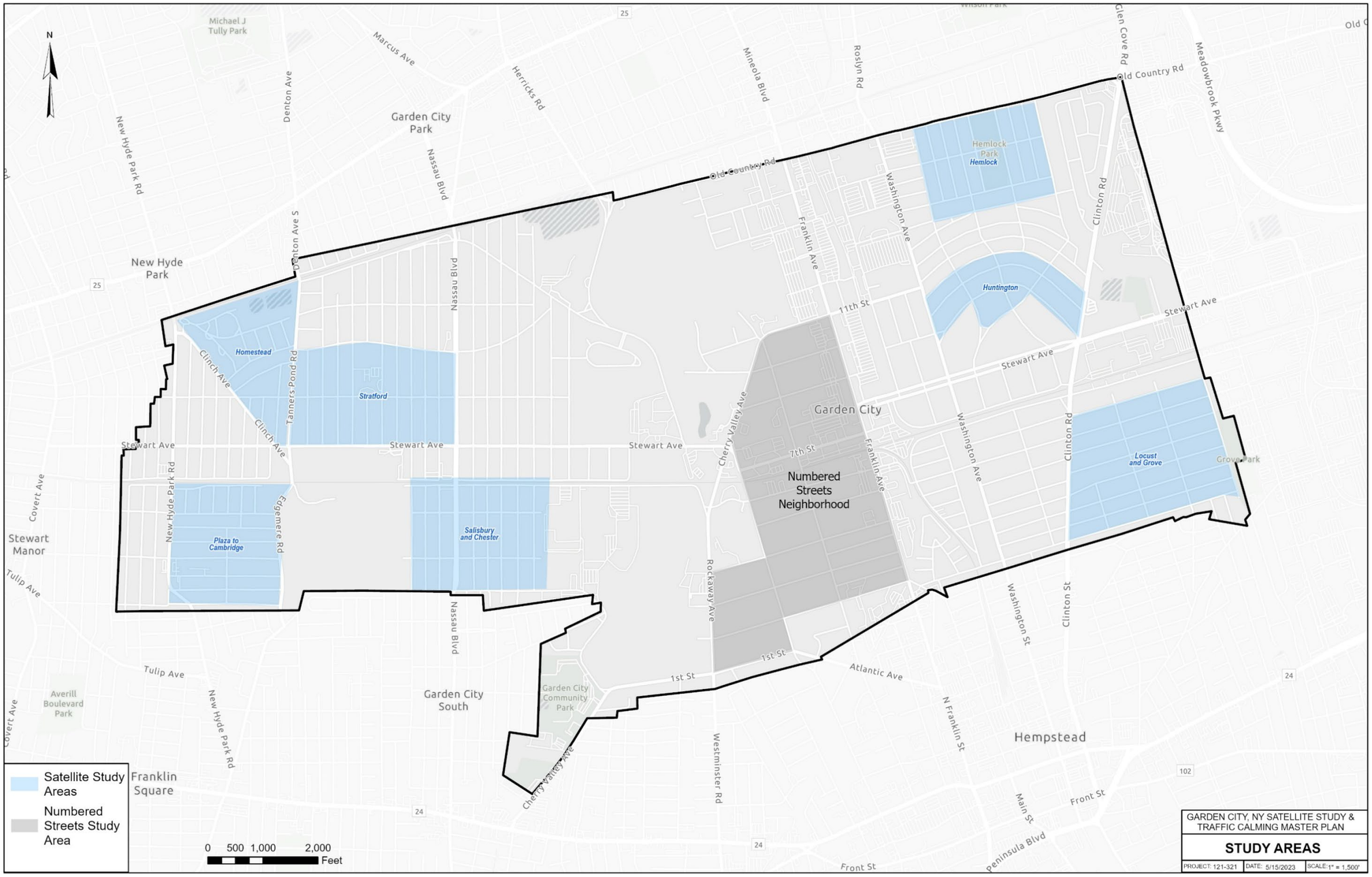

Figure 3: Garden City Satellite Study – Traffic Calming Master Plan with study area sections

III. Existing Conditions

Creighton Manning began the study by collecting relevant data for the study area and conducting field observations to better understand the physical features of the roads and the driving behaviors. Unlike the Numbered Streets Study, there was not a detailed inventory of each street.

A. Field Observations

CM staff spent time walking and driving the streets in the identified study areas throughout the village. Most observations occurred in Fall 2022. Staff observations focused on two areas - characteristics of the streets and behavior of roadway users (pedestrians, cyclists, and drivers). In the former, staff took pictures and noted the presence or absence of a sidewalk, curb, on-street parking, crosswalks, curb ramps, as well as the width of the roadway and other features. For the latter, staff looked to see where cars were speeding, ignoring stop signs and other traffic control devices or driving in an aggressive manner, as well as the presence and actions of pedestrians (where they were walking, if they used crosswalks, and other relevant patterns of activity).

Figure 5. Crosswalks cross Nassau Blvd but not for the side streets.

Figure 6. Many of the streets are over 30 feet and have little or no on-street parking, which creates two very wide travel lanes.

Figure 4. There are currently no bicycle lanes in the village. Cyclists were seen and bike parking is available at place like LIRR station.

Figure 7. Staff visited all the schools in each of the Satellite areas, including the Homestead School.

B. Data Collection and Analysis

CM used a variety of sources to gather the data needed for the study. The official New York State Department of Transportation (NYSDOT) Traffic Data Viewer was used for traffic volumes and speeds, where available. Additionally, CM deployed Automatic Traffic Recorders (ATR) in ten locations around the Village:

- Edgemere Rd between Yale St and LIRR Tracks
- Homestead Ave between Hayes St and Clinton Rd
- Stratford Ave between Wellington Rd and Euston Pl
- Hampton Rd between St Pauls Pl and Stratford Ave
- Wetherill Rd between Old Country Rd and Bayberry Ave
- Chestnut St between Tremont St and Clinton Rd
- Bayberry Ave between Maxwell Rd and Maple St
- Osborne Rd between Wetherill Rd and Westbury Rd
- Newmarket Rd between Wickham Rd and Lee Rd
- South Ave between Whitehall Blvd and Brompton Rd

Data collected for prior studies was also used. CM also used a subscription transportation data service called *Replica*[4], which uses a variety of data sources including vehicle in-dash GPS, location-based services from cell phones, etc. to develop their data outputs. The Garden City Police Department provided some data on crashes, traffic violations, and school bus stop locations. The following sections will illustrate how some of this data was employed in the study.

[4] https://www.replicahq.com/data-validations

1. Traffic Volumes

Traffic volumes were collected and assessed through a variety of methods. CM used the publicly available data from NYSDOT on their Traffic Data Viewer, actual counts from 2019. For segments not counted by NYSDOT, CM used Replica. CM also used counts from Automatic Traffic Recorders (ATR) placed throughout the village.

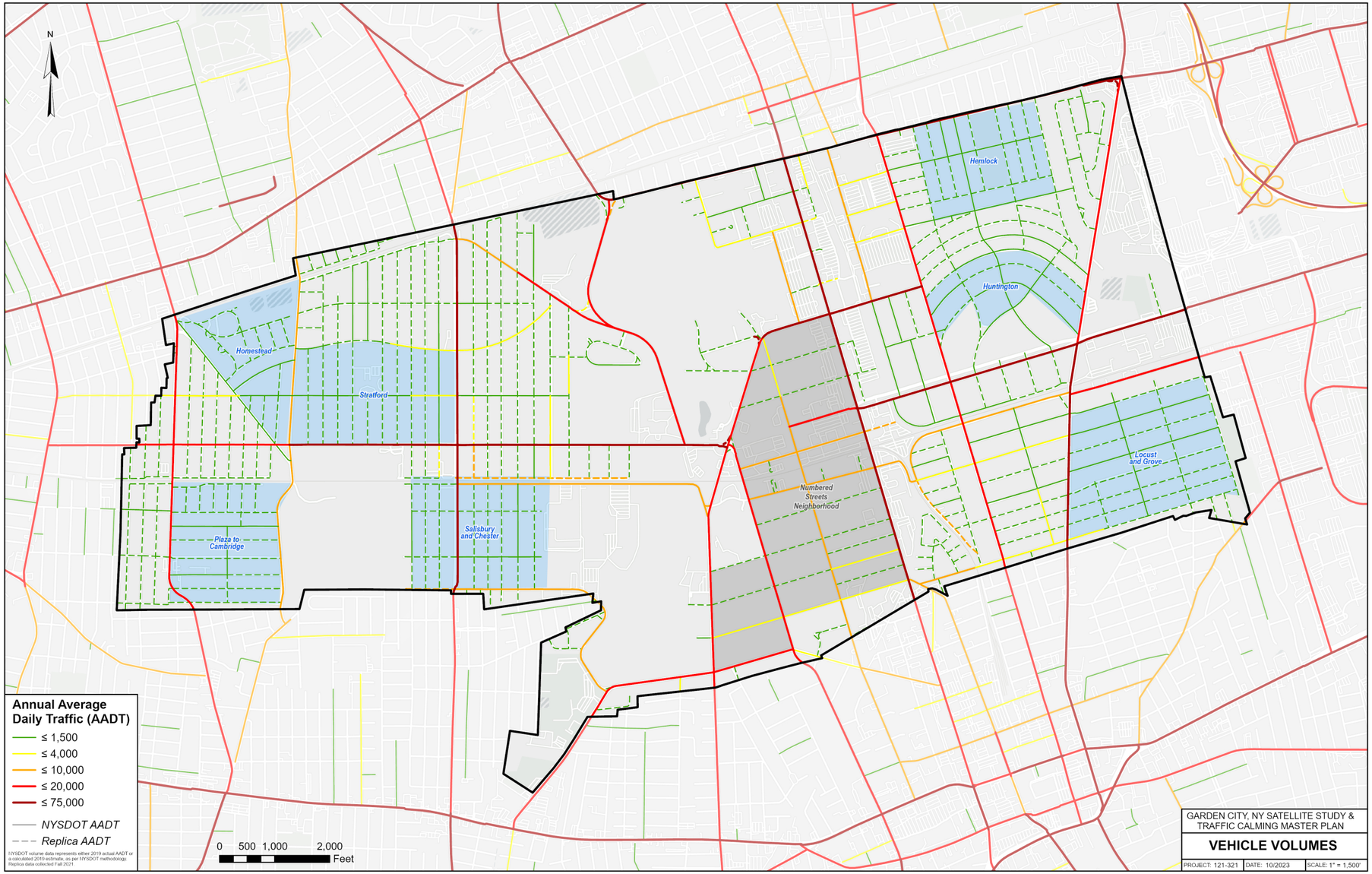

Figure 8: Average Annual Daily Traffic Volumes from NYSDOT and Replica Data

2. Vehicle Speeds

Using speed data from the NYSDOT Traffic Data Viewer, CM created a map to show vehicle speeds throughout the Village. By comparing speed data on each segment with its posted speed limit, the map shows which streets experienced excessive speeding. Excessive speeding is when a segment's 85th percentile speed, the speed at which most vehicles are operating at or below, is at least 20% greater than the posted speed limit. On Village owned streets, with a speed limit of 30 miles per hour, excessive speeding would be if the 85th percentile speed was 36 miles per hour or higher. Put another way, 15% of vehicles are traveling at least 20% above the posted speed limit, or over 36 miles per hour.

