



City of Boston



Forest Hills Improvement Initiative

Transportation Action Plan

Prepared for:

*Boston Redevelopment Authority
Boston Transportation Department*

Submitted by:

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Suite 402
Boston, MA 02110*

November 5, 2008

FINAL REPORT



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Executive Summary

The Boston Redevelopment Authority (BRA) in conjunction with the Boston Transportation Department (BTD) has retained Traffic Solutions, LLC to perform a transportation study of the Forest Hills neighborhood. The study's focus was to improve transportation conditions in the Forest Hills area. The study approach included identifying issues on a short-term, mid-term, and long-term level. Each level corresponded to a level of financial commitment and level of effort. In the short-term, improvements can be made with relative ease, with a modest budget and staff; conversely, the long-term level improvements require capital outlay, planning and design.

Traffic Solutions was able to identify the critical transportation issues through meetings with community members, field visits, and an extensive data collection effort. This action plan identifies and describes improvements that are relatively inexpensive to implement and will have an immediate effect on traffic operations, providing immediate benefit to the community. These short-term improvements comprise changes to intersection geometry, pavement markings, signage, crosswalks, operations related to entering and exiting the Massachusetts Bay Transportation Authority (MBTA) station, and signal timing and coordination at fourteen intersections surrounding Forest Hills.

Based on the preliminary findings, some recommendations have already been implemented by BTD that foster network efficiency. These improvements were identified from the software model that was created for transportation network in the study area. The collected data (i.e., pedestrian, bicycle, and vehicular volumes) from the data collection period (i.e., 11 hour 7am- 6pm) and the existing infrastructure, were used to create a model. The model was used to evaluate the efficiency of the network and identify specific locations and corridors that may benefit from improvements. Recommended signal timing adjustments and coordination in the corridors adjacent to Forest Hills Station have been performed by BTD.

The second part of the document contains long-term improvements that require additional analyses and funding. These improvements were identified by the community prior to and during the community hearings and public participation process. Many of the ideas presented were designed conceptually and evaluated on the preliminary level. Concepts that should be considered for advancement, based on their merits and potential, have been included.

We would like to extend our appreciation to John Dalzell, and John Read, both of the BRA, Don Burgess, Frank Johnson, and Vineet Gupta of the BTD, and Mark Davis of the MBTA for their assistance on this project. We also want to thank Massachusetts Priority Development Fund, MassHousing and the Department of Housing and Community Development for their assistance and funding.



Forest Hills Study Area

Short Term Improvement Recommendations

- Signal Timing and Coordination
 - Underway by BTD
- Pavement Markings
- Signage
 - Regulatory, Way Finding
- Crosswalks
- Bicycles
- Cab Stands/Bus Drop-off

Washington Street at New Washington Street

Issues:

The intersection of Washington St. at New Washington St. is a gateway to Forest Hills from the northeast. The intersection geometry is confusing to drivers. This is a particularly dangerous intersection with a high crash rate and high volumes of both vehicular and pedestrian traffic.



Findings:

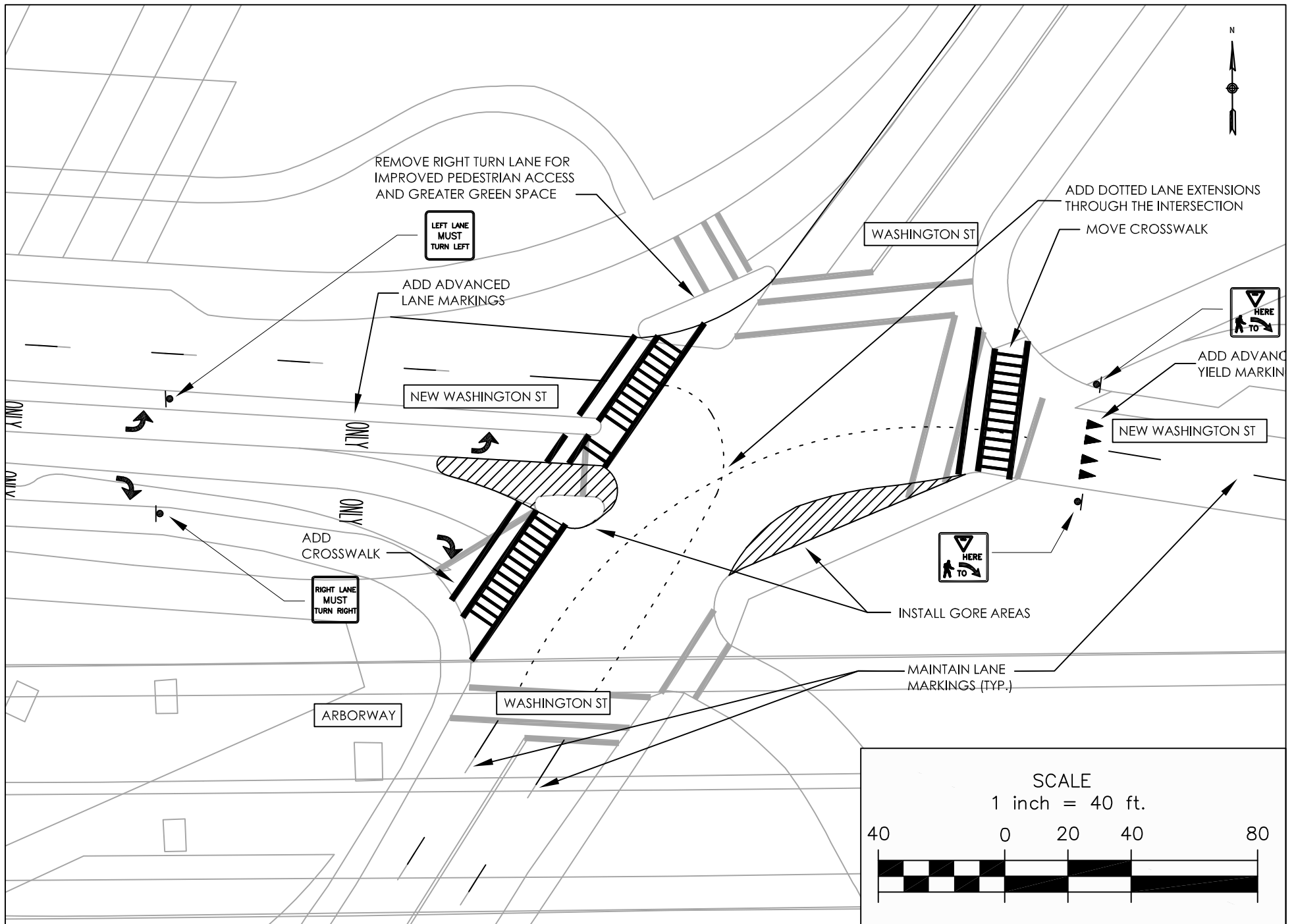
Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Intersection Geometry**
 - Due to the wide expanse of pavement, and limited pavement markings, the intersection can be confusing to drivers, particularly those making left turns.
 - On the northeast corner, there is a wide right turning lane that receives very little traffic.
- **Pavement Markings**
 - Most of the pavement markings in this area are worn.
 - The crosswalk markings were faded, inconsistent with those in the area, and not on pedestrian desire lines.

