

MEMORANDUM

To: Jim Palmer, Village Administrator (Village of Bronxville)

From: Greg Del Rio, PE

Date: December 13, 2022

RE: Village Wide Speed Limit Reduction to 25 MPH – Traffic Study

Introduction

The purpose of the Bronxville Speed Limit Study is to determine a reasonable speed limit that balances safety, efficiency, environmental quality and functional mobility. Residents generally prefer lower speed limits that maintain quality of life for the community, and safety for all users, particularly pedestrians and bicyclists. Lower speed limits also have environmental benefits of lowering fossil fuel consumption, carbon output, and noise impacts. Since maximum posted speed limits reflect local “laws”, they are therefore considered set for the protection of the public and the regulation of unreasonable behavior on the part of the individuals.¹

A change in speed limit has been shown to lower the mean speed of actual traffic, and lower speeds have been shown to reduce crash risk, both in terms of frequency and severity.

Existing Village speed limits are codified in the Bronxville Code of Ordinances, Chapter 290 Section 14 .

§ 290-14. Maximum speed limits within the village.

(A) Thirty miles per hour. Except as provided in Subdivision B hereof, 30 miles per hour is hereby designated as the maximum speed limit at which vehicles may proceed on highways within the village.

(B) School speed limits. Twenty miles per hour is hereby designated as the maximum school speed limit at which vehicles may proceed along highways within the village within 300 feet of the school building lines as follows:

- (1) Pondfield Road from Meadow Avenue to Midland Avenue.
- (2) Midland Avenue from Willow Circle to Pondfield Road.
- (3) Meadow Avenue from Tanglewylde Avenue to Kraft Avenue.
- (4) Kraft Avenue from Cedar Street to Midland Avenue.
- (5) Midland Avenue north side from Pondfield Avenue to Kraft Avenue.
- (6) Sagamore Road, north and south from Christ Episcopal Church building.

(C) Twenty-five miles per hour. Twenty-five miles per hour is hereby designated as the maximum speed limit at which vehicles may proceed on Sagamore Road between Avon Road and Pondfield Road, except as noted in Subsection B(6).

¹ Methods and Practices for Setting Speed Limits: An Informational Report (FHWA-SA-12-004); April 2012

The Village seeks to alter Part A of this Section from 30 mph to 25 mph. All streets and areas are 30 mph except sub-areas identified under Part B & C which have 20 & 25 mph for school zone and a section of Sagamore road respectively. In addition, there is one state road within the Village limits (New York State Route 22 - White Plains Road) that has a posted speed limit of 30 mph.

Methodology

There are generally four accepted approaches to setting speed limits when considering changes to maximum speed limits. This study was performed in accordance with the engineering considerations and factors for speed limits set forth in the manual and specifications for a uniform system of traffic control devices maintained by the commissioner of transportation pursuant to Section 1680 of the New York Vehicle and Traffic Law; and specifically in accordance with established engineering practices as provided in the FHWA report: *Methods and Practices for Setting Speed Limits: An Informational Report (FHWA-SA-12-004); April 2012*. This study only considers the following approach:

- Engineering Approach – A two-step process that begins by establishing the 85th percentile speed, then adjusts according to local context such as pedestrians, bicyclist, driveways, and site distances.

The other approaches not considered in this study include:

- Injury Minimization or Safe System Approach – Speeds are set based on the crash types that are likely to occur, and the severity of potential injury for those type crashes.
- Expert System Approach – Speed limits set by a computer program that uses knowledge and inference procedures.
- Optimization – Setting speed limits to minimize the societal costs of transport (e.g. travel time, operating costs, crashes, environmental factors are considered in determining optimal speed limits.

Analysis

Engineering Approach

Independent data was captured using radar at 4 locations listed and shown below in Figure 1. The four locations were chosen to represent the two types of roadway classifications within the Village, as well as neighborhood context. Midland Avenue and Pondfield Road are classified as “Minor Arterials” in NYSDOT Functional Classification system; while Woodland Road and Parkway Road are classified as “Local Roads”.

- Midland Avenue between Avon Road & Sycamore Street (Northbound & Southbound)
- Pondfield Road between Village Lane & The Byway (Eastbound & Westbound)
- Woodland Avenue between Greenfield Avenue & Oriole Avenue (Eastbound & Westbound)
- Parkway Road between Millburn Street and Dewitt Avenue (Eastbound & Westbound)

These locations represent various contexts, neighborhoods, and classification of the Village where the proposed speed limit changes would affect. A minimum of 100 samples were taken at each location. Samples reflected free-flowing conditions, capturing vehicles that traveled at constant acceleration/deceleration along the corridor. Slower vehicles to/from driveways or parking were not recorded. Results are summarized below in Table 1. 85th percentile speeds varied between 26 and 33 mph for each sample location.

Table 1 - Independent Speed Data Summary

Location	Speed Limit (mph)	Average Speed (mph)	50 th Percentile Speed (mph)	85 th Percentile Speed (mph)
Midland Ave (NB)	30	28.46	29	33
Midland Ave (SB)	30	28.47	28.5	32
Woodland Ave (EB)	30	26.67	27	31
Woodland Ave (WB)	30	28.16	28	32
Pondfield Road (EB)	30	29.8	30	33
Pondfield Road (WB)	30	28.83	29	32
Parkway Road (NB)	30	25.37	25	29
Parkway Road (SB)	30	22.79	23	26

In addition, the Village of Bronxville Police Department provided data from their radar system. Westchester County DPW also provided traffic counts and speed data. Results from these data collection efforts are summarized below in Table & 3 below. This data represents a much larger sample, and does not discriminate to trip purpose or traffic conditions during the day. Results were slightly lower, yet fairly consistent, with the independent data. 85th percentile speeds ranged from 24 – 31 mph.