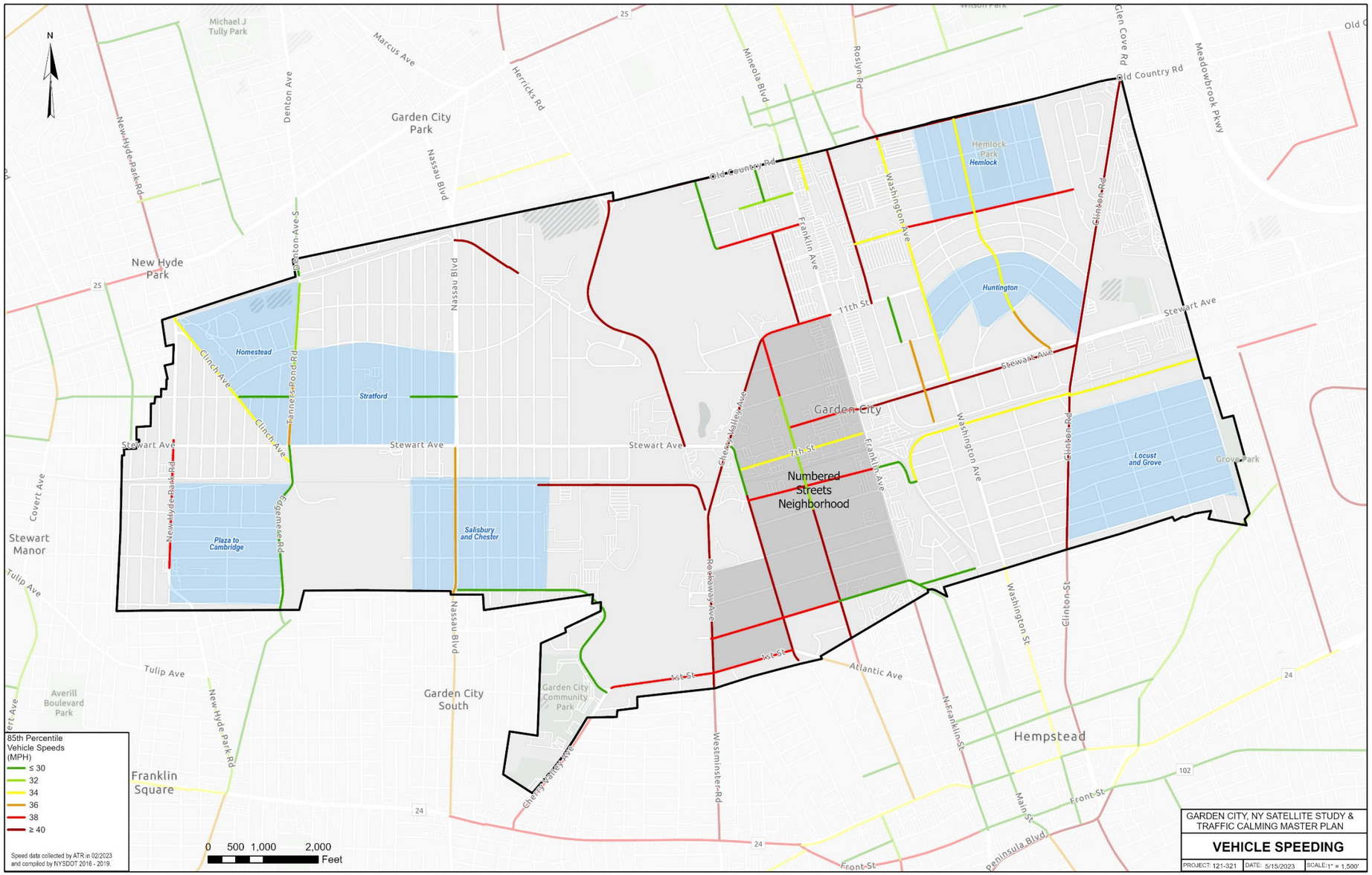

Figure 9: Map of 85tth percentile speeds in the Village and study areas

During the public outreach process, CM used both reported speed data from NYSDOT as well as anecdotal reports from residents to identify road segments and intersections with perceived speeding. Because traffic calming intends to make streets more livable by prioritizing both driver and pedestrian safety, the Satellite Study made sure to investigate locations near pedestrian generators or reported by concerned residents whether their recorded 85th percentile speeds were high or not. While this criterion can help identify major areas of concern, more evaluation was done to make sure that all streets were considered.

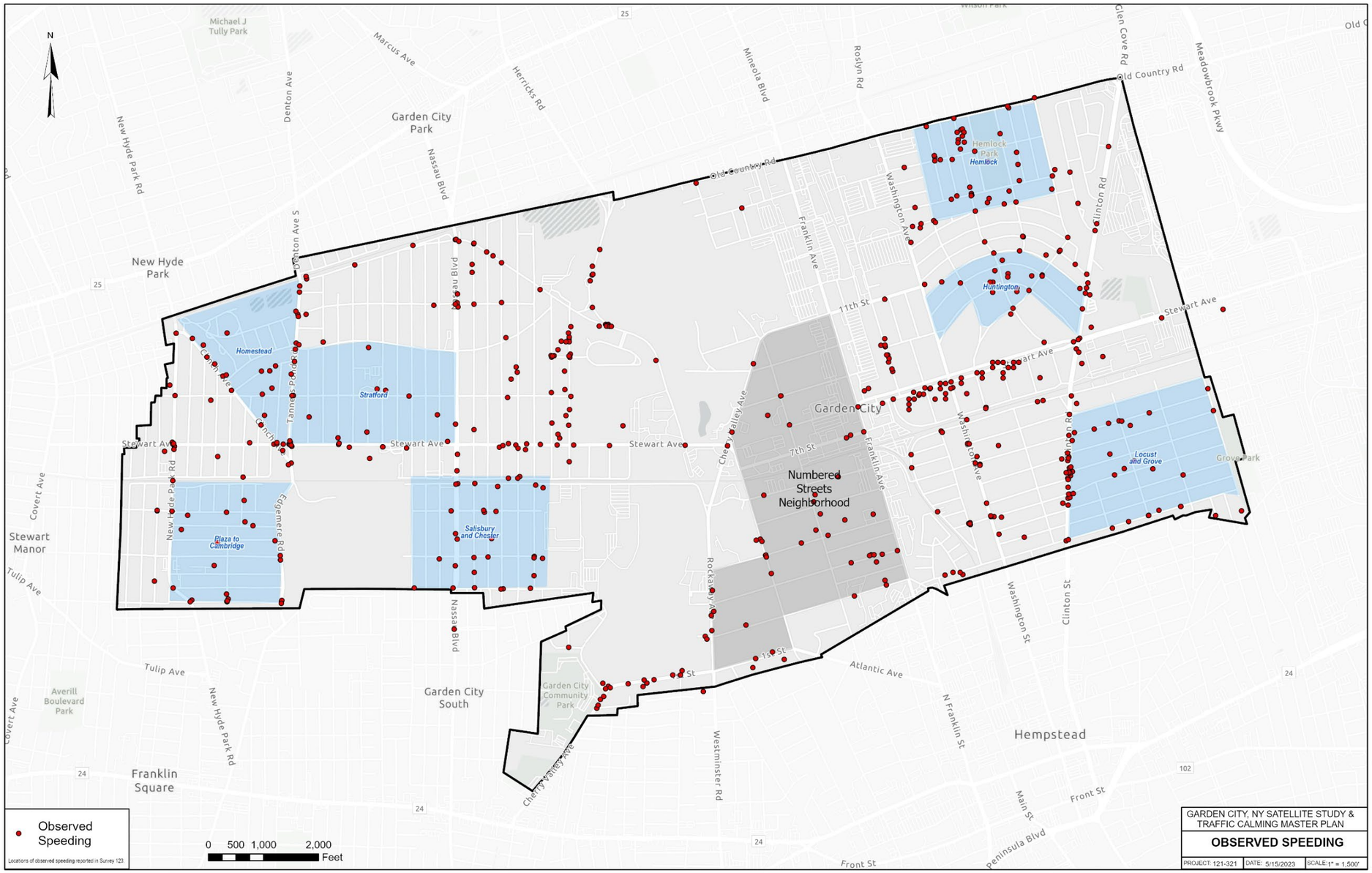

Figure 10: Observed locations of speeding from Survey 123 data

3. Vehicle Crashes

CM requested crash data from NYSDOT for a period between January 2017 and December 2021. This data was then mapped by CM staff to determine where crashes occurred within a study area. Although this data was not used extensively to make recommendations, crash frequency could be a useful way to prioritize more dangerous streets or intersections (see Appendix V – Crash Data)

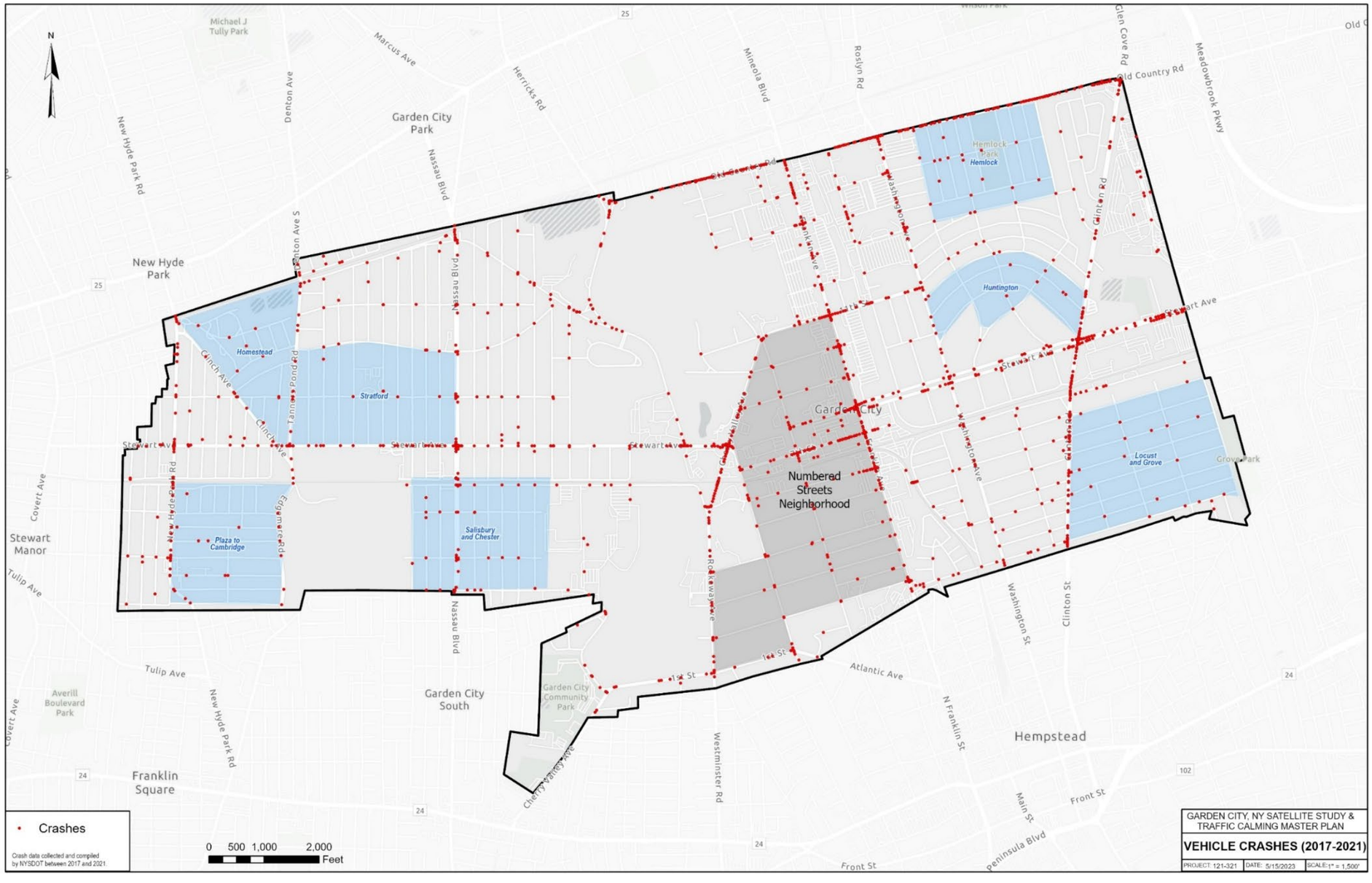

Figure 11: Map of all crashes in the Village of Garden City, 2017-2021, NYSDOT

A comparison of Garden City crash rates with crash rates with crash rates in both Nassau County and New York State overall shows that crashes in the Village have indeed been rising disproportionately. See Appendix VI – Crash Data for more data compiled by CM to inform placement of traffic calming devices.

Year	2017	2018	2019	2020	2021
Garden City	822	995	933	569	909
Nassau County	29,557	40,306	41,862	29,672	36,665
New York State	309,371	434,596	447,021	327,390	372,159

Figure 12: All crashes in the Village, the County, and the State. Source: NYSDOT, ITSMR

IV. Community Engagement

CM developed a cost-effective public engagement plan, giving the community an opportunity to share their concerns about traffic in the study areas through multiple methods. CM worked closely with the Traffic Commissioners and Village staff to publicize the study and hosted all project materials on a simple, publicly accessible website: https://gardencitytrafficcalming.com/.

The engagement process primarily used two methods. The first was an online platform called Survey 123 that gathered location-specific feedback from the broader community. The second was the formation of three Community Advisory Committees (CACs), which allowed a smaller group of volunteers to review possible treatments, provide feedback, and help shape the development of concepts. The structure and course of community engagement was approved by the Village Traffic Commission, who held an active role throughout the project. There were also two public meetings – a Kickoff meeting at the start of the study and a special CAC meeting open to the public towards the end of the project.