Recommendations (Figure 1):

A number of recommendations have been identified and are enumerated in order of priority:

- **Signal Coordination**
 - The signal timing should be updated to reflect suggested changes.
- **Intersection Geometry**
 - The right-turn slip lane on the northwest corner may be eliminated due to the relatively light volume. This will create opportunities (e.g. additional green space) at the intersection while making it more pedestrian friendly.
- **Pavement Markings**
 - Lane line extensions should be added so that drivers turning left onto New Washington St. from Hyde Park Ave, and turning left onto Hyde Park Ave. from New Washington St. can better distinguish their lanes.
 - The lane markings on New Washington St. and Washington St. northbound approach should be maintained.
 - Additional legends (e.g., RIGHT TURN ONLY) should be added on the eastbound approach, to address extended queues.
 - A gore area should be added to the eastern side of the intersection to guide turning drivers, and to the western side to shorten the pedestrian crossing.
- **Signs**
 - Signs should be added in advance of the intersection on New Washington St. eastbound to inform drivers of the lane configurations.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - The crosswalk on the eastern approach of New Washington St. should be re-aligned. This will reduce the pedestrian crossing distance.
 - Crosswalks should be installed on the western approach of New Washington St. This is a common crossing route leading from the station to Washington St. north. The crosswalk should be located to take advantage of the many islands on this crossing for pedestrian refuge.



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PREPARED BY:



TITLE:

SHORT TERM IMPROVEMENTS
WASHINGTON ST @ NEW WASHINGTON ST

PROJECT:

FOREST HILLS
BOSTON, MASSACHUSETTS

PREPARED FOR:

BOSTON REDEVELOPMENT
AUTHORITY

FIGURE 1

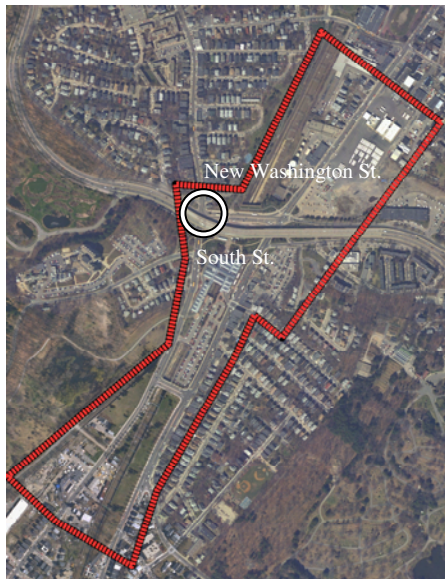
South Street at New Washington Street

Issues:

The intersection of South St. at New Washington St. is a gateway to Forest Hills from the northwest. The intersection geometry is confusing to drivers. This is a dangerous intersection with a fairly high crash rate and high volumes of both vehicular and pedestrian traffic.



Looking West on New Washington St.



Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

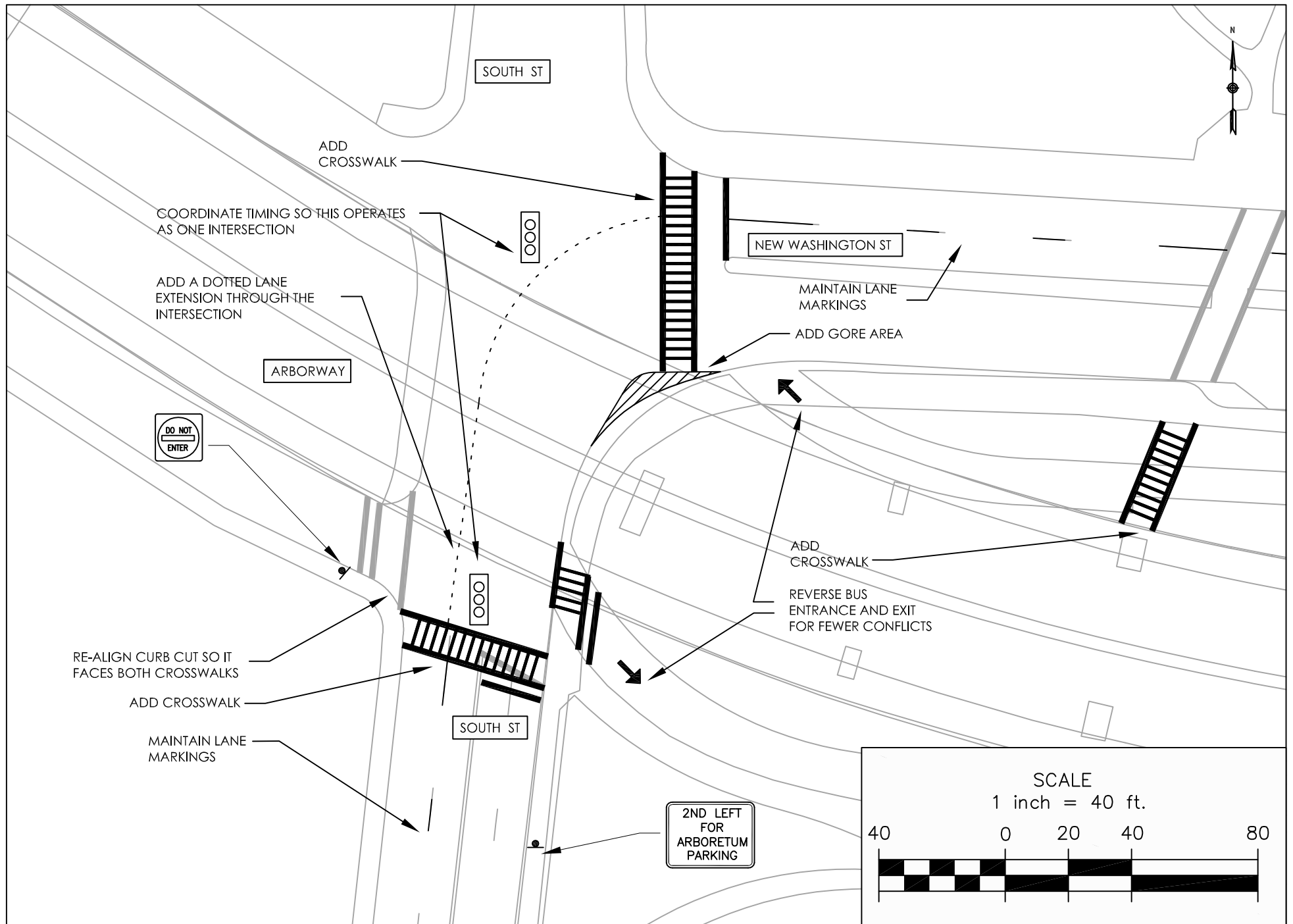
- **Intersection Geometry**
 - Due to the wide expanse of pavement, and limited pavement markings, the intersection can be confusing to drivers, particularly those making left turns.
 - On the southbound approach, busses turning left are waiting in queue and blocking the other vehicles from entering the intersection.
- **Pavement Markings**
 - Many of the pavement markings in this area are worn.
 - The crosswalk markings were faded, inconsistent with those in the area, and not on pedestrian desire lines.



Recommendations (Figure 2):

A number of recommendations have been identified and are enumerated in order of priority:

- **Signal Coordination**
 - The signals at the northern and southern ends of this intersection should run on the same cycle to eliminate red-time queuing under the Arborway.
- **Intersection Geometry**
 - The bus lane entrance and exit should be reversed to allow cars to pass while busses queue (during green-time) under the Arborway.
- **Pavement Markings**
 - Lane line extensions should be added so that drivers turning left from New Washington St. onto South St. can better distinguish their lanes.
 - The lane markings on New Washington St. and South St. northbound should be maintained.
 - A gore area should be added on the eastern side of the intersection to guide motorists away from the bus lanes.
- **Signs**
 - A “Do Not Enter” sign should be installed along the Arborway exit ramp.
 - Way-finding signs should be introduced along South St. northbound to direct drivers to available parking on New Washington St.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - Crosswalks should be installed on New Washington St, across the southern end of South St. and through the bus lane.
 - A Bike crossing should be installed adjacent to the crosswalk on New Washington St, across the southern end of South St. and through the bus lane.



