Transportation ALTERNATIVES

Ideas to Reduce Traffic Noise, Improve Safety and Increase Livability

Three Ridgewood Streets
(Decatur Street, Putnam Avenue, Traffic Avenue)

Ridgewood, Queens, NY

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Submitted to the Ridgewood Property Owners and Civic Association

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Credits

The report, drawings, workshop, data and analysis was produced with the able assistance of Elena Patarini.

Overview

This report culminates a study of roadway noise and the traffic that causes it in the residential areas of Ridgewood, Queens. The focus of this study is on physical and regulatory changes to the transportation system. At the kickoff meeting the project team and members of Ridgewood Property Owners and Civic Association (RPOCA) identified the following issues as contributing to excessive roadway noise:

- High Vehicle Speeds, especially busses, on Putnam Avenue.
- Industrial Activity (trucks, forklifts, stockpiles) of the sidewalks along Traffic Avenue and Decatur Street.
- Parking in bus stops near the intersection of Myrtle Avenue, Decatur Street and Summerfield Street.
- Trucks driven on Woodward and Onderdonk Avenues, which are residential streets and not truck routes.

Given the project scope and time restraints we focused on the first two. Members of RPOCA performed surveys to document the conditions in October 2003 with the following results:

<u>On Putnam Avenue</u>
- the maximum speed recorded was 39 mph,
- half of the vehicles being driven above the speed limit were busses, and
- in the PM rush hour there was one speeding bus every 10 minutes.

<u>On Decatur Street</u>
- at all times a stockpile was blocking part of the sidewalk,
- one remained for at least 6.5 hours,
- in seven of eight intervals either a truck or forklift was parked on the sidewalk, and
- in five of eight intervals a forklift was being driven on the sidewalk.

To counteract these traffic and noise issues we suggest exploring the following options:

1. An all-way stop on Putnam Avenue and 60th Place or 60th Lane.
2. Traffic calming devices such as split speed humps and chokers on Putnam Avenue.
3. Low speed zones for five areas of Ridgewood.
4. Demarcating a pedestrian path along the sidewalks of Decatur Street and Traffic Avenue.
5. Installing bollards at the curbs and driveways of Decatur Street and Traffic Avenue.

Roadway Noise

As the impetus for this work is roadway noise, we surveyed the sound levels in the area to validate the concerns of the group. The measurements were taken at 11 AM on December 12, 2003 with a digital decibel reader. Each survey was two minutes long and taken 25 feet away from the center of the nearest travel lane. According to Chapter 6 of Title 15 of the Rules of the City of New York, allowable sound levels are 92 decibels (dB) for vehicles over four tons (trucks), 88 dB for motorcycles and 82 dB for all other vehicles (cars) on streets with speeds of 35 mph or less.[1]

At all six sites the maximum noise was higher than 85 dB, the level that, if sustained, damages hearing. Additionally five of six sites exceeded the maximum legal sound levels for trucks. At two sites on which this report focuses (Decatur Street and Putnam Avenue) the ambient noise was higher than 50 dB, the level at which sound becomes generally bothersome to humans. The levels are listed in Table 1.

It is important to note the difference in ambient sound levels and the spikes (maximum). A change of 10 dB either doubles or halves the noise level, a change of 5 dB is "perceptible", and a change of 3 dB or less is barely noticeable to the human ear. The spikes on these streets in Ridgewood average 49 dB – about six times louder. All things considered, sound spikes truly bother people.

There is a correlation between roadway noise and vehicle speed and size. If one lowers vehicle speeds, reduces aggressive driving and keeps larger vehicles on designated routes, then the street will be quieter. Other measures to reduce roadway noise (plant trees, remove elevated trains, convert trucks to solar or battery powered, etc.) would also help but fall outside the project scope.

Location	Ambient dB	Maximum dB	Difference dB
60th Ln, 68th St - 69th St	50	98	48
60th Pl & Gates Av	46	101	55
Decatur St. & Myrtle Av	58	103	45
Onderdonk Av, Harman Av - Greene Av	50	102	52
Putnam Av & 60th Pl	58	90	42
Woodward Av, Harman Av - Greene Av	50	102	52

Table 1: Traffic Noise Levels in Ridgewood

[1] The legal allowable sound levels for speeds of more than 35 mph are: trucks 96 dB, motorcycles 92 dB, cars 88 dB. All of the streets in the study area have a speed limit of 30 mph.