A. Kickoff Meeting

On September 28, 2022, CM held an in-person Kickoff Meeting in Garden City. After working with Village Trustees and Administrators to define general study areas, the project needed local knowledge of street segments or intersections that Village residents were most concerned about. In an introductory presentation, CM contextualized the selected study areas, shared some observations about the existing conditions of Village streets, introduced several possible traffic calming treatments for consideration, and solicited feedback through Survey 123 and direct comment about which locations might benefit from the demonstrated treatments.

Figure 13: Study Kickoff meeting was held at the Senior Center on September 28, 2022.

Figure 14: Satellite Traffic Calming Study Flyer

C. Survey 123

Survey123 is a software tool offered by Esri that combines traditional surveying techniques with digital mapping. A custom-built survey allows respondents to answer questions, add comments, and use in-app web map to “drop pins” at locations of traffic safety concern. These results were then used in a general assessment of where traffic calming measures would be most effective. Survey 123 was used in the Numbered Streets study and was well received. For this study, the survey was promoted with flyers distributed to the Parent Teacher Associations, via the Village website, and through the Village’s social media accounts. The platform was open for input from September 28, 2022 to November 2, 2022, and generated a total number of 1,056 pins representing locations where residents felt traffic calming treatments could be useful.

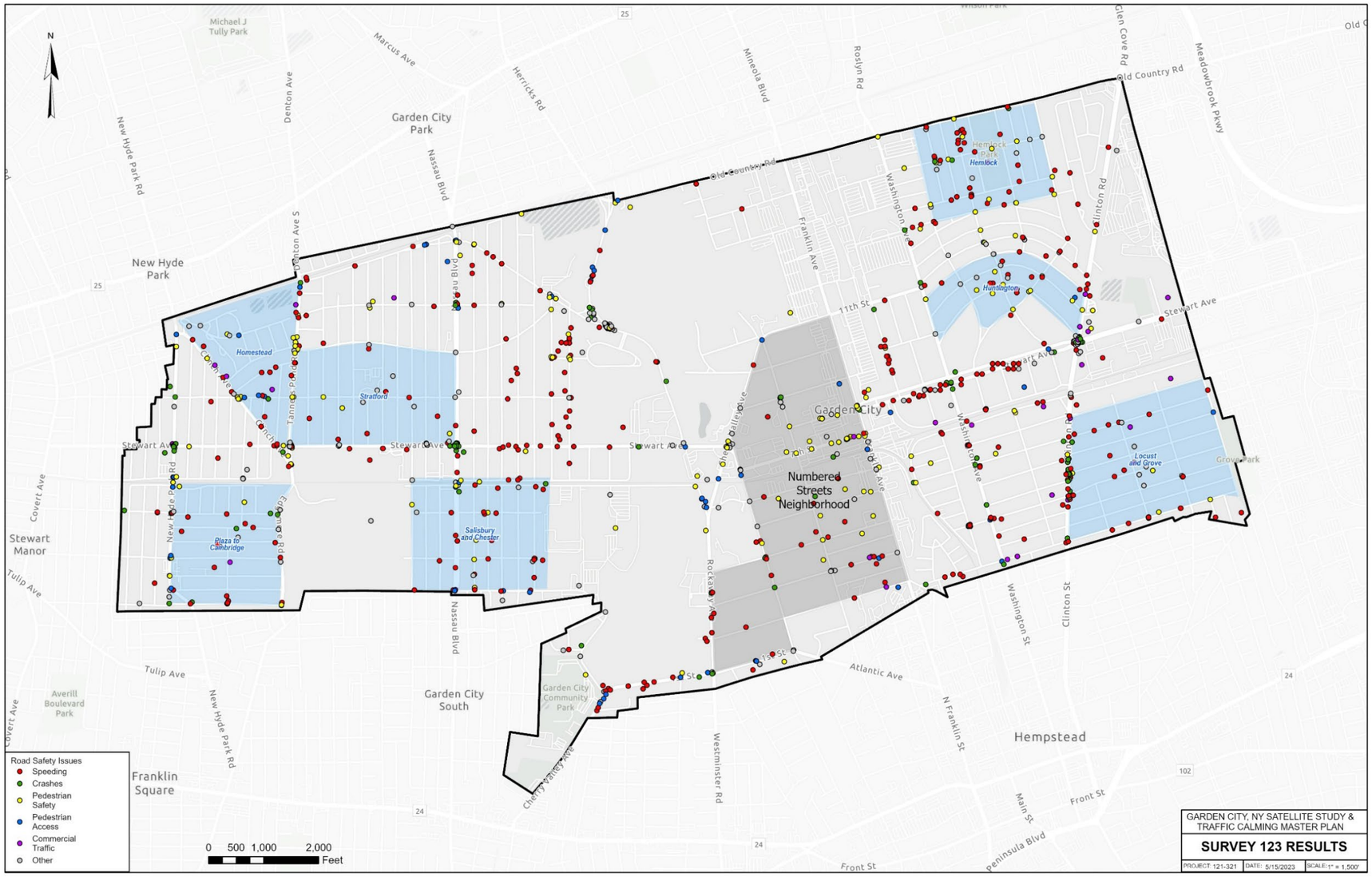

Figure 15: Survey 123 pins mapped to the study areas

Community members responding to Survey 123 questions were prompted to choose their top concern related to traffic calming in Garden City. 38% of respondents, the highest percentage, chose speeding. The next most common selection, at 20%, was pedestrian safety. The platform also provided space for additional comments on specific intersections or locations where problems were observed. CM was able to use this data in the process of recommending placement of traffic calming treatments.

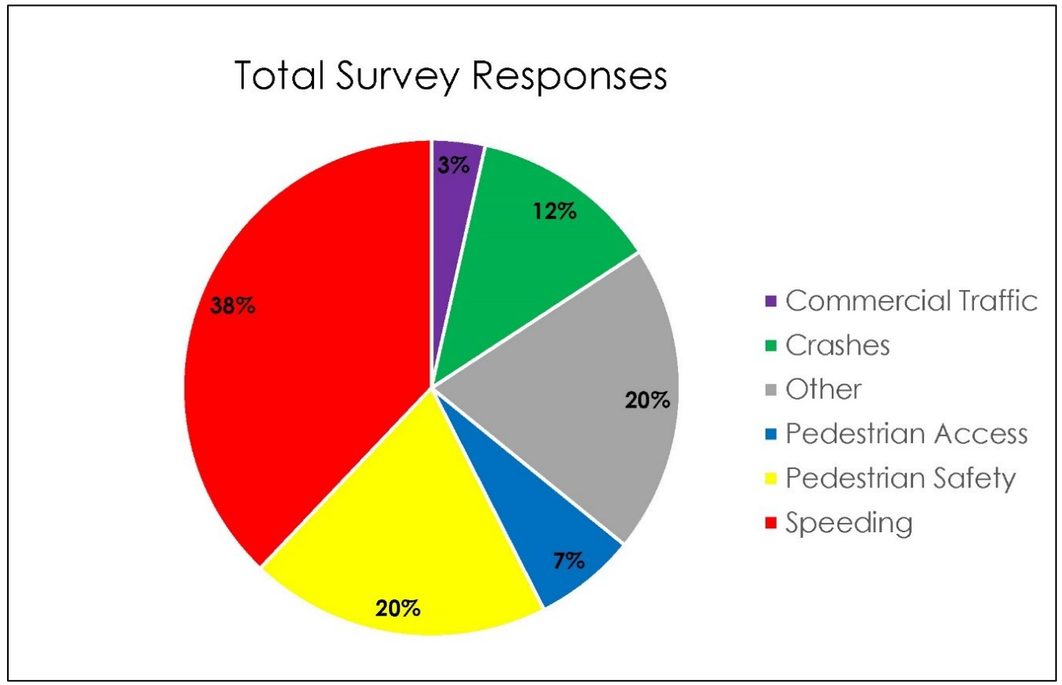

Figure 16: Survey Responses Grouped by Resident Concern

D. Community Advisory Committees (CAC)

To ensure that community representatives were able to remain closely involved with the study, CM developed a Village Community Advisory Committee. Following outreach to establish the CACs, CM held two sets of meetings with each group divided into specific presentations for the East, West, and Estates sections of the Village. Meeting #1 was a listening session and Meeting #2 was a concept review. This model was successfully used for the Numbered Streets Study which is why the Village endorsed using it again for this study.

CAC Meeting #1 was a listening session was held in person, with an option for participation via Zoom, with two meetings on November 14, 2022, and one meeting on November 21, 2022 held in the Garden City Senior Center (see Appendix II – CAC Listening Session – Presentation and Meeting Summary). These meetings served to introduce CM staff to the members of the CAC, explain the results of data collection and analysis, and to present initial responses from the Survey123 online application. CM presented materials giving an overview of proposed traffic calming treatments that included design criteria, benefits, cost ranges, and other general considerations. The committee inquired about the feasibility of different treatments and provided CM with a more granular perspective on traffic and pedestrian patterns in the study areas. Some comments revealed that residents were especially concerned with speeding around schools and Long Island Railroad stations, as well as deterring use of streets as cut throughs for traffic.

After the initial CAC meetings, CM compiled the feedback and shared notes with community members. The notes from the CAC meetings as well as the recordings from Zoom were published on the project website The second concept review meeting series was also held in person, with an option for participation via Zoom, with two meetings on March 13, 2023 held in the Village Library, and one meeting on March 14, 2023 held in the Village Hall (see Appendix III – CAC Concept Review – Presentation and Meeting Summary). At this meeting, CM presented materials showing sketched concepts of traffic calming treatments at specific locations. CM staff explained the physical construction, intended uses, and general costs of each concept. The CAC members then asked questions to determine how each design would affect parking, visibility, sewer access, vehicle collisions, and other relevant factors. CM was able to collect the feedback and use it to make changes in the proposed sketches, as well as develop new treatment sketches to show the CAC based on their suggestions of new locations to evaluate.

Figure 17: The East and Estates sections held CAC Meeting #2 at the library on March 13, 2023. (Source R. Suozzi)

E. CAC Special Review Meeting

On April 27, 2023, a special meeting was hosted by the Traffic Commission. It was advertised as a Special Review Meeting for all three CACs but was also open to the public (see Appendix IV – CAC Special Review – Presentation and Meeting Summary. The meeting was publicized via emails to the CACs as well as on the Village website and the Village's social media. CM met with the CACs at the Village Hall, with an option for participation on Zoom, to present several new concept sketches and provide a special review of the treatment proposal process so far. Materials presented included many additional concept sketches of treatments developed from CAC feedback, proposals for methods the Village might use to create a protocol for resident input and prioritization of traffic calming treatments, and discussion of other Village-wide measures including speed limit reduction. Some feedback expressed approval of treatment designs near schools, questions about the maintenance of emergency service vehicle routes, and general concern about trucks passing through the neighborhood. Additionally, the meeting provided a platform to share a testimonial from Garden City resident Rose Powers about her experience with and support of residential neighborhood speed humps as effective traffic calming. See Appendix V – Testimonial from Village Resident Rose Powers for details.