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Washington Street at South Street

Issues:

The intersection of Washington St. at South St. is a gateway to Forest Hills from the west. This is a busy intersection with high volumes of both vehicular and pedestrian traffic.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

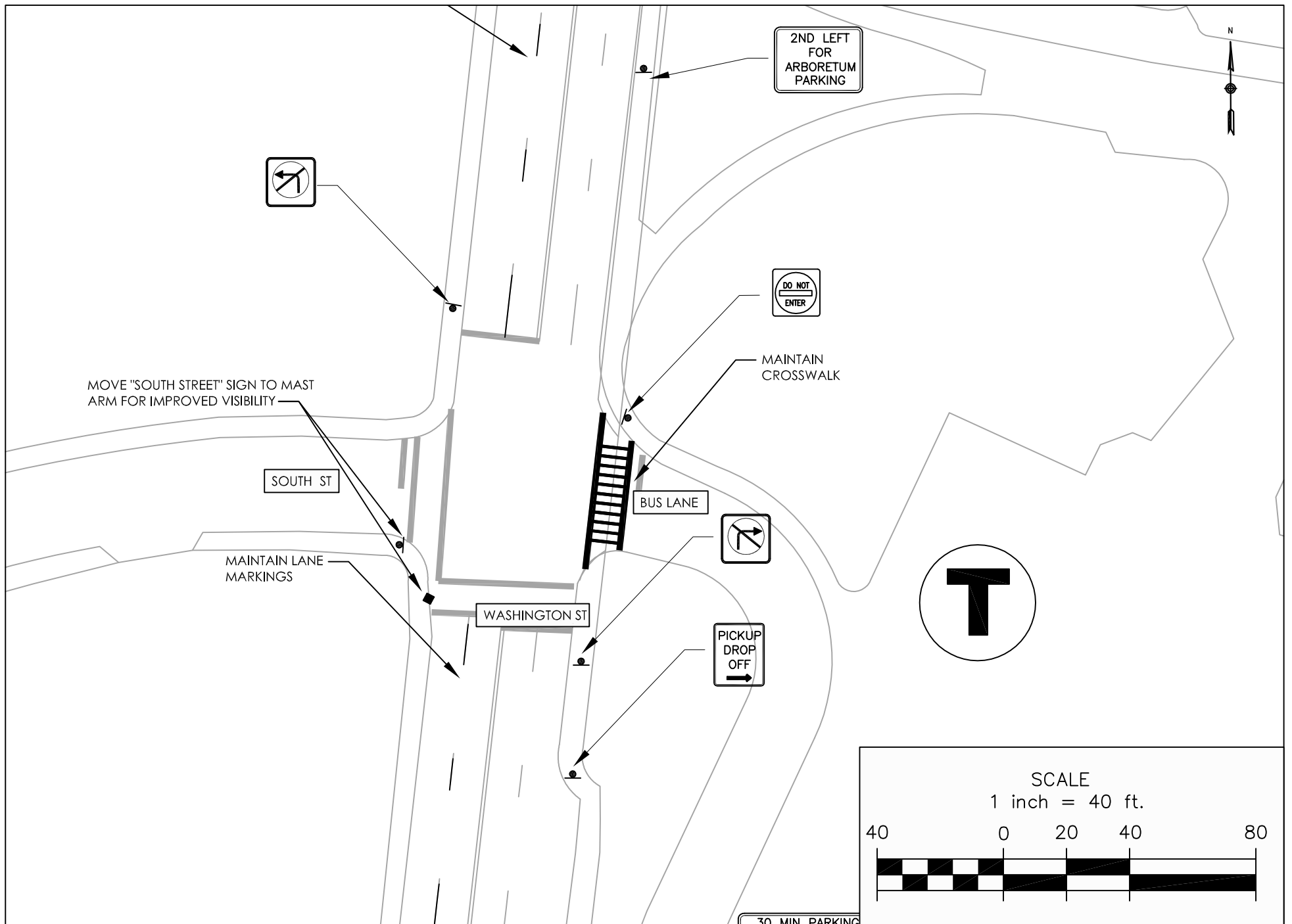
- **Pavement Markings**
 - Most of the pavement markings in this area are worn.
 - The crosswalk markings were inconsistent with those in the area.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.

Recommendations (Figure 3):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - The lane markings on Washington St. should be maintained.
- **Signs**
 - “Do Not Enter” and “No Left/Right Turn” Signs should be added in advance of the intersection to inform drivers of the turning restrictions. This will prevent drivers from making hasty decisions at the intersection.
 - The South Street sign should be relocated to the mast arm so that it is visible to all approaches.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - The crosswalk across the bus lane on the eastern side of Washington Street should be reinstalled to match the other crosswalks.





Washington Street at Asticou Street

Issues:

The intersection of Washington St. at Asticou St. is the location of the pick-up/drop-off area and cab stand for the station.



Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Pavement Markings**
 - Many of the pavement markings in this area are worn.
- **Station**
 - The cab stand is very long and there are many cabs queued in front of the station. This limits drivers' ability to effectively use the pick-up/drop-off area; causing congestion and lane blockage during the peak hour.
 - The allotted pick-up/drop-off area, south of the cab stand, was not being used and vehicles were double parking behind it.
 - There was an excessive amount of trash along this section of Washington St. and the garbage bins were overflowing.