Surveys and Analyses

Putnam Avenue

Putnam Avenue is a one-way, residential street through Ridgewood with quite a few busses. The stretch between Fresh Pond Road and Forest Avenue sees the Q58, B13, and B20. In addition it is a common 'depot run' for routes that terminate at the Myrtle/Wyckoff junction. There are no traffic control or calming devices (signals, stop signs, speed humps, roundabouts) along its three block length so the busses, and other traffic gather speed. This is compounded by the narrowness of the street and uniform building walls which reflect the traffic noise, see Figure 1.

Figure 1: Busses on Putnam Avenue

To document this condition members of RPOCA performed two spot surveys, one in the AM peak and one in the PM peak with the results shown in Table 2.

day	Monday	Tuesday	total
date	10/20/03	10/21/03	
start time	900	1600	
end time	1015	1700	
count	45	68	113
high speed, mph	33	39	**39**
85th percentile speed, mph	28	31	**29**
average speed, mph	25	27	26
total above speed limit	2	12	14
busses above speed limit	1	6	**7**

Table 2: Spot Speeds on Putnam Avenue, Fresh Pond Road to 60th Place

The 85th percentile speed (29 mph) is just under the speed limit (30 mph), so technically there is not a problem with speeds. Yet, half of those recorded traveling above the speed limit (7 of 14) were busses. While speedy bus travel is to be valued, busses

traveling rapidly down a residential street is a detriment to the quality of life. Busses are large, heavy and noisy, especially when accelerating on narrow streets. They have been recorded at 90-100 decibels, 40-50 dB higher than the ambient sound level recorded on Putnam Avenue. In that every 10 dB change equals a doubling of volume, the busses are four to five times as loud as normal traffic on the street. In the PM rush hour there was one speeding bus every 10 minutes.

The highest speed recorded during the two and a quarter hour survey was 39 mph. The chance that a pedestrian will die if hit by a vehicle traveling at 40 mph is over 80 percent. 12 of these speeding vehicles were recorded in the four o'clock hour - prime outdoor playtime for children.

Decatur Street and Traffic Avenue

Decatur Street is both a residential and industrial street on the edge of Ridgewood – note the school zone sign in Figure 2. Historically the warehouses and industries along this street were served by the railroad tracks immediately to the southeast. As trucking has supplanted rail freight, building access has changed to the street. This leaves the sidewalk as both walkway for pedestrians, and driveway for forklifts, stock and sometimes trucks, see Figure 3. A similar condition can be found on Traffic Avenue.

While acknowledging the value of industrial businesses to the local economy, and not wanting to place undue hardships on them, the fact of the matter is that sidewalks in New York City are primarily for the safe passage of people. Additionally, sidewalks are generally not built for the weight of heavy vehicles, and constant use shortens their lifespan.