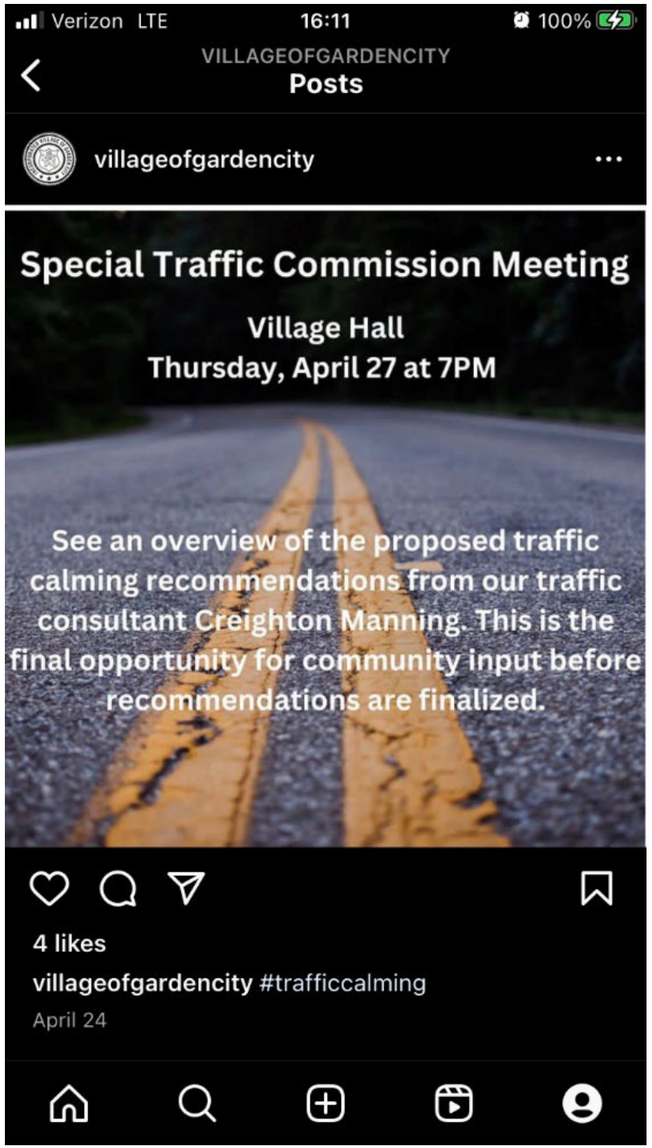

Figure 18: The Village promoted all public meetings on social media

V. Traffic Calming Strategies

A. Traffic Calming Treatments

CM researched and reviewed a variety of reports, guides, and literature on traffic calming treatments to assess which measures would be most appropriate for the study area. These data sources included case studies on specific calming techniques across the United States as well as documentation from leading transportation bodies such as the Federal Highway Administration (FHWA)[5], the National Association of City Transportation Officials (NACTO)[6], the Institute for Transportation Engineers (ITE)[7], and the Transportation Research Board (TRB), as well as reports from municipalities such as Stamford, CT; Berkeley, CA; Cambridge, MA; and others. After assessing this body of research, CM identified twelve traffic calming techniques that could be most compatible with the study area. These techniques are striping and signage, speed humps, speed cushions, speed tables, chokers (neckdowns), chicanes, raised crosswalks, raised intersections, traffic circles, road diets, on-street parking, and bike lanes.

CM provided a basic **overview** of each treatment, **possible benefits,** and **considerations** relevant to each treatment. There is also a list of more policy and education-oriented traffic calming approaches at the end of the section.

1. Striping and Signage

OVERVIEW: Striping and signage refers to the use of road markings and signs to narrow lanes, reduce speeds, and encourage drivers to drive more slowly and safely. There are no volume or speed criteria needed to implement these measures. The installation of signage and the narrowing of lanes generally occurs simultaneously with a focus on intersections.

POSSIBLE BENEFITS:

- Flexible, cost-effective, and widely used treatment
- Requires no special maintenance

CONSIDERATIONS:

- Less permanent than extending curbs
- Perceived as less effective because of the lack of physical constraints

Figure 19: Striping, or pavement markings, can be used to narrow roadways

2. Speed Humps

OVERVIEW: Speed humps are permanent installations generally made of existing road material. They are generally 12 feet in length and 3 to 4 inches higher than the road surface at their peak. Implemented with warnings signs and pavement markings (striping) to make them more visible. Speed humps may not be appropriate in areas exceeding an AADT of 3,500 vehicles or posted speeds lower than 30 mph. According to studies, average speeds between humps can be reduced by 20%-25%.

POSSIBLE BENEFITS:

- Can be constructed with temporary materials to assess impacts to street functionality
- Damage to speed humps from snow removal operations is usually minimal; impacts can be mitigated with special snow removal protocols and advanced warning to alert snowplow operators

CONSIDERATIONS:

- Speed humps can generate noise if vehicles travel over the humps at higher speeds
- Presence of drainage structures, driveways, and lighting need to be considered when siting speed humps
- Not ideal for transit routes or routes regularly used by emergency services vehicles. According to the FHWA Traffic Calming ePrimer, typical delay for a fire truck is in the 3 to 5 second range; for an ambulance with a patient, delay can be as much as 10 seconds
- Amount of available on-street parking may be reduced
- On roadways without curbs, it is recommended to place signs, bollards, or other vertical elements adjacent to the speed humps to prevent vehicles from driving around them outside of the roadway

Figure 20: Speed humps are effective at slowing traffic

[5] https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm
[6] https://nacto.org/publication/urban-street-design-guide/street-design-elements/
[7] https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

3. Speed Cushions

OVERVIEW: Speed cushions are two or more raised areas, usually made of a composite material. Implemented with warnings signs and pavement marking (striping) to make them more visible. While similar in design and function to speed humps, speed cushions are made with gaps that allow for emergency vehicles and other vehicles with wider wheelbases to pass without reducing speed. Speed cushions are considered most appropriate for streets with an AADT lower than 3,500 vehicles and a posted speed limit of 30 mph or less. Studies show this treatment is effective at reducing 85th percentile speeds between 5 and 7 miles per hour[8].

POSSIBLE BENEFITS:

- Recommended on known routes for emergency services
- Damage to speed cushions during snow removal can be mitigated with special snow removal protocols and advanced warning to alert snowplow operators

CONSIDERATIONS:

- Given the gaps in the design, it is important that the cushions are highly visible
- Routine maintenance is required to ensure that cushions are adequately adhered to the roadway surface
- Presence of drainage structures, driveways, and lighting need to be considered when siting speed cushions

Figure 21: Speed cushions allow emergency services vehicles to pass without reducing speed

4. Speed Tables

OVERVIEW: Speed tables are long, raised, permanent speed humps with flat sections and end ramps to serve as pedestrian crossings. Implemented with warnings signs and pavement marking (striping) to make them more visible. They are also referred to as "raised crosswalks." Speed tables are considered most appropriate in areas where AADT is below 3,000 and the posted speed limit is less than 30 mph.

POSSIBLE BENEFITS:

- Speed tables are less vulnerable to damage from snow removal operations but advanced warning to alert snowplow operators is recommended
- If implemented with a pedestrian crossing, speed tables should not have an impact to on-street parking

CONSIDERATIONS:

- Higher cost than individual speed humps and are often implemented with other streetscape improvements
- Emergency services prefer 22-foot-wide speed tables to traditional 12-foot-wide speed humps
- Typically installed on streets with curbs and gutters; often installed on streets with sidewalks but not required
- Presence of drainage structures, driveways, and lighting need to be considered when siting speed tables

Figure 22: Speed tables are often used with mid-block crossings.

[8] FHWA, https://highways.dot.gov/safety/speed-management/engineering-speed-management-countermeasures

5. Curb Extensions (Bump-outs, Chokers, Pinch Points, Neck Downs, or Gateways)

OVERVIEW: Chokers are mid-block curb extensions that extend the curb line into the street, resulting in a physically narrower roadway that promotes a reduction in vehicle speeds, as vehicles must adjust to pass oncoming traffic in smaller spaces. Chokers are known as "pinch points" or "bump-outs" in the middle of the block or "neckdowns" or "gateways" when used at intersections. Implemented with warnings signs and pavement markings (striping) to make them more visible. Designs may also include vertical elements to increase visibility. In addition to reducing speeds, chokers create space for beautification and landscaping. Chokers are considered most appropriate in areas where AADT is between 1,000 and 6,000 and the posted speed limit is less than 40 mph.

POSSIBLE BENEFITS:

- Chokers can incorporate beautification or landscaping features into the design
- Field studies of chokers measured reductions between 1 and 4 mph for 85th percentile speeds[9]

CONSIDERATIONS:

- Presence of drainage structures, driveways, and lighting need to be considered when siting chokers
- Chokers will likely reduce the total amount of on-street parking
- More easily implemented on a street with curbs and gutters
- Depending on dimensions of the roadway, chokers can also reduce a two-lane road to one lane for short distances, creating a yielding condition (*CM is not proposing any one-lane chokers as part of this study.*)
- Gateways could impact traffic operations by increasing vehicle delays at intersections (depending on the locations of the treatment, additional traffic analysis may be recommended to support the proposal.)

Figure 23: Chokers can be used to narrow the street by extending one or both curbs

6. Chicanes

OVERVIEW: Chicanes are roadways are designed to add curves to an otherwise straight path, forcing motorists to steer back and forth. Implemented with warnings signs to alert motorists to the alignment of the roadway. The winding of the roadway forces drivers to be more careful and reduce vehicle speeds. This measure is considered most appropriate in areas where AADT is less than 3,500 and posted speeds are less than 35 mph.

POSSIBLE BENEFITS:

- Chicanes can incorporate beautification or landscaping features into the design
- Field studies of chicanes measured speed reductions between 3 and 9 mph for 85th percentile speeds[10]

CONSIDERATIONS:

- Presence of drainage structures, driveways, and lighting need to be considered when siting chicanes
- Chicanes will likely reduce the total amount of on-street parking

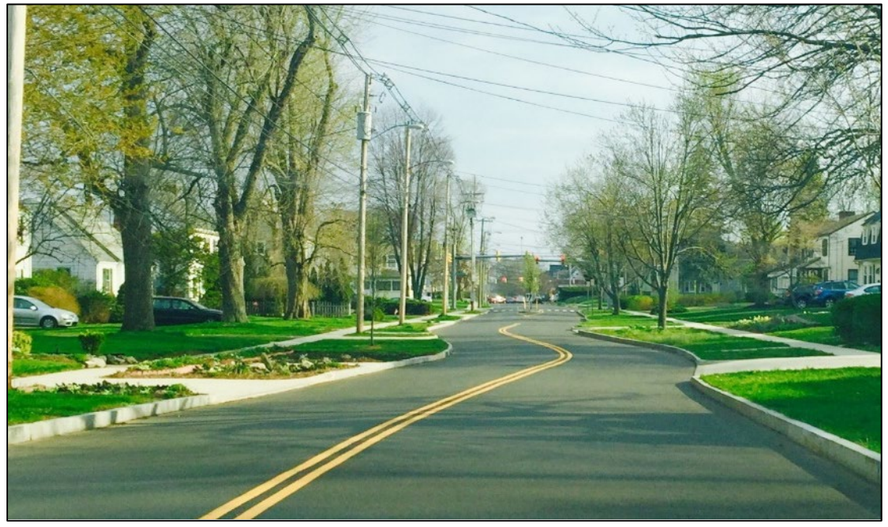

Figure 24: Chicanes change the alignment of the roadway which encourages slower speeds to navigate.

[9] *FHWA, Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed, July 2014*

[10] *FHWA, Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed, July 2014*

7. Raised Crosswalks

OVERVIEW: Raised crosswalks are ramped speed tables spanning the entire width of the roadway and placed either at intersections or midblock crossing locations. The crosswalk is demarcated with paint and/or special paving materials. These crosswalks act as traffic calming measures that allow the pedestrian to cross at grade with the sidewalk. Elevating the crossing makes the pedestrian more visible, and approach ramps can reduce vehicle speeds and improve rates of yielding. Raised crosswalks are useful on both local and collector streets with pedestrian crossing desire lines, as well as pick-up/drop-off zones or areas of commercial activity. Raised crosswalks are considered most appropriate in areas where AADT is below 9,000 and the posted speed limit is 30 mph or below.

POSSIBLE BENEFITS:

- According to the FHWA, raised crosswalks can reduce pedestrian crashes by 45%[11]
- Enhances the pedestrian environment

CONSIDERATIONS:

- Not suitable for truck routes or emergency routes
- Presence of drainage structures, driveways, and lighting need to be considered when siting raised crosswalksCan complicate snow removal

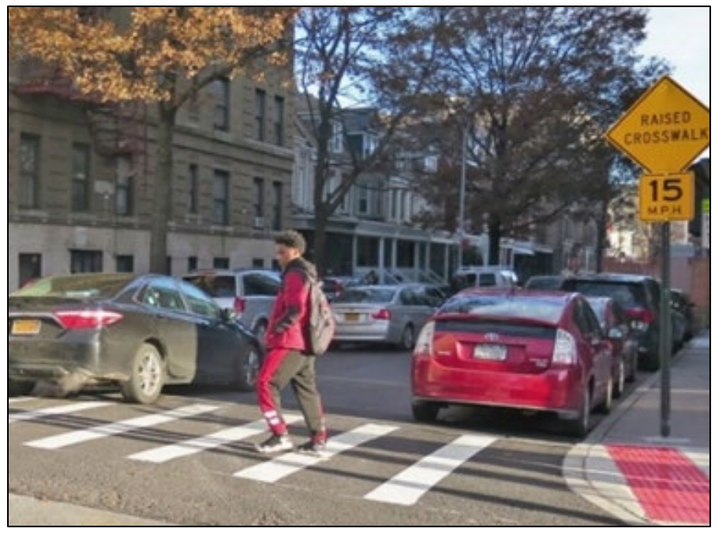

Figure 25: Raised crosswalks slow turning vehicles at intersections

8. Raised Intersections

OVERVIEW: Raised intersections are an expansion of a single raised crosswalk and provide additional traffic calming value by slowing down all movements at an intersection. Typically installed at stop or signal controlled intersections that have a high volume of pedestrians, raised intersections are considered most appropriate in areas where AADT is below 9,000 and the posted speed limit is 30 mph or below.