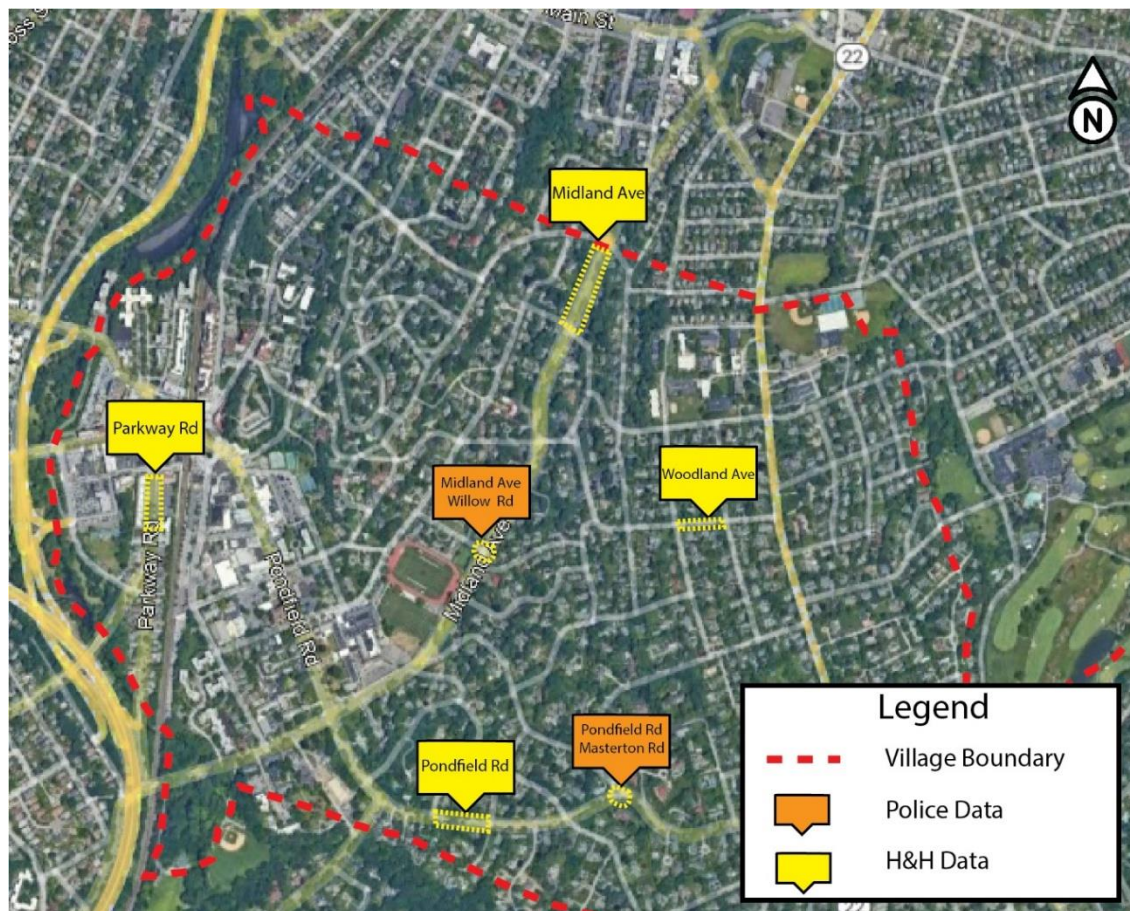
Table 2 – Village of Bronxville Police Speed Data

Location	Total Days of Data	Speed Limit (mph)	50 th Percentile Speed (mph)	85 th Percentile Speed (mph)
Midland Ave (NB)	30	30	23	28
Pondfield Rd (WB)	30	30	20	24

Table 3 – Westchester County DPW Speed Data Summary

Location	Speed Limit (mph)	Average Speed (mph)	50 th Percentile Speed (mph)	85 th Percentile Speed (mph)
Midland Ave (NB)	30	26.1	26	31
Midland Ave (SB)	30	25.9	26	31

Figure 1 - Speed Data Locations



Conclusion

Analysis of the data reflects that most drivers obey the current speed limits, and naturally determine the appropriate speeds to be between 26 and 33 mph on all roads observed. This is partially governed by geometry, streetscape, adjacent land uses and driveway characteristics. The local residential streets are generally characterized by two-way directional travel, parking on one or both sides, and frequent driveways on both sides. The arterial streets are characterized by similar features with higher volumes. Midland Avenue has a planted median and limited areas for on-street parking.

Due to these factors, as well as intermittent traffic controls such as stop signs and traffic signals, and considering the Injury Minimization approach, it is recommended that a reasonable lower speed limit of 25 mph be implemented Village wide, which would be a rounding down of the 85th percentile from 1 to 8 mph based on the sample locations observed and data collected.

Future road improvements would be recommended to assist in calming traffic so that drivers continue to naturally flow at a rate of 25 mph or lower. 85th percentile speeds are mainly based on the perception of how fast it is to safely go on a roadway. Recommended roadways improvements could include striping and signing such as shoulder striping to narrow perceived travel-way, sharrows to promote sharing the roadway with bicyclist, and crosswalks. Physical features such as neck-downs at intersections and speed tables mid-block are other typical methods. Some of these have already been implemented around the Village.