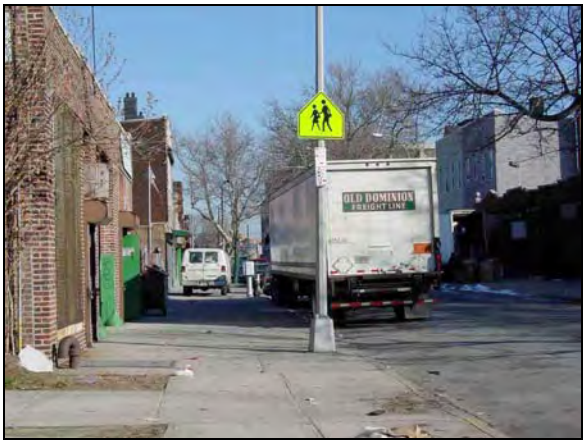


Figure 2: Trucks and Vans and School Zone on Decatur Street

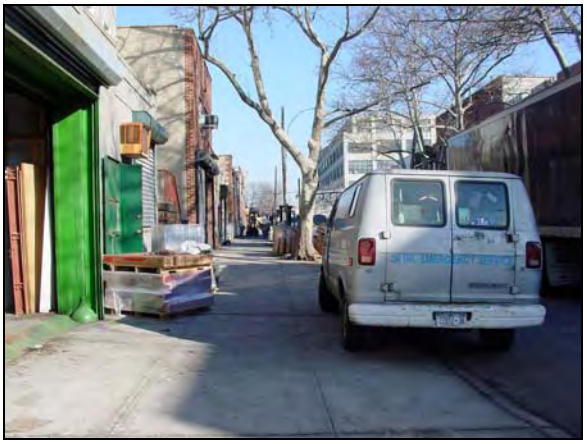


Figure 3: Vans and Stock on Decatur Street

To document how the sidewalks on Decatur Street were being (mis)used, members of RPOCA performed a sidewalk use survey on two days in October. This survey used a log-sheet to show when, where and for how long industrial users blocked or otherwise misused the sidewalk. The Table 3-4 and Figures 4-5 show:

- at all times a stockpile was blocking part of the sidewalk,
- most piles were left for at least 2.5 hours - one remained for at least 6.5 hours,
- in seven of eight intervals either a truck or forklift was parked on the sidewalk,
- in five of eight intervals a forklift was being driven on the sidewalk (this does not include driving out of a building on a driveway), and
- trucks and dumpsters on the sidewalk were less of an issue.

Suffice to say parts of the sidewalk resemble a loading zone more than a walking path.

	8:30 AM	11:00 AM	2:00 PM	4:30 PM
Truck parked on sidewalk	0	0	0	1
Forklift (hilo) parked on sidewalk	2	2	2	0
Forklift (hilo) driving on sidewalk	1	2	1	2
Stock piled on sidewalk	2	2	2	1
Dumpster on sidewalk	0	0	0	1