POSSIBLE BENEFITS:

- Can act as a comprehensive gateway treatment to a traffic calming network
- Enhances the pedestrian environment and encourages vehicle yielding

CONSIDERATIONS:

- Slope of raised crossings can divert storm water and cause ponding depending on the pitch of the roadway
- Can interfere with existing drainage and utilities

Figure 26: Raised intersection slow turning vehicles at all movements

[11] Thomas, L., Thirsk, N. J., & Zegeer, C. (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington D.C.

9. Median Islands

OVERVIEW: A median island is a raised island installed in the center of a street, which traffic drives around. Narrowing lanes encourages vehicular traffic to move at slower speeds, and a raised median can also provide pedestrian refuge if implemented at an intersection or midblock crossing.

POSSIBLE BENEFITS:

- Can shorten pedestrian crossing distance at intersections
- Separates opposing vehicle travel lanes and reduces opportunities for collisions
- Can be used on curved roadways to encourage slower speeds
- Can be used as a landscaping opportunity

CONSIDERATIONS:

- Can restrict access to driveways
- May require removal of on-street parking, depending on roadway width
- May interfere with existing utilities or drainage structures

Figure 27: Raised median island at a midblock location

10. Traffic Circles

OVERVIEW: A traffic circle is a raised island, placed within an unsignalized intersection, which traffic drives around. The shape of the treatment requires that a driver slow down when entering the intersection, even when continuing through on the same street. Traffic circles also reduce the number of turning movements and angled intersections which restricts opportunities for crashes. This treatment can be installed as a flush, painted area but is most effective when built with vertical elements or a raised curb.

POSSIBLE BENEFITS:

- Traffic circles can be landscaped to incorporate beautification features
- Islands can be mountable for trucks or emergency vehicles

CONSIDERATIONS:

- Most effective at reducing speeds when several are used in a series
- Design may interfere with street parking
- May interfere with existing utilities or drainage
- May require additional street lighting

Figure 28: Traffic circles can be built with permanent or mountable materials to slow vehicles approaches at intersections

11. Road Diets

OVERVIEW: A strategic removal of space on a roadway with more than one travel lane, road diets narrow the roadway and restrict passing movements to calm traffic and reduce speeds. Lane reduction is also an opportunity to include space for other uses, such as bicycle lanes, sidewalks, pedestrian refuge islands, transit priority use, or on-street parking. Road diets can be appropriate for any volume that can be accommodated with less capacity and are appropriate for any common urban speed limit.

POSSIBLE BENEFITS:

- Can be appropriate on transit, truck or emergency routes
- Expected crash reduction between 19% and 47%[12]
- Reallocation of space can also provide opportunity for landscaping or beautification

CONSIDERATIONS:

- Most common on a four-lane segment, but can be applied on a wide two-lane segment
- A common vehicle volume threshold for reference is 20,000 vehicles per day. A road diet may be less appropriate for roadways with volumes over 20,000 per day[13]

Figure 29: Wide two-lane street before a road diet, with excess vehicle capacity

12. Bicycle Lanes

OVERVIEW: While bicycle lanes do provide safe roadway space for bicyclists, their benefits extend beyond cycling. Because the lanes narrow the roadway, this treatment has additional traffic calming benefits on street segments and can help reduce speeds at intersection approaches. Often requiring a road diet for their implementation, bicycle lanes provide the benefits of a road diet with added space for encouraging bicycling as an alternate mode of travel.

POSSIBLE BENEFITS:

- Can encourage bicycling activity and expand to a local bicycle network

CONSIDERATIONS:

- Can remove space for on-street parking or other uses
- Can interfere with other traffic calming treatments or speed reducers

Figure 30: The same street as shown in Figure 29 after implementation of a road diet with standard bike lanes

[12] FHWA "Evaluation of Lane Reduction 'Road Diet' Measures on Crashes." FHWA Report No. FHWA-HRT-10-053. (Washington, D.C: 2010)

[13] FHWA, https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/ch3.cfm

13. Parking Lanes

OVERVIEW: On-street parking can narrow existing roadway travel lanes by using space for parked cars and strategically restricting traffic flow. Different parking configurations have different footprints and operational effects. Parking lanes can be appropriate for all levels of traffic volume and at all common urban speed limits.

POSSIBLE BENEFITS:

- Greatest effect on speed uses a narrow two-way street with parking on either side
- Parked vehicles can act as a buffer for pedestrians on an adjacent sidewalk
- Can be integrated with landscaping or beautification elements

CONSIDERATIONS:

- Minimal reduction of vehicle/pedestrian conflicts
- Combining parking with other uses such as bicycle facilities may require additional roadway width
- Can affect driver visibility at intersections and midblock pedestrian crossings

Figure 31: On-street parking for a residential street

B. Other Traffic Calming Strategies

In addition to geometric or physical treatments in the roadway, traffic calming can be approached through policy and educational outreach. A comprehensive traffic calming plan would consider both methods to achieve maximum effects. In recent years, many municipalities nationwide have developed policy strategies aimed at reducing driver speeds and discouraging unsafe driver behavior by lowering thresholds and expanding traffic enforcement.

14. Speed Limit Reduction

OVERVIEW: Speed control is considered one of the most important methods available for reducing fatalities and serious injuries in crashes on roadways. A driver traveling at 30 mph has a 45% chance of killing or seriously injuring a pedestrian in a collision. If the driver is travelling at 20 mph, the chance of a fatality or serious injury drops to 5%[14]. Many states, including New York, have seen local speed limit reductions as part of a growing national effort to reduce traffic deaths.

POSSIBLE BENEFITS:

- Requires few physical modifications beyond adjusting posted signage
- Roads with lower speed limits can accommodate more traffic calming treatments

CONSIDERATIONS:

- Land use of area should be considered when determining speed limits
- Additional speed management techniques should be considered
- Town/Village jurisdictional issues could limit or complicate policy efforts

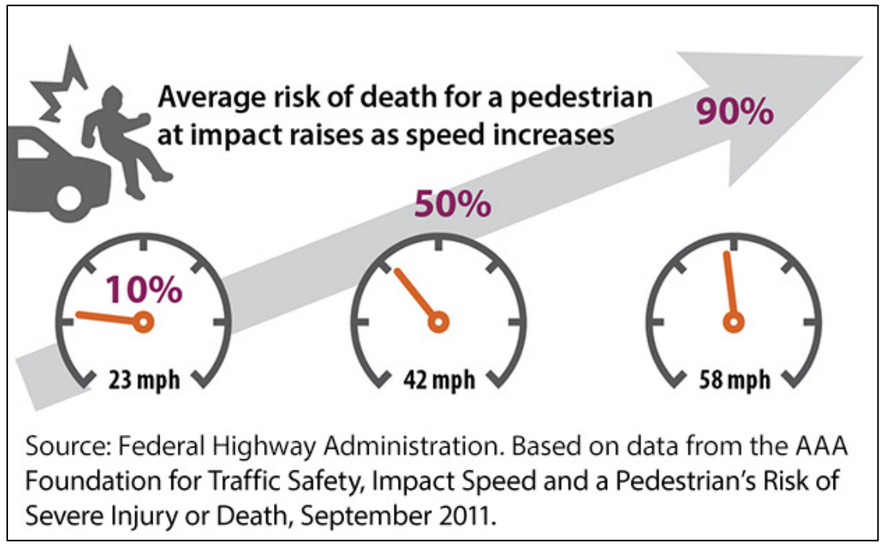

Figure 32: Statistics on likelihood of pedestrian fatality in crashes at different speeds. Source: FHWA

[14] Pilkinton, Paul. Reducing the speed limit to 20 mph in urban areas: Child deaths and injuries would be decreased. BMJ, Published April 29, 2000

15. Automated Enforcement

OVERVIEW: Speed safety cameras are an effective and reliable technology to increase the effect of traditional ticketing enforcement, engineering controls, and education to reduce speeding overall. Cameras are most effective when sited based on analysis of roadway types, times of day, and types of road users most impacted by crashes in an area. They can be installed as fixed units, stationary cameras, point-to-point units that record average speed over distance, or mobile units to catch speeding at different sites.

POSSIBLE BENEFITS:

- Automation could reduce existing geographic or cultural biases when compared to traditional driver enforcement
- A higher rate of enforcement enhances deterrent effects of speed legislation
- Can cause speed reduction both upstream and downstream of the actual enforcement site

CONSIDERATIONS:

- Speed cameras should be regularly evaluated to best calibrate their placement toward producing results
- Installation should be coordinated with public involvement and stakeholder coordination

Figure 33: A 25 mph speed limit enforced by cameras with bicycle infrastructure

16. Educational Programs

OVERVIEW: Because public participation is a critical part of the planning process, keeping communities educated about new and effective traffic calming methods is essential to their implementation and success. Many municipalities nationwide have implemented Vision Zero plans, creating and updating materials that show the impacts of speeding and the consequences of roadways designed for vehicle capacity on vulnerable users like pedestrians and bicyclists.

POSSIBLE BENEFITS:

- Generates local interest in traffic calming treatments
- Provides opportunities to share information with and use findings from other places

CONSIDERATIONS:

- Educational materials must be coordinated with engineering and policy treatments for maximum effectiveness

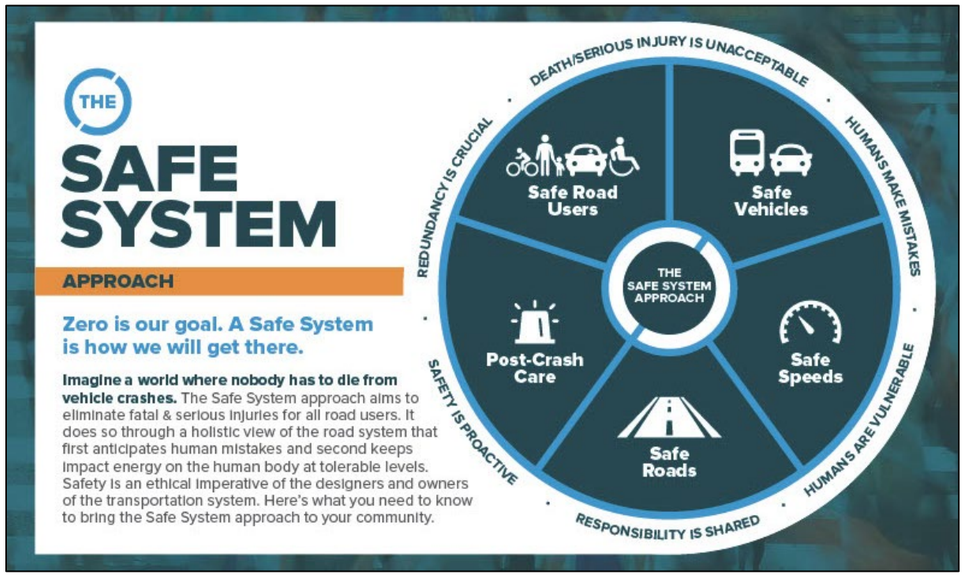

Figure 34: FHWA's Safe System Approach, template for local educational efforts

VI. Suitability Analysis and Concept Sketch Site Selection

A. Suitability Analysis

To select appropriate locations for traffic calming treatments, CM used Geographic Information Systems (GIS) to conduct a suitability analysis using the available data to determine if the various traffic calming treatments being discussed through this process would be suitable or not on each street segment in the Village of Garden City.

As explained in the Traffic Calming Treatments section of this report, there are several criteria which are used to initially assess whether a location might be suitable for a treatment. The suitability model developed by CM used criteria such as traffic volume (Average Annual Daily Traffic or AADT), posted speed limit, roadway width, and the number of lanes. The thresholds applied to those data points to determine CM's recommendation on suitability were ***informed*** by professional and federal organizations including the Institute of Transportation Engineers (ITE), the Federal Highway Administration (FHWA), and the National Association of City Transportation Officials (NACTO). CM used professional judgment and identified precedents which seemed appropriate and applicable. For example, the maximum AADT (bi-directional) for speed humps is as high as 4,000 vehicles daily in some cases but also as low as 2,500 in others. CM has recommended 3,500 as a conservative approach, but it should be noted that the case can be made to justify speed humps – and other treatments – in locations where the AADT or some of the other criteria might be different than what was applied in the model. In the same respect, there are some criteria which should be adhered to more closely because of the geometric constraints. For example, any of the treatments which reduce the number, or width, of the travel lanes should be observed more closely.