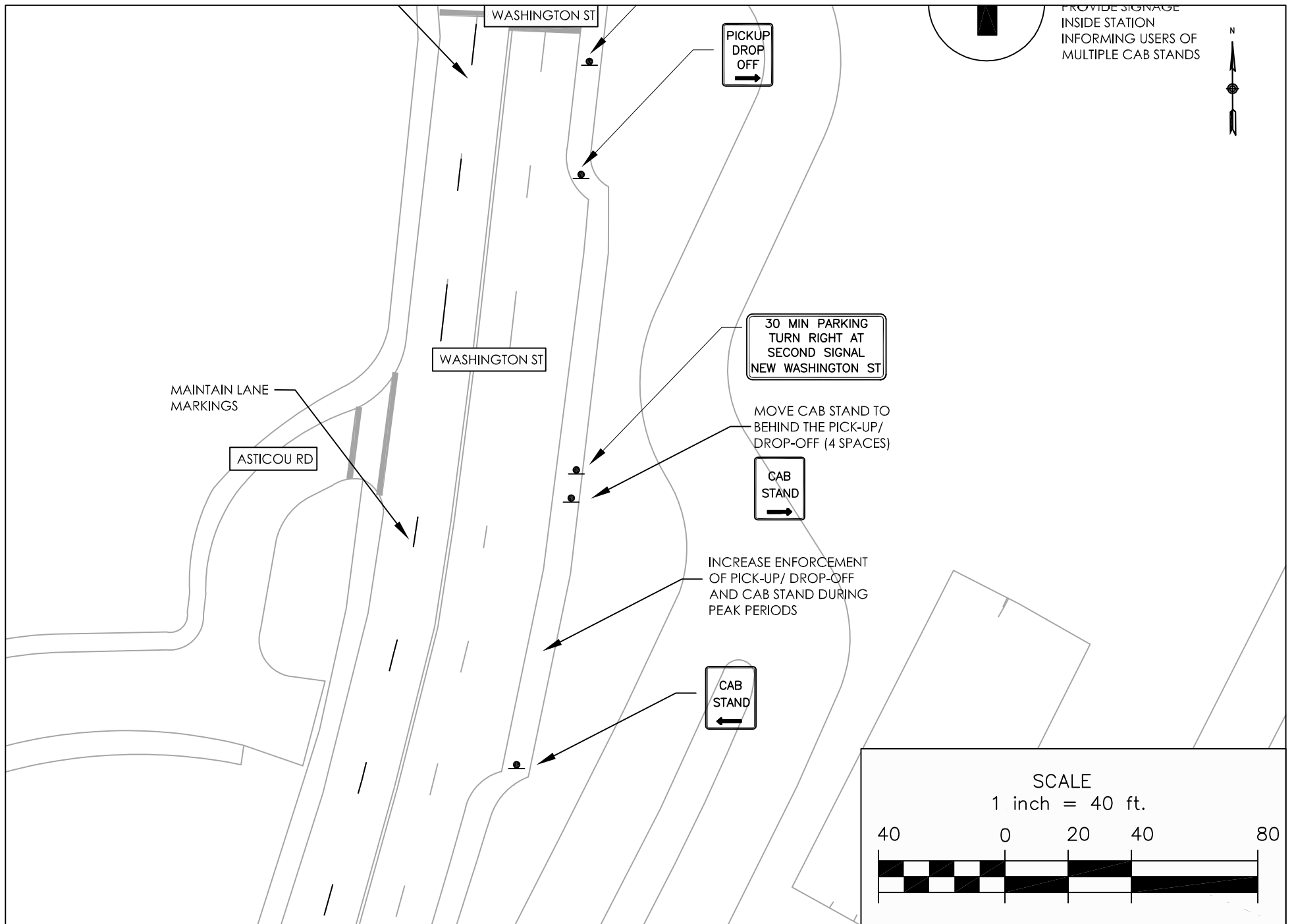
Recommendations (Figure 4):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - The lane markings on Washington St. southbound should be maintained.
- **Signs**
 - A Sign informing drivers to park on New Washington St. should be introduced to reduce double parking on Washington St.
- **Station**
 - The cab stand should be relocated to behind the pick-up/drop-off lane.
 - Police enforcement of the pick-up/drop-off lane should increase.
 - Garbage disposal and street cleaning should occur on a regular basis.



Looking South on Washington St.