Table 3: Sidewalk Use,

Decatur Street (north side) between Seneca and Forest Avenues

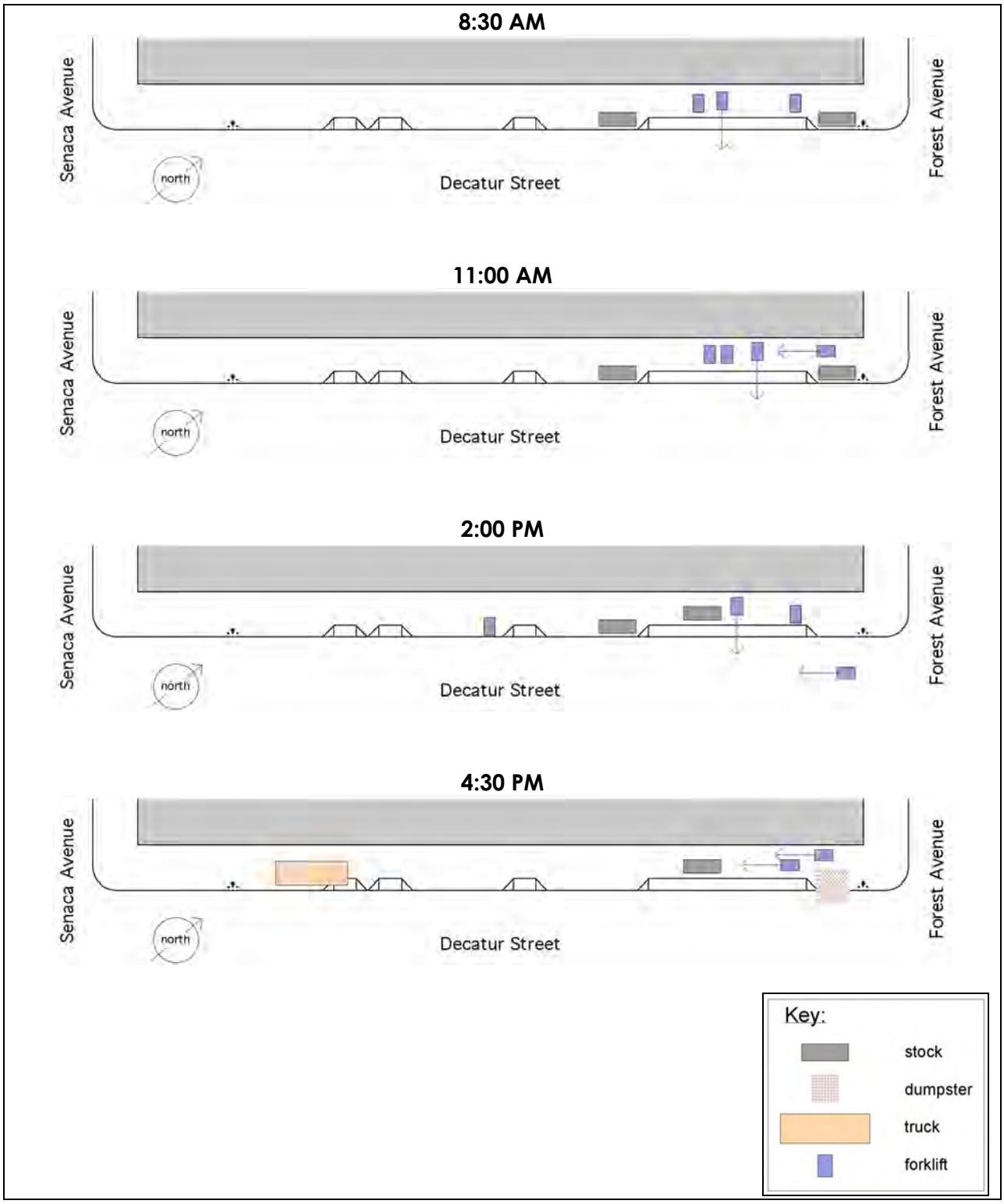
Tuesday, 21 October 2003

	8:30 AM	12:30 PM	3:00 PM	4:30 PM
Truck parked on sidewalk	0	0	0	0
Forklift (hilo) parked on sidewalk	1	2	0	3
Forklift (hilo) driving on sidewalk	1	2	2	1
Stock piled on sidewalk	2	2	2	1
Dumpster on sidewalk	0	0	0	0

Table 4: Sidewalk Use,

Decatur Street (north side) between Seneca and Forest Avenues

Thursday, 23 October 2003



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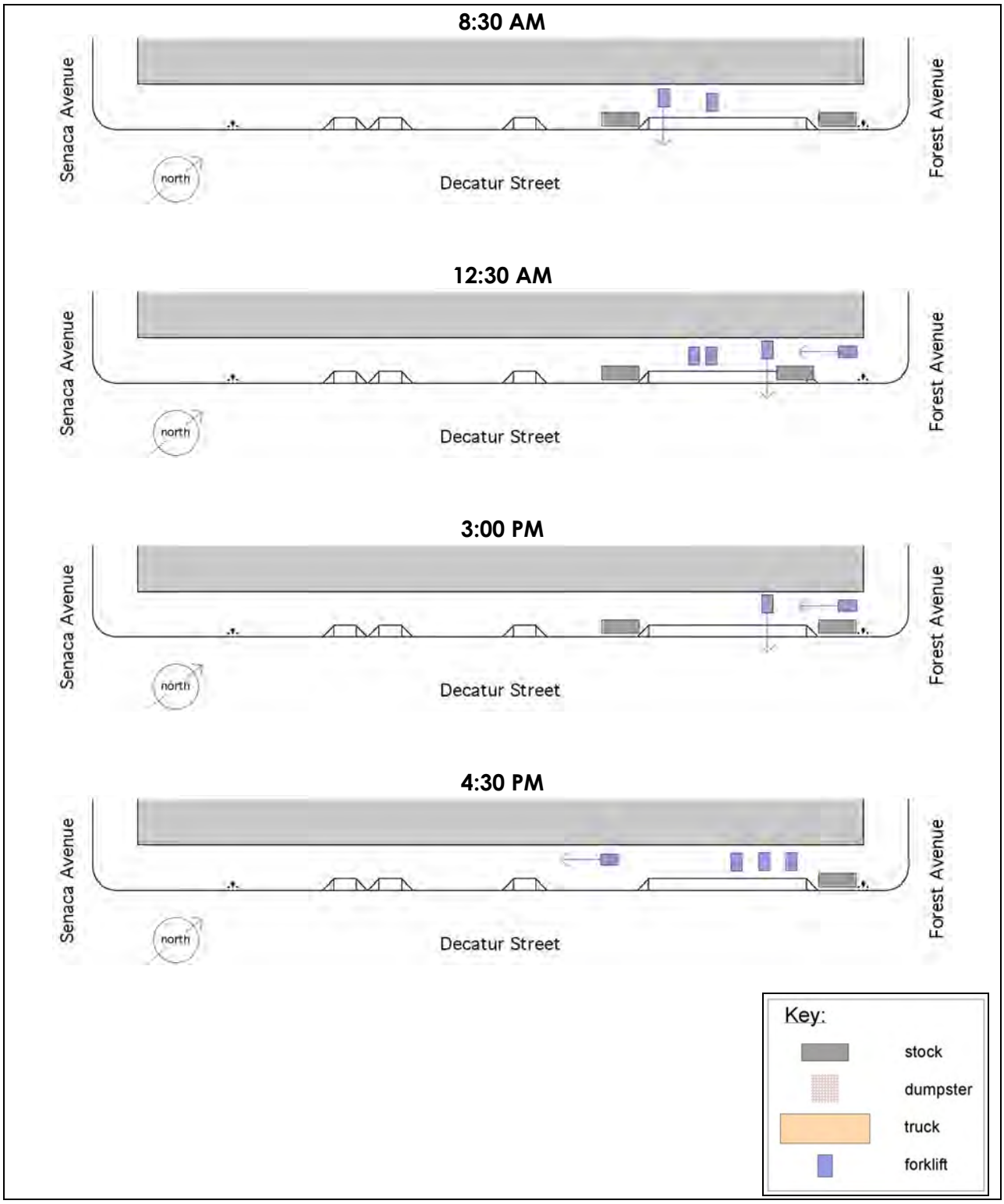