The data used to inform our analysis was built into the GIS model so that it accounted for a hierarchy of our available data. The ATR's that collected volumes were used first, if available, if not, NYSDOT volumes were used, and if neither ATR nor NYSDOT volumes were available, CM used volume data from Replica. Since each traffic calming treatment has different criteria, CM conducted an analysis for each treatment. Maps that illustrate the suitability of each treatment within the village are presented in the Appendix VII – Suitability Analysis Maps.

B. Site Selection Process

CM used the following pieces of information to develop a list of locations where traffic calming treatments were sketched at the conceptual level. This means that CM proposed developing a basic concept in that location based on an initial review of the suitability analysis, a review of the comments from the Survey 123 app, the existing conditions, and other feedback. Then, CM took these locations to the Traffic Commission, Police Commissioner, and Village Engineer before presenting them at the CAC Concept Review meeting in March. In some cases, the Village staff and leadership concurred with the proposed concept locations and the specific treatments proposed, in other cases they were supportive of a treatment but were not certain that the treatment proposed by CM made sense. The Village leadership also provided additional context for selecting the final list of concept locations taken to the CAC, including the presence of school bus stops, history of issues with cut-through traffic, and knowledge of other specific concerns from residents. The map below represents the final list of locations where CM is proposing the Village explore more closely. CM uses the term ***suitability*** to define their initial review of a specific treatment in a specific location. The next step now that concepts have been developed would be to determine ***feasibility***. The Village will do this in conjunction with the Traffic Calming Request Process explained further in this document.

C. Map of Locations with Proposed Concepts

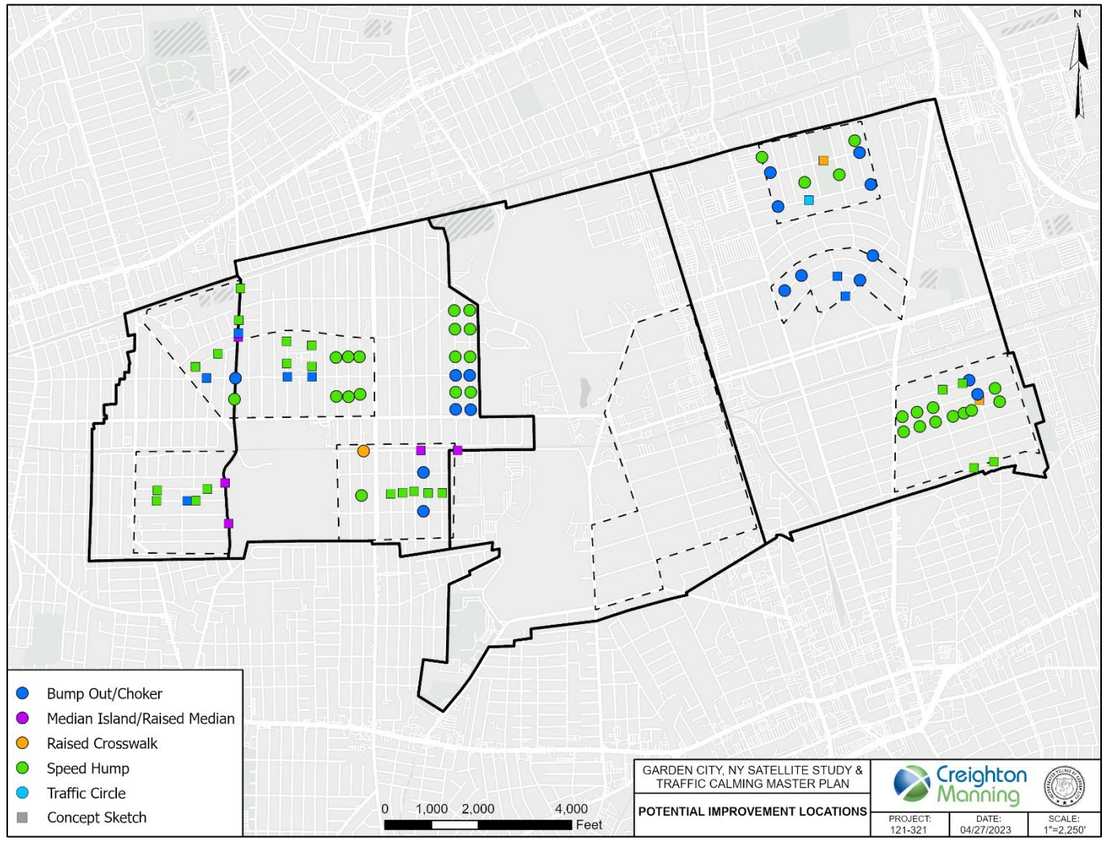

Figure 35: Map showing locations with treatments proposed or concept sketches completed

VII. Concept Plans

A. West Section

Figure 36 shows a conceptual sketch of two sets of intersection bump-outs on Stratford Rd at Garfield St and Wilson St. In addition to visually narrowing the roadway to calm traffic on Stratford Ave, the bump-outs increase driver attention to an existing crosswalk at Wilson St and a proposed crosswalk at Garfield St. Intersection bump-outs shorten pedestrian crossing distances and slow vehicle turns through crosswalks leading to the Homestead School. The CAC members expressed a preference for curb extensions over other traffic calming treatments because of their aesthetic quality and more "permanent" nature. Used here as a "gateway" treatment at an intersection, these curb extensions narrow the opening of the roadway and discourage speeding. Building these curb extensions will slightly reduce the amount of space for on-street parking. The design can include a "vertical" element such as a bollard, but these are not included in the concept sketches. Like speed humps, curb extension spacing along a street segment must be considered.

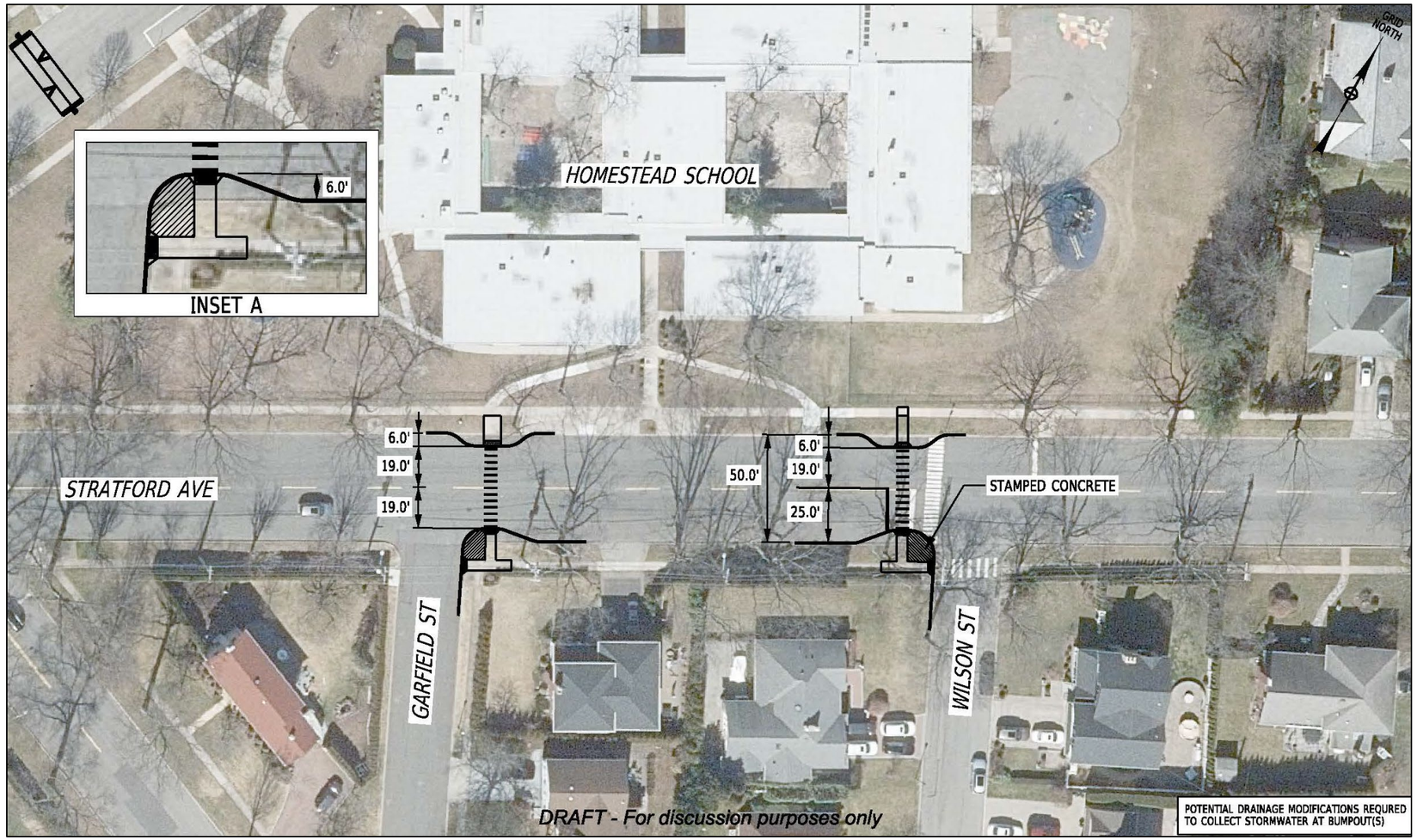

Figure 36: Sketch plan showing bump-outs on Stratford Ave at Garfield St and Wilson St to reinforce pedestrian crossings leading to the Homestead School and calm traffic on Stratford Ave

Figure 37 shows a conceptual sketch of a speed hump network in the Plaza St to Cambridge St section. Based on engineering judgement, community input, and because focusing speed-reducing treatments on multiple routes through a neighborhood expands the influence of traffic calming, a series of speed humps have been sited on two adjacent streets- three (3) speed humps on Princeton St and two (2) on Harvard St, between New Hyde Park Rd and Edgemere Rd.

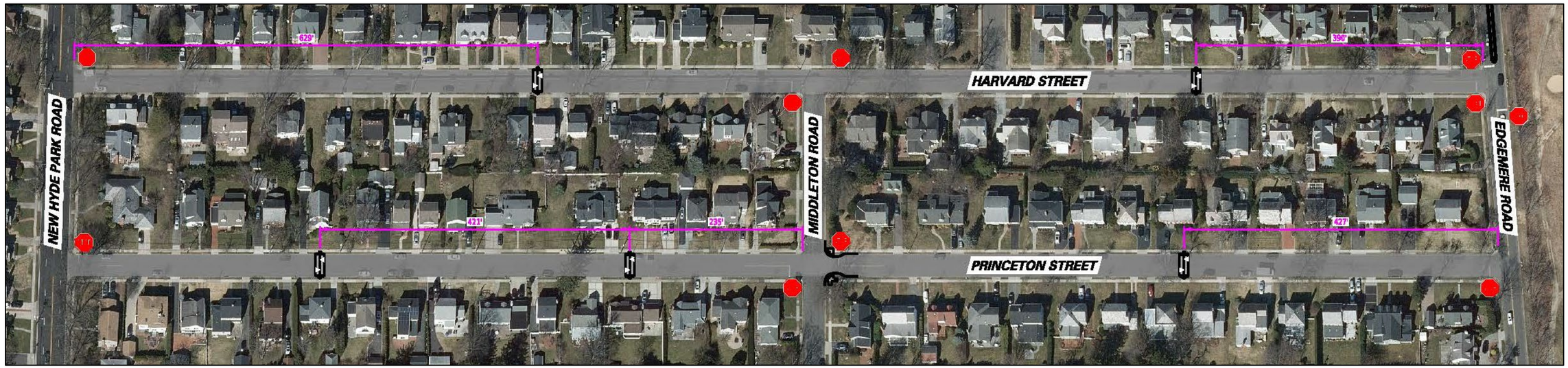

Figure 37: Sketch plan showing multiple speed humps along Princeton St and Harvard St between New Hyde Park Rd and Edgemere Rd. Existing stop signs are shown as red dots

B. Estates Section

Figure 38 shows two speed humps along Tanners Pond Rd between Newmarket Rd and Main Ave, with associated pavement markings and advanced warning signage. Tanners Pond Rd was identified as a candidate with public support during the first CAC listening session. A high rate of survey respondents identified this section as a site of speeding near pedestrian generators. The vertical profile of a 12-foot-long speed hump is 3 inches high in the center, enough to reduce speeds to 15-20 mph. Speed humps are considered most appropriate when placed no more than 500 feet apart.