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 2018 0101 07-008 Forest Hills VACAD Short Term Improvements.dwg

Washington Street at Bus Lane

Issues:

The intersection of Washington St. at the Bus Lane Entrance is a heavily used roadway for MBTA busses. It is also the location of an Arboretum entrance.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

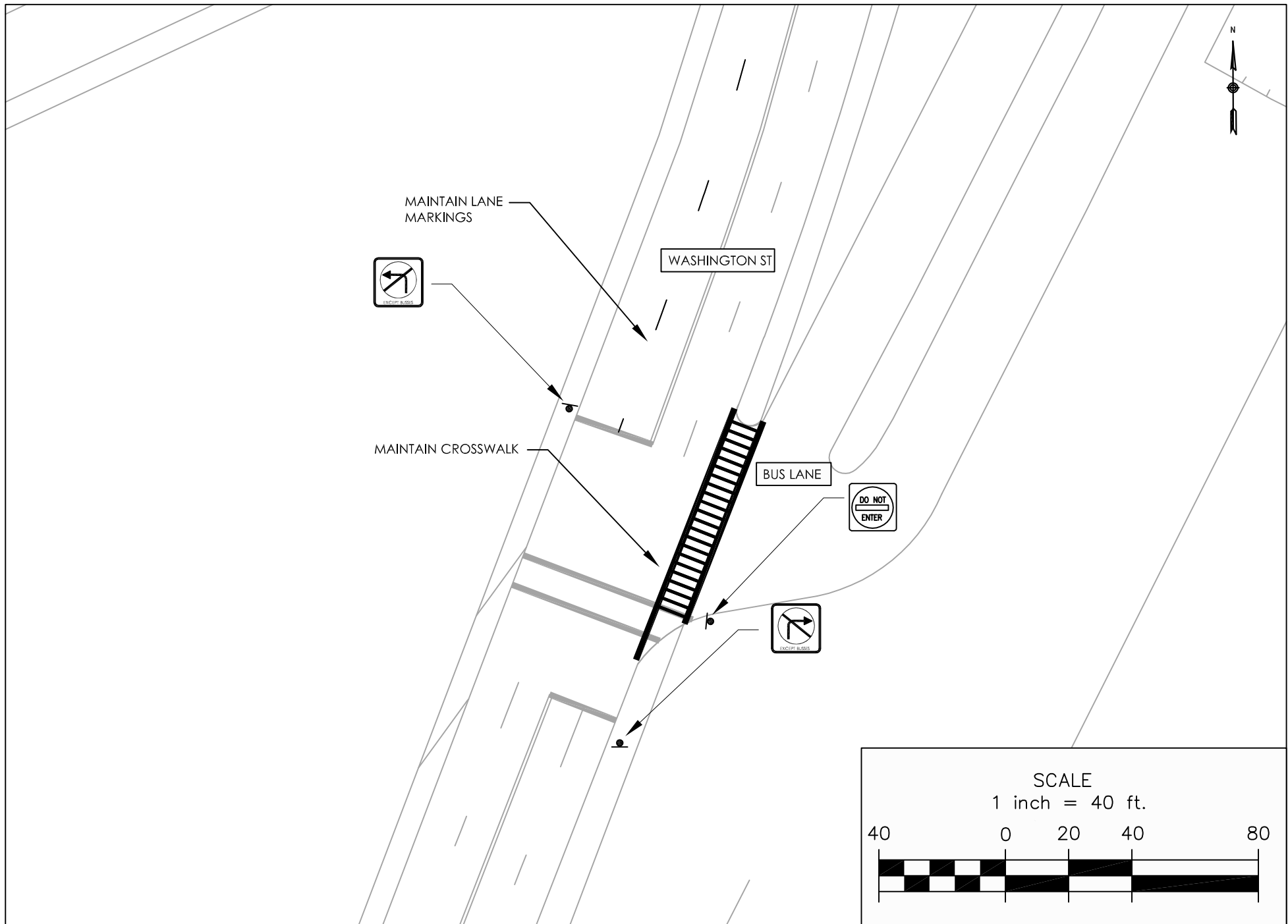
- **Pavement Markings**
 - Many of the pavement markings in this area are worn.
 - The crosswalk markings were inconsistent with those in the area.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.

Recommendations (Figure 5):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - The lane markings on Washington St. should be maintained.
- **Signs**
 - Signs should be added in advance of the intersection on Washington St. to inform drivers of the restrictions. This will prevent drivers from making hasty decisions at the intersection.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - The crosswalk across the bus lane on the eastern side of Washington Street should be redone to match the other crosswalks.





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Washington Street at MBTA Parking Lot

Issues:

The intersection of Washington St. at the MBTA Parking Lot is a short distance from the bus lane and is where the majority of MBTA employees park.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Pavement Markings**
 - The crosswalk markings were inconsistent with those in the area.
- **Parking**
 - The lot is exclusive to MBTA employees.

Recommendations (Figure 6):