Figure 5: Sidewalk Use,

Decatur Street between Seneca and Forest Avenues

Thursday, 23 October 2003

Discussion

Speeding

The speeds recorded on Putnam Avenue are about at the speed limit, as such they would not warrant traffic calming devices according to current DOT policy. In addition, vertical deflection devices like speed humps are not used on designated bus routes. However the maximum speeds recorded and fact that half of the speeding vehicles were busses suggests something should be done. Below are some ideas for physical and regulatory changes.

All-way Stop

In general stop signs should not be used to control speeds, but if warranted for other reasons they may be installed. An all-way stop at Putnam Avenue and either 60th Place or 60th Lane would have residual effect on vehicle speeds. The federal Manual for Urban Traffic Control Devices (MUTCD) warrants for multi-way stops are listed below.[2]

> A. Where traffic control signals are justified, the multiway stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
>
> B. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.
>
> C. Minimum volumes:
>
> > 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
> >
> > 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but
> >
> > 3. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h (40 mph), the minimum vehicular volume warrants are 70 percent of the above values.
>
> D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

[2] For further information see Section 2B.07 at: http://mutcd.fhwa.dot.gov/kno-millennium_12.28.01.htm.

Split Speed Hump

Warrants for an all-way stop will probably not be met, so the next options would be traffic calming. Split Speed Humps are used on bus routes and allow the bus to travel unimpeded through the gaps in the hump, see Figure 6. Smaller vehicles must traverse the hump. This type of installation exists on West 136th Street at Harlem Hospital.

Choker

An innovative traffic calming device, known as a choker, narrows the street such that drivers slow to navigate. The effect is similar to a narrow bridge. A choker is typically formed by a set of curb extensions placed directly opposite each another. In the case of Putnam Avenue the street would be narrowed to ten feet, just wide enough for a bus (or fire truck). The combination of a choker and split speed hump is even more effective in calming traffic, see Figure 7.

Figure 6: Split Speed Hump and Bus

Figure 7: Choker with Speed Hump[3]

Low Speed Zone

There is a new state law which allows New York City to establish low speed zones in areas like Ridgewood. The speed limit may be set at 15 or 20 mph (the current limit is 30 mph). This would be similar to the 20 mph speed limit on the private streets of Forest Hills Gardens, see Figure 8. Other low speed zones in Queens can be found in Bayside Terrace and Breezy Point. In that almost all of the vehicles surveyed on Putnam Avenue were traveling above 20 mph, extensive traffic calming would be necessary within the zone.

The most efficient way to establish a low speed zone is to designate a particular area that contains mostly residential streets. Looking at a map of Ridgewood five areas stand out. These zones would include the interior streets only, not the principal streets which bound the areas.

[3] photo courtesy www.pedbikeimages.org

- Metropolitan Avenue – Fresh Pond Road – Myrtle Avenue – Forest Avenue
- Fresh Pond Road – M Train – Traffic Avenue
- Fresh Pond Road – Cypress Hill Avenue – M Train – LIRR
- Myrtle Avenue – Decatur Street – Wyckoff Avenue
- Metropolitan Avenue – Forest Avenue – Myrtle Avenue – Cypress Avenue – Flushing Avenue

Figure 8: 20 mph Zone in Forest Hills Gardens, Queens

Sidewalks

The fundamental function of a sidewalk is to provide safe passage for pedestrians. Other uses should not infringe upon that passage. This includes stock storage, dumpsters and driveway use. In this section we look at ways to ensure that safe passage.

Effective Width

The minimum "effective" width of a sidewalk should be five feet. This width allows two people to pass each other comfortably, permits two people to push strollers side by side, and provides sufficient turn around space for a person in a wheelchair. Figure 9 shows three people crowding into a five foot wide sidewalk. "Effective" width means that which is usable, the clear portion between trees, poles, planters, fences, newspaper boxes, hydrants, and other "street furniture" which populates the sidewalk.

Figure 9: Five-foot Effective Sidewalk Width

One way to help ensure a five-foot width is to mark "walking lanes" on the sidewalk, as shown in Figures 10-11. The idea is that, with lines on the sidewalk, forklift drivers on Decatur Street and Traffic Avenue could do a better job of keeping the 'walking lane' free of stock, dumpsters and garbage.

Figure 10: Lines embedded in the Sidewalk, Queens

Figure 11: Lines embedded in the Sidewalk, Bronx

Bollards

The most direct way to keep motor vehicles off the sidewalk is via bollards. Bollards are posts about three feet high usually made of steel, wood or concrete. They are placed just behind the curb and sometimes along driveways to keep people from driving on the sidewalk, see Figures 12-15. They are used throughout the city to protect fire hydrants, phone booths, building entrances, poles and other things which may be hit by vehicles. From a safety point of view bollards protect pedestrians on the sidewalk from errant drivers.

Bollards could be installed on Decatur Street and Traffic Avenue by the DOT or by private property owners (the sidewalk is owned by the city, but the property owners maintain it). Given the situation documented in this report, DOT or local politicians might be amenable to funding bollards. Failing that, the RPOCA could raise the necessary funds and work directly with local property owners.

The installation of bollards on city sidewalks is governed by the Rules of the City of New York, Title 34, Chapter 7, Section 04.a.20 and administered through DOT's "revocable consent" process. In a nutshell, one has plans prepared by an architect or engineer, files them with DOT, posts a notice in the paper, holds a public hearing, and pays $125 to 500 annually. The bollards may be 30 to 48 inches high, up to 18 inches in diameter, at least 48 inches on center with no horizontal members, and capped or smoothed. The process is described at http://www.nyc.gov/html/dot/html/permits/revconif.html.

Figure 12: Bollards Along the Curb, 69 Street, Maspeth

Figure 13: Bollards Along a Driveway

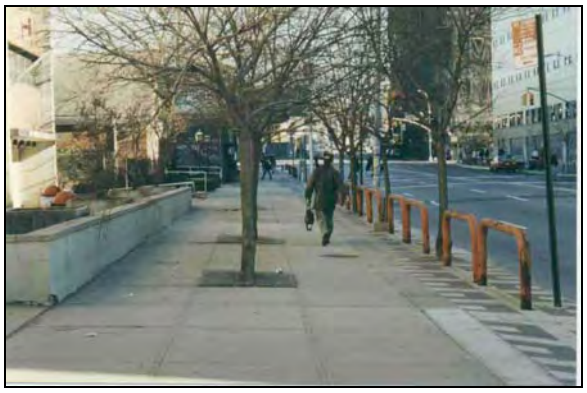
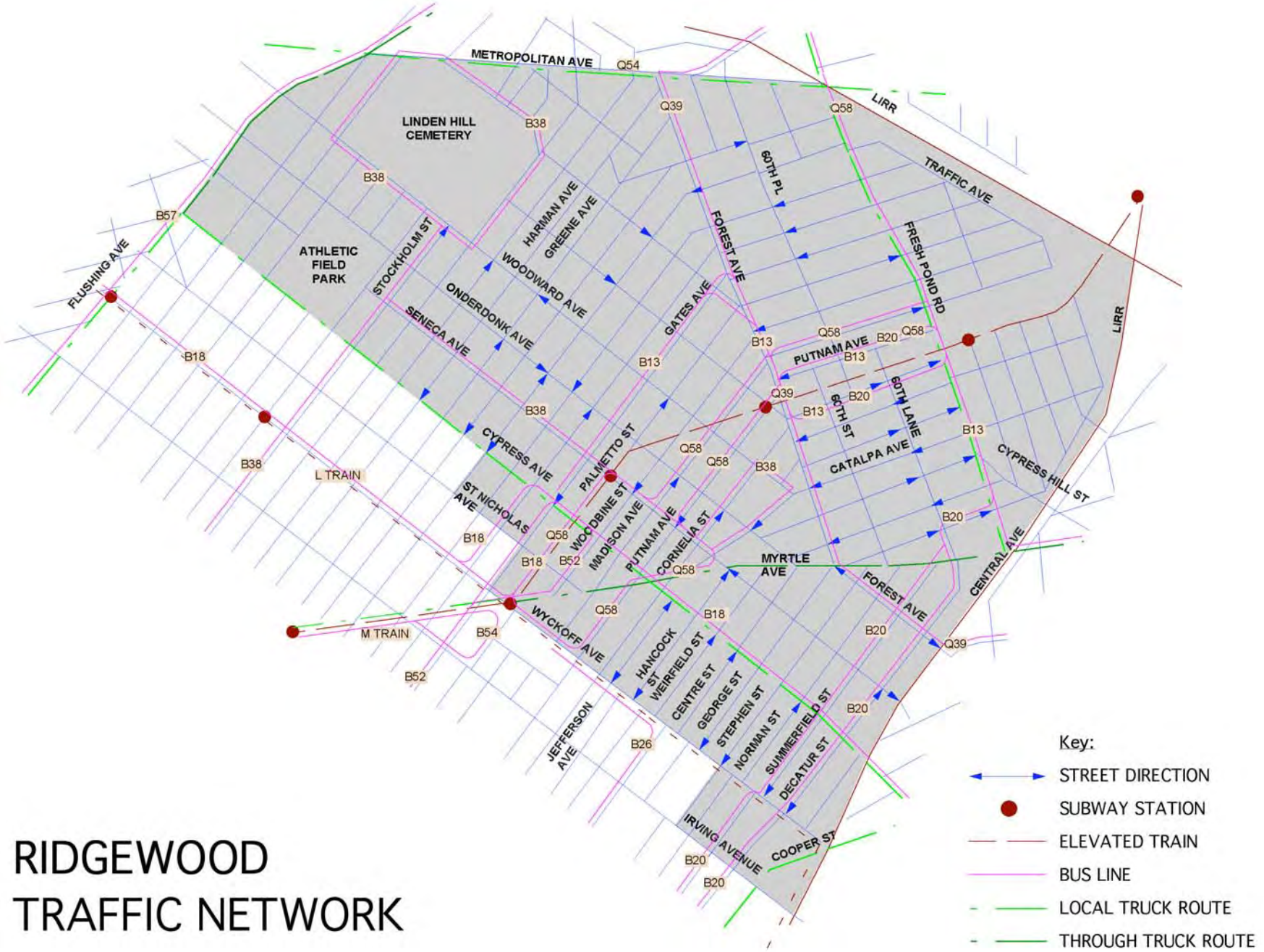


Figure 14: Bollards Protecting Trees, Long Island City

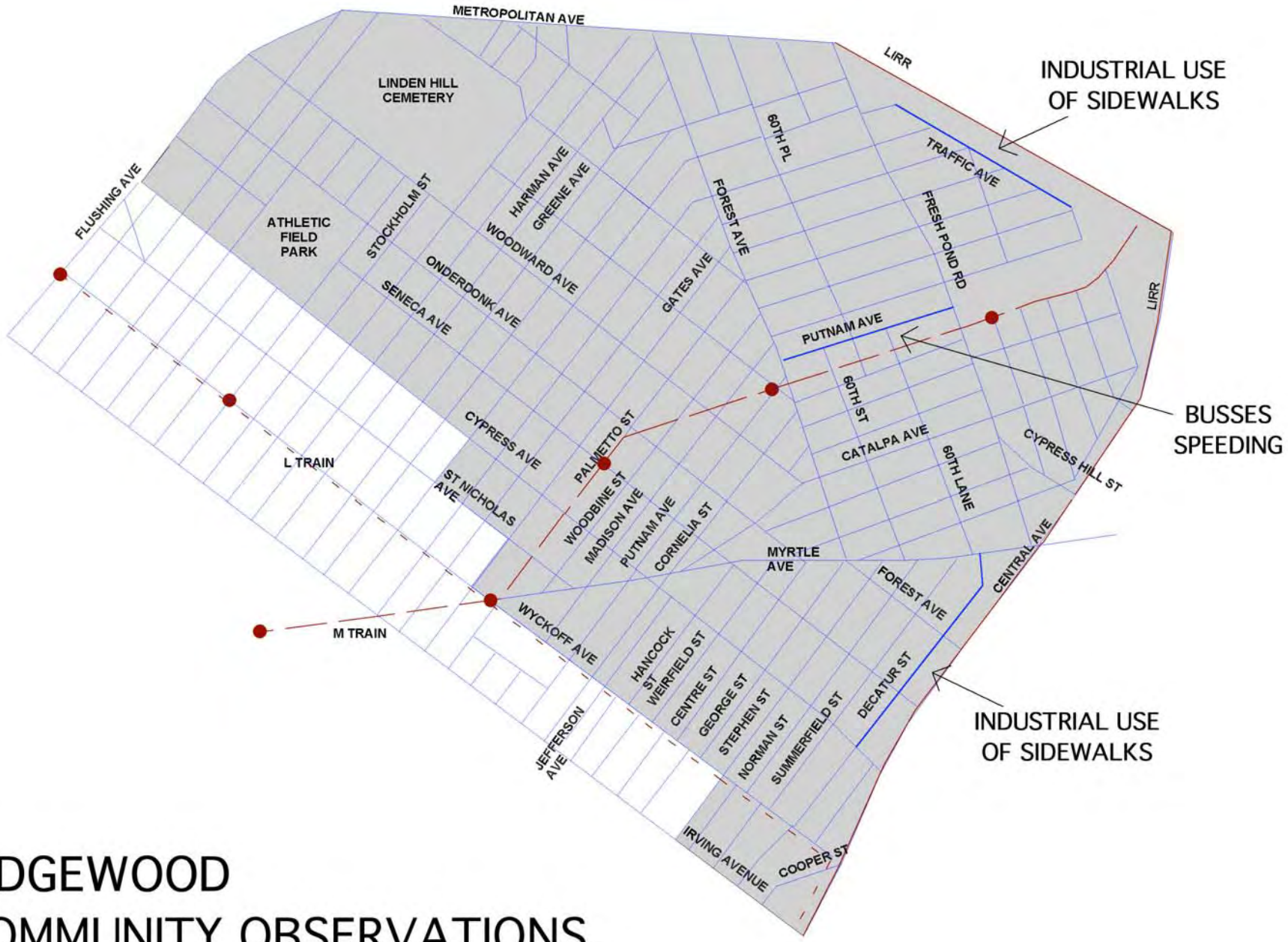
Figure 15: Bollards Protecting Subway Entrance, Manhattan

Conclusion

The objective of this report is not to provide finalized recommendations, rather solid evidence and a frank discussion of the issues. The hope is that the RPOCA takes the findings and engages the larger community in a discussion of roadway noise, its root causes and possible solutions.



RIDGEWOOD TRAFFIC NETWORK



RIDGEWOOD
COMMUNITY OBSERVATIONS