Figure 38: Sketch plan showing multiple speed humps along Tanners Pond Rd with schematic to show vertical profile

Figure 39 shows a neighborhood speed hump network with two humps each sited on Kilburn Rd, Brixton Rd, Kensington Rd, Whitehall Blvd, and Brompton Rd between Salisbury Ave and Chester Ave. Adjacent to Adelphi University, Village residents expressed concern about cut-through traffic and speeding in the first CAC Listening Session. Additionally, several pins were dropped on these streets via the Survey 123 app, especially Brompton Rd and Brixton Rd. If implemented, and successful, the Village may also consider complementary treatments to Salisbury Ave and Chester Ave.

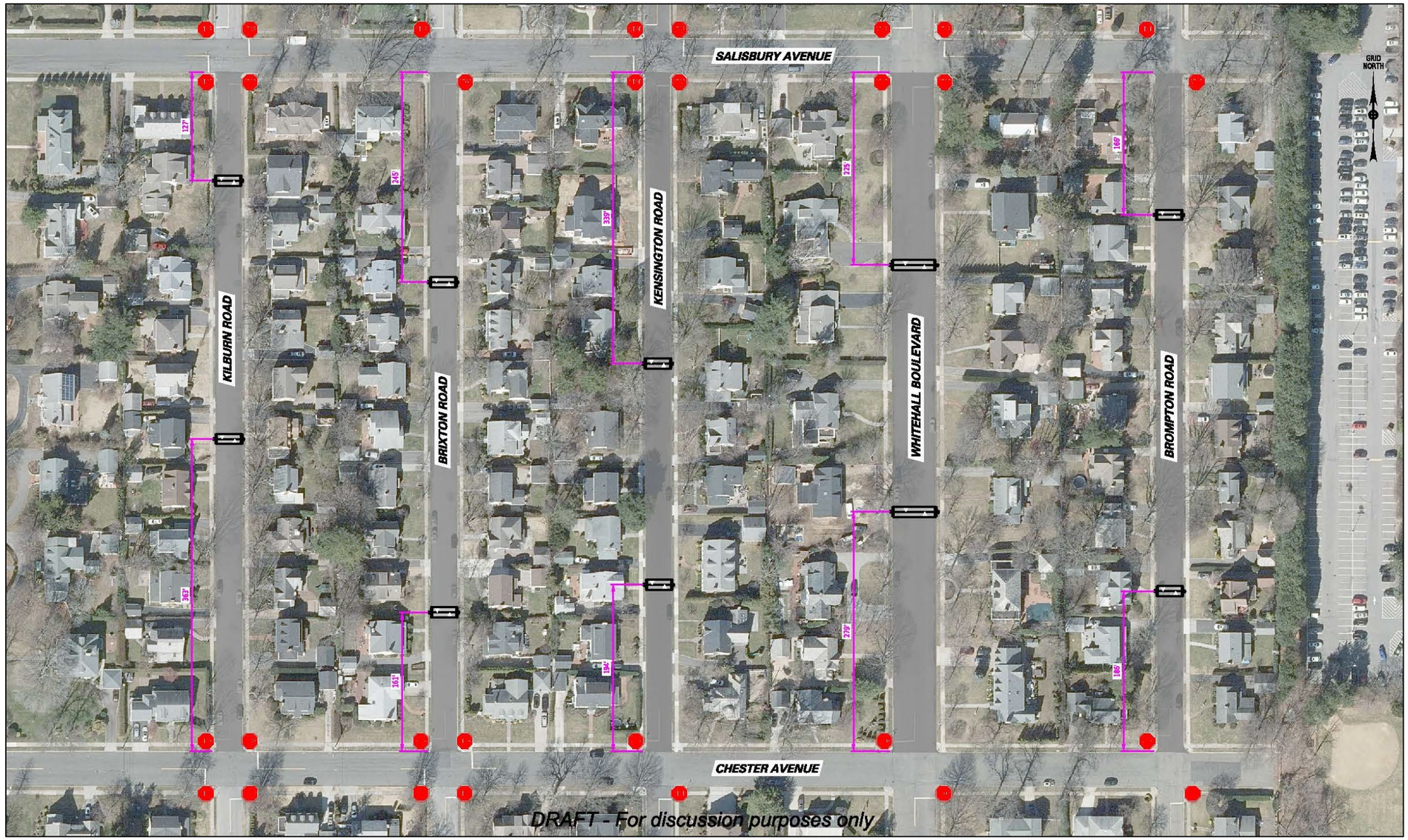

Figure 39: Sketch plan showing speed humps on Kilburn Rd, Brixton Rd, Kensington Rd, Whitehall Blvd, and Brompton Rd between Salisbury Ave and Chester Ave

C. East Section

Figure 40 shows intersection bump-outs on Wetherill Rd at Westbury Rd and Osborne Rd. These treatments shorten crossing distances and slow traffic leading to Triangle Park, a pedestrian destination. Residents reported concerns about drivers both speeding along Wetherill Rd and using it as a cut-through between major streets. Intersection bump-outs here have the double effect of narrowing the roadway to slow traffic and shortening crossing distances for pedestrians.

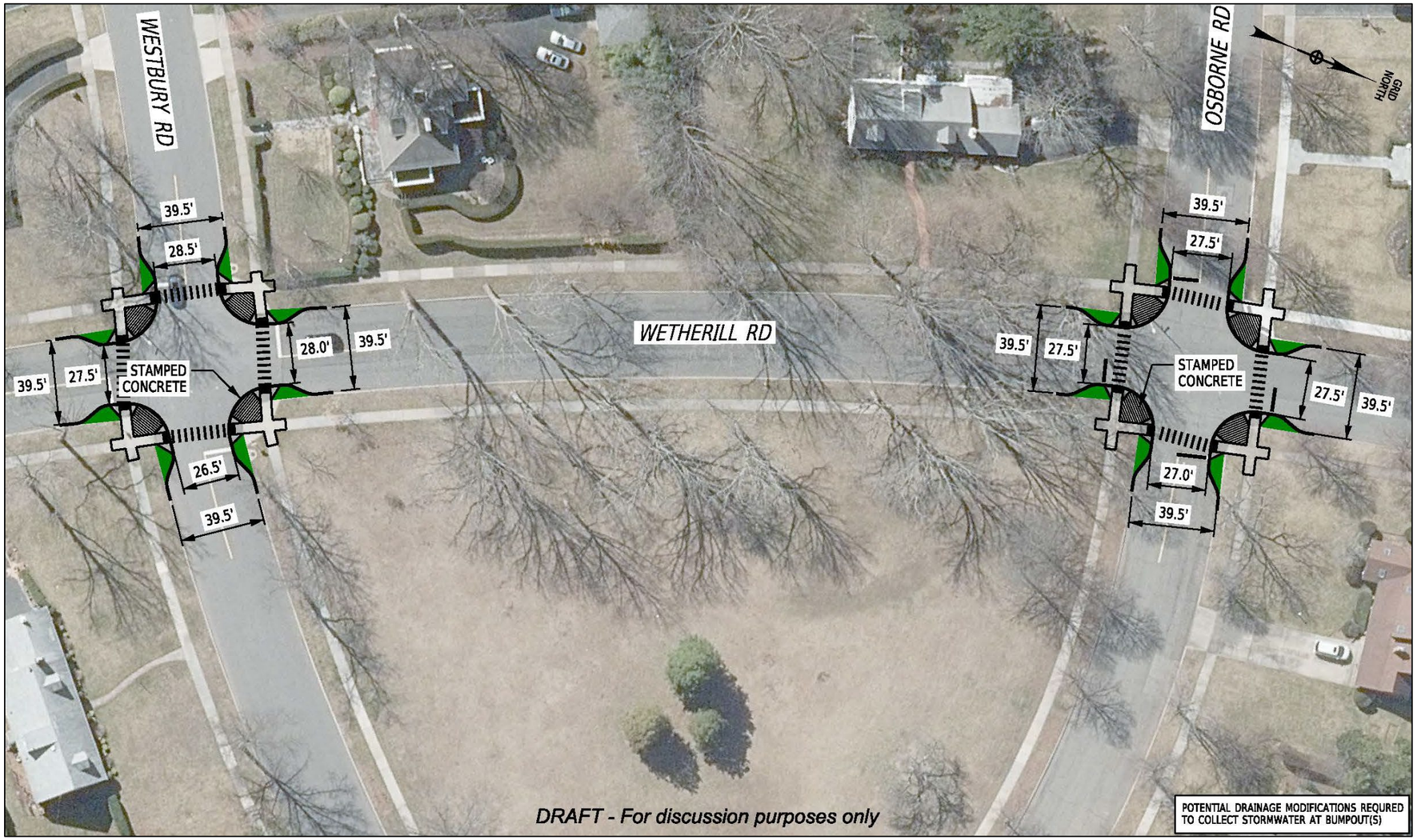

Figure 40: Sketch plan showing intersection bump-puts on Wetherill Rd at Westbury Rd and Osborne Rd near Triangle Park

Figure 41 shows a raised crosswalk reinforcing an existing midblock crossing in front of the Locust School on Boylston St between Locust St and Poplar St. This treatment will slow vehicle traffic and increase pedestrian visibility. Pedestrian vulnerability and dangerous driving behavior during school pick-up and drop-off was mentioned at both CAC meetings.

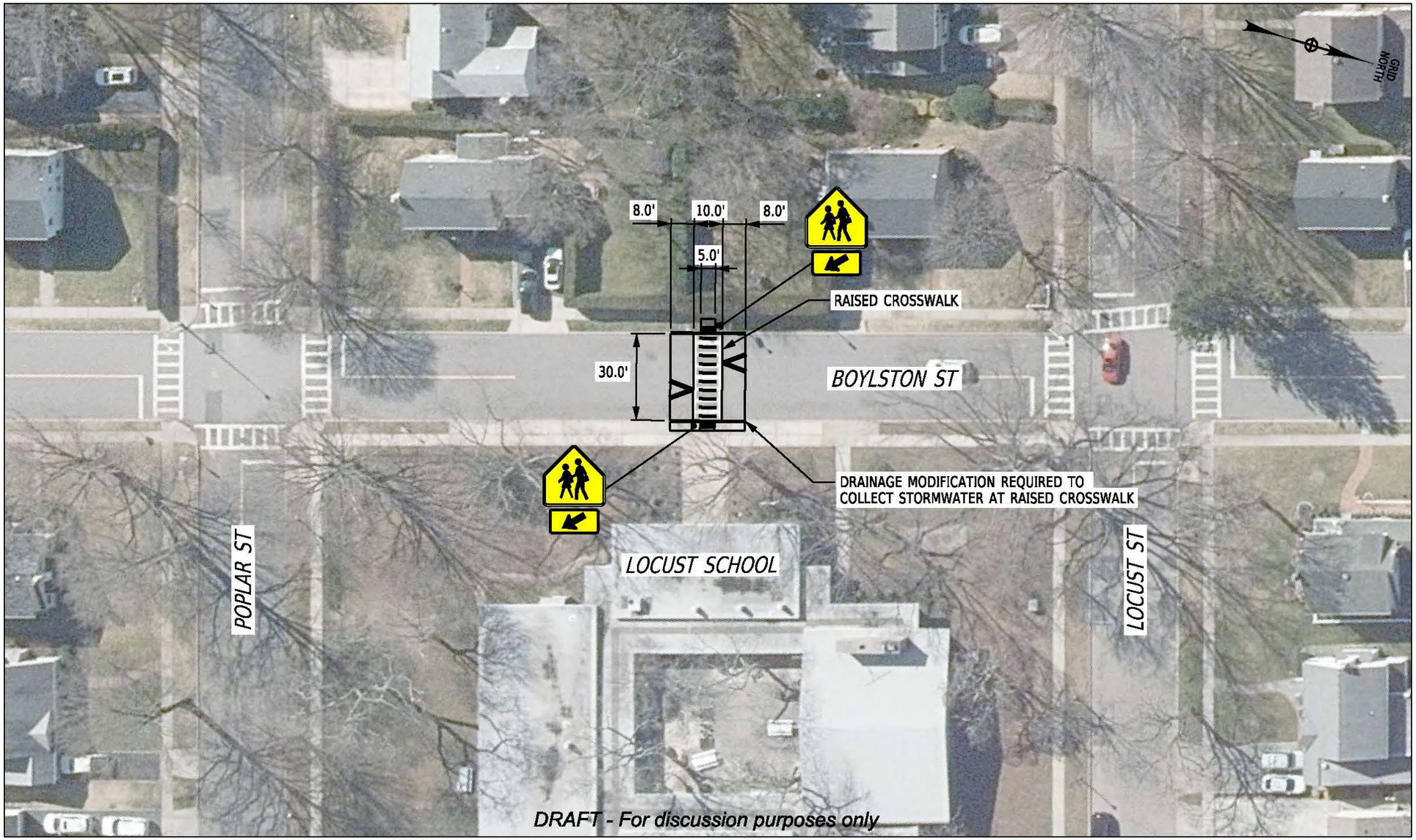

Figure 41: Sketch plan showing a raised crosswalk on Boylston St, midblock between Poplar St and Locust St, in front of Locust School

Figure 42 shows a traffic circle with a traversable curb at the intersection of Mulberry Ave and Wetherill Rd. By forcing even through traffic to slow down before crossing the intersection, traffic circles provide a highly visible traffic calming treatment that acts as an entrance to the neighborhood and pairs well with other complementary treatments.