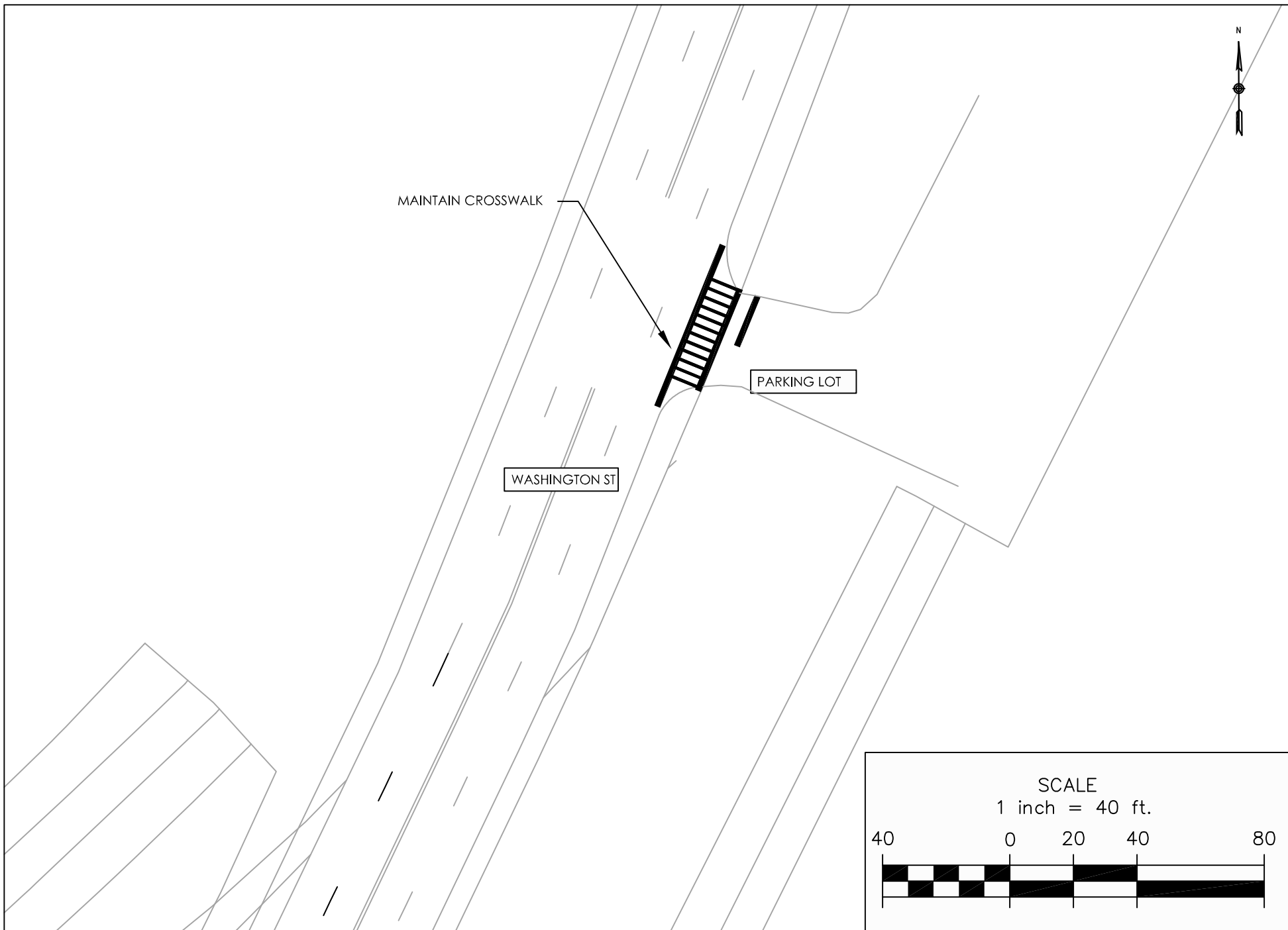
A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - The lane markings on Washington St. should be maintained.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - The crosswalk across the bus lane on the eastern side of Washington Street should be installed to match the other crosswalks.



Washington St at Parking Lot Looking Northeast

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Washington Street at Ukraine Way

Issues:

The intersection of Washington St. at Ukraine Way is a gateway to Forest Hills from the southwest. This is a particularly dangerous intersection with a high crash rate and high volumes of both vehicular and pedestrian traffic.

Findings:

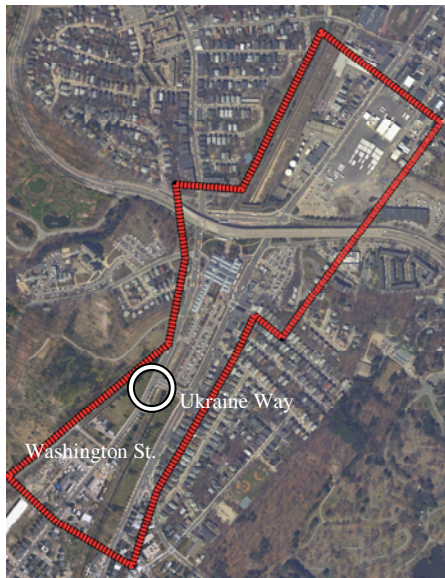
Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Intersection Geometry**
 - Due to the wide expanse of pavement, and limited pavement markings, the intersection can be confusing to drivers, particularly those making left turns.
- **Pavement Markings**
 - Most of the pavement markings in this area are worn.
 - The crosswalk markings were faded.
- **Signs**
 - A sign on Ukraine Way was not visible for westbound drivers due to an overgrown tree.

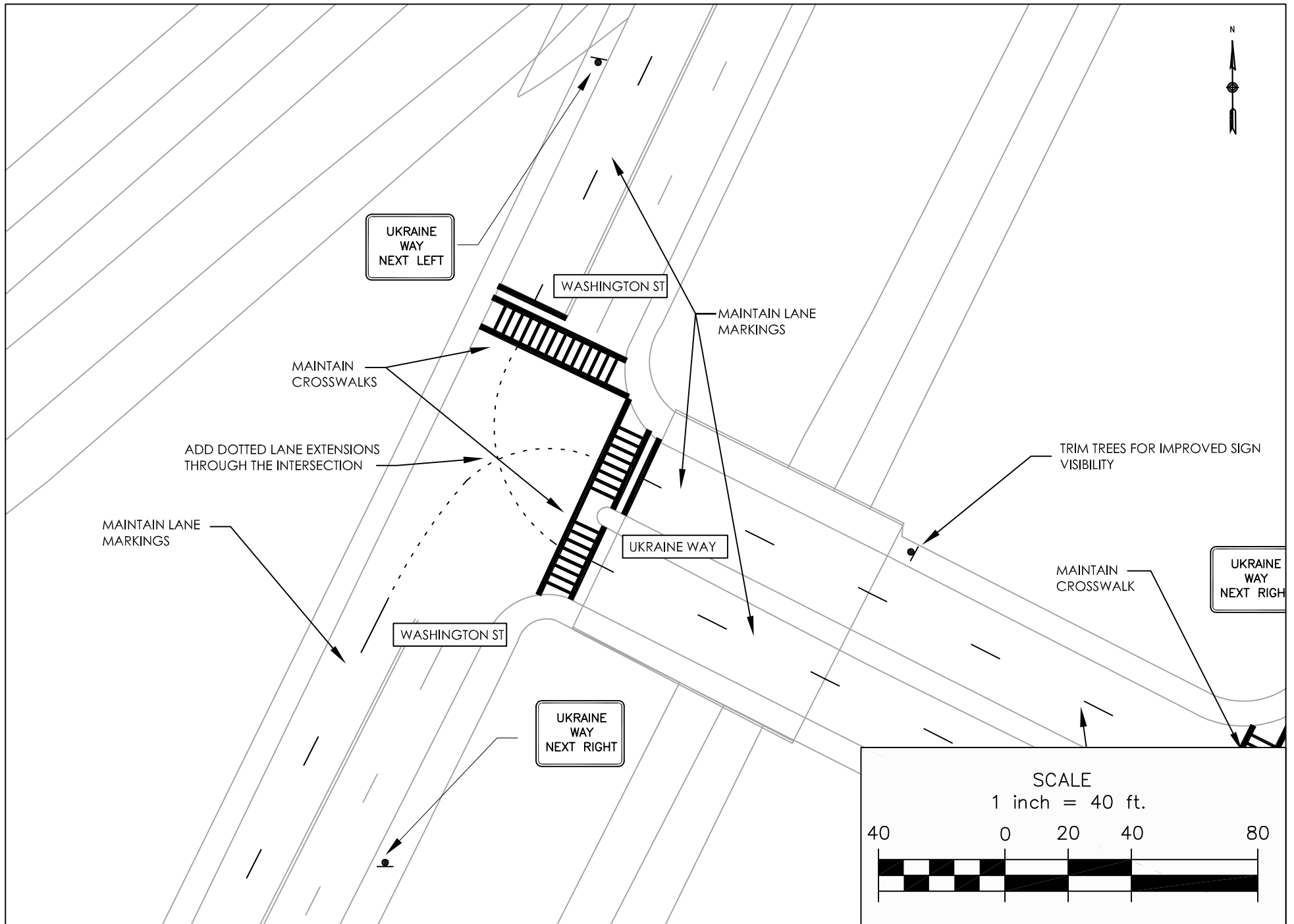
Recommendations (Figure 7):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - Lane line extensions should be added so that drivers turning left can better distinguish their lanes.
 - The lane markings on Washington St. and Ukraine Way should be maintained.
- **Signs**
 - Signs should be added in advance of the intersection on Washington St. to inform drivers of the lane configurations. This will prevent drivers from making hasty decisions at the intersection.
 - Existing signs should be maintained so they are visible to all drivers.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - Crosswalks should be installed on the northern end of Washington St. and across the western end of Ukraine Way.



Looking South on Washington at Ukraine Way



J08 07-008 Forest Hills VACAD/Short Term Improvements.dwg

PREPARED BY:  Planning, Permitting, & Design Two Center Plaza, Suite 700 Boston, Massachusetts 02108	TITLE: SHORT TERM IMPROVEMENTS WASHINGTON ST @ UKRAINE WAY	PROJECT: FOREST HILLS BOSTON, MASSACHUSETTS	PREPARED FOR: BOSTON REDEVELOPMENT AUTHORITY	FIGURE 7
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Hyde Park Avenue at Ukraine Way

Issues:

The intersection of Hyde Park Ave. at Ukraine Way is a gateway to Forest Hills from the southeast. This is a particularly dangerous intersection with a high crash rate and high volumes of both vehicular and pedestrian traffic.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Intersection Geometry**
 - Due to the wide expanse of pavement, and limited pavement markings, the intersection can be confusing to drivers, particularly those making left turns.
- **Pavement Markings**
 - Most of the pavement markings in this area are worn.
 - The crosswalk markings were faded and inconsistent with the rest of Forest Hills.