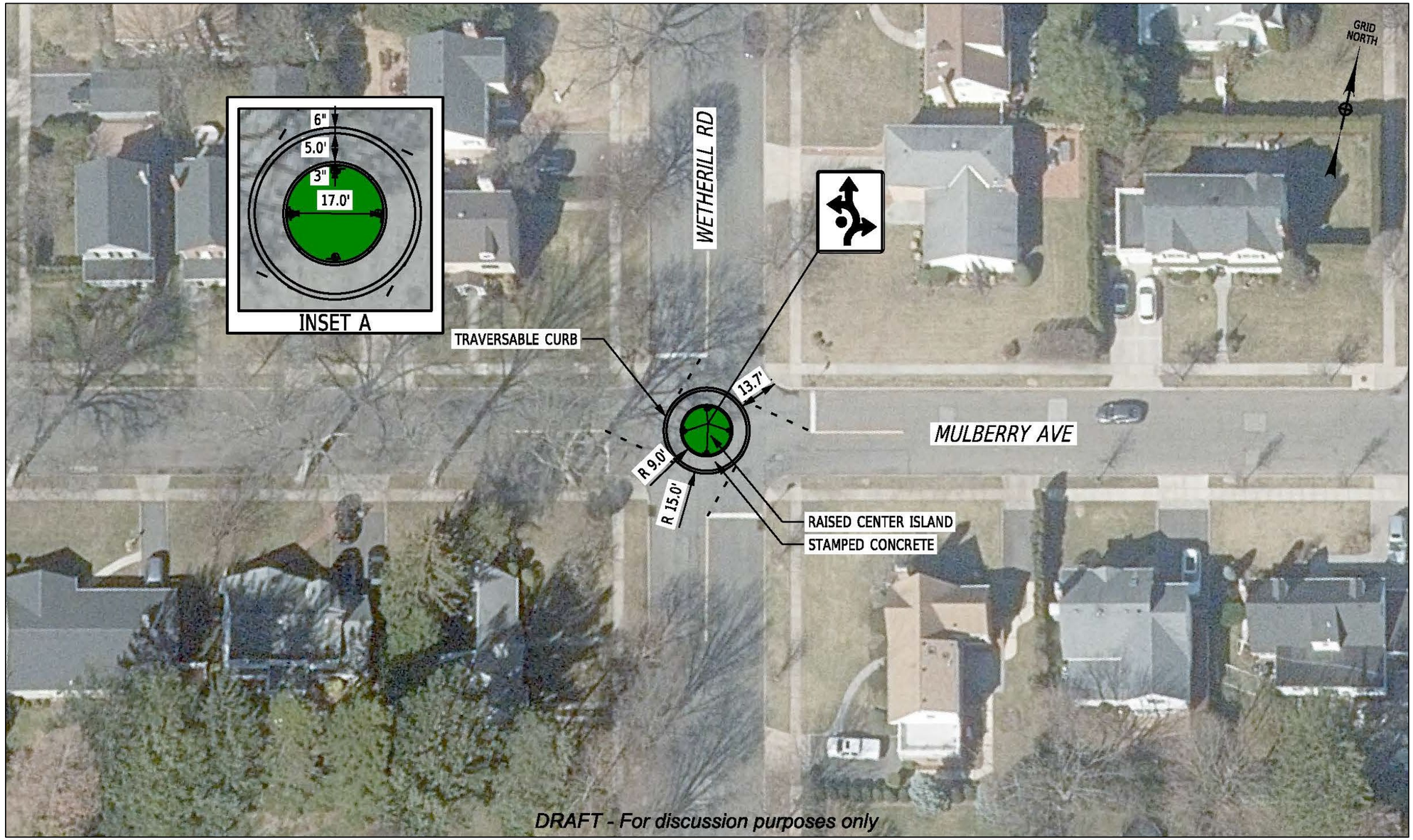

Figure 42: Concept sketch showing a traffic circle at the intersection of Mulberry Ave and Wetherill Rd with inset showing dimension details

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D. Cost Estimates

As a part of developing and proposing traffic calming treatments, CM developed cost estimates that incorporate design and engineering, construction labor and materials, and construction inspection. These total treatment estimates are broken down by cost component in Table 1 below.

Table 1: Cost estimates for traffic calming treatments

Pair of Speed Humps (Based on 40-Foot-Wide Roadway)			
Design Engineering	Construction (Labor/Materials)[1]	Construction Inspection	Total
$1,900	$19,000	$3,800	$25,000
Pair of Bump-outs at Intersection (Based on 9-Foot Bump-out)			
Design Engineering	Construction (Labor/Materials)[1,2]	Construction Inspection	Total
$9,800	$98,000	$19,600	$128,000
Bump-outs on All Corners of Four-Way Intersection			
Design Engineering	Construction (Labor/Materials)[1,2]	Construction Inspection	Total
$15,400	$154,000	$30,800	$201,000
Traffic Circle (Based on 30-Foot-Diameter)			
Design Engineering	Construction (Labor/Materials)[1]	Construction Inspection	Total
$6,000	$60,000	$12,000	$78,000
Raised Median Island (Based on 5-Foot-Width)			
Design Engineering	Construction (Labor/Materials)[1]	Construction Inspection	Total
$7,600	$76,000	$15,200	$99,000
Raised Crosswalk (Based on 30-Foot-Wide Roadway)			
Design Engineering	Construction (Labor/Materials)[1,2]	Construction Inspection	Total
$5,200	$52,000	$10,400	$68,000
Mid-Block Choker (Based on 4-Foot Bump-out)			
Design Engineering	Construction (Labor/Materials)[1,2]	Construction Inspection	Total
$7,000	$70,000	$14,000	$91,000

[1]Contruction (Labor/Materials) includes: Work Zone Traffic Control | Survey and Stakeout | Mobilization | Contingency Cost

[2]Assumes drainage basin relocation

E. Visualizations

Figure 43 Bump-outs have been proposed for the corners along Stratford Ave near the school

VIII. Recommendations and Next Steps

CM assessed a variety of traffic calming measures to see if they could be implemented on the village-owned streets in the study area. After existing conditions analysis, research on the treatments, and conceptual design iterations, CM has determined that treatments such as speed humps, chokers, raised crosswalks and traffic circles are feasible on multiple street segments. Concept sketches for several treatments in each section provide an actionable blueprint for traffic calming Village-wide and demonstrate effective, contextual designs for Garden City. Beyond the design-oriented traffic calming treatments, CM developed recommendations for measuring community support around implementation, ranking potential treatments in terms of priority, and investigating policy-related actions to further advance traffic calming goals.

Figure 44:Speed hump constructed with temporary materials and installed on 4th St in Garden City in May 2023

A. Traffic Calming Implementation Protocol

Once a location demonstrates a need for traffic calming improvements, the Village must develop a workflow for determining technical feasibility and measuring resident support before deciding to implement. CM researched existing protocols in other municipalities including Bronxville, NY, Newtown, PA, and Ft Erie, ON. Over the course of the Satellite Study, the Traffic Commission and Village residents provided some context with existing procedures for measuring community approval. For a Village resident to hold a block party, 75% of block residents must approve via petition. Based on this information, as well as findings from research, CM recommended an implementation protocol that the Village of Garden City could use to assess whether there is support for certain treatments and decide if a treatment is worth considering(see Appendix IV CAC Special Review presentation slides 34-37 for details).

B. Prioritization Method

Due to the significant administrative and construction costs, CM would not recommend designing treatments in all feasible locations at the same time. The Village could use metrics such as speeding (85th percentile, average, or tickets issues for speeding), crashes (total crashes, crashes by contributing factor, crashes involving pedestrians, etc.), or rate of community request, and alignment with other proposed capital work to prioritize advancing a location to the next rounds of project design and planning (see Appendix IV, CAC Special Review Presentation- Slide 38 for details).

C. Temporary Treatments and Pilot Projects

As a part of the suggested implementation protocol, CM suggested the Village consider developing pilot projects with temporary materials to show how the treatments might look and feel without a full investment in capital improvements. Many of the geometric traffic calming treatments discussed in this report can be built with rubber, plastic, and other temporary materials that provide a solid reference structure without using concrete or asphalt. In May 2023, resulting from the earlier Garden City Numbered Streets Traffic Calming Study, CM designed and facilitated the implementation of temporary speed humps on 4th St between Franklin Ave and Hilton Ave. These temporary speed humps were installed in May 2023 for a trial period, allowing the community to measure their impact and monitor any potential unintended consequences.

A before and after study, using data from September 2021 without the temporary speed humps and data from May 2023 with the temporary speed humps, showed that 85th percentile speeds on 4th St decreased after installation. Reductions in average and 85th percentile speeds generally ranged from minus 6 to minus 10 miles per hour. Similarly, there were reductions in the total percentage of vehicles traveling over the speed limit on 4th St. Eastbound reductions in vehicles traveling over the speed limit amounted to minus 41% and westbound reductions amounted to minus 43%.

Direction	Before	After	Delta	Before	After	Delta	Before	After	Delta
	Average Speed (mph)			85th Percentile Speed (mph)			% Above Speed Limit		
EB	30	24	-6	39	29	-10	49%	8%	-41%
WB	29	23	-6	37	28	-9	48%	5%	-43%

Figure 45: Before and After Study of Temporary Speed Hump on 4th St

Overall, the installation of the temporary speed humps has been met with several positive comments from nearby residents, with residents confirming that vehicles began travelling slower in the area after the implementation of the speed humps, and a greater sense of safety throughout the nearby streets. In July 2023, the Village replaced the temporary treatment with permanent asphalt speed humps.

Figure 46: Village staff installing permanent speed humps on 4th St; this was undertaken after the successful temporary speed hump pilot

D. Traffic Calming Policy

While in-roadway traffic calming treatments are an important step toward reducing speeds in a neighborhood or Village, much of driver behavior is downstream from policy. Specifically, based on questions from the CAC, the Village could explore reducing the speed limit on streets within their jurisdiction. CM has advanced a proposal to study this on the Village's behalf by collecting data and organizing community outreach.

E. For Further Study

During the community outreach process, several locations of concern came to light that cannot be easily addressed by our traffic calming plan. Many of the busiest, most problematic streets in the Village are controlled by Nassau County and thus present challenges of jurisdiction to any potential traffic calming via treatment or policy. Despite this, many in the Village are working continually to address problems of speed, congestion, or noise on a few major corridors.

Clinton Rd

Village residents have specific concerns about high truck volumes, NICE bus routing, and general congestion on Clinton Rd. Some land use developments, both recent and proposed, could exacerbate these concerns.

New Hyde Park

During the CAC meeting series, residents in the West section expressed numerous concerns about pedestrian infrastructure on New Hyde Park Rd, a County-controlled Street.

Stewart Ave

Stewart Ave, between Franklin Ave and Clinton Ave, is a 3-lane thoroughfare that many residents are concerned is unsafe. CM as advanced a proposal for analyzing a road diet, a corridor wide traffic calming treatment that removes one vehicle moving lane and replaces it with another use, on Stewart Ave that could mitigate safety concerns.

F. Next Steps

This study provides the Village of Garden City with an understanding of some of the possible traffic calming treatments that have been found to be effective and feasible for the streets in the study area. It also gives the Village an initial estimate of what it would cost to implement these treatments. Lastly, because of the associated outreach, this study will help the Village advance the recommendations by identifying which treatments have some basic community support. Suggestions for implementation protocol and prioritization will help guide the process that could eventually provide an effective traffic calming network in the Village of Garden City.

Garden City – the leadership, staff, and residents – are very invested in making the Village streets safer, especially for the most vulnerable, pedestrians, children, seniors, etc. This Traffic Calming Master Plan can be used to guide the community as they strive to calm traffic and improve conditions for those who enjoy walking and biking in their beautiful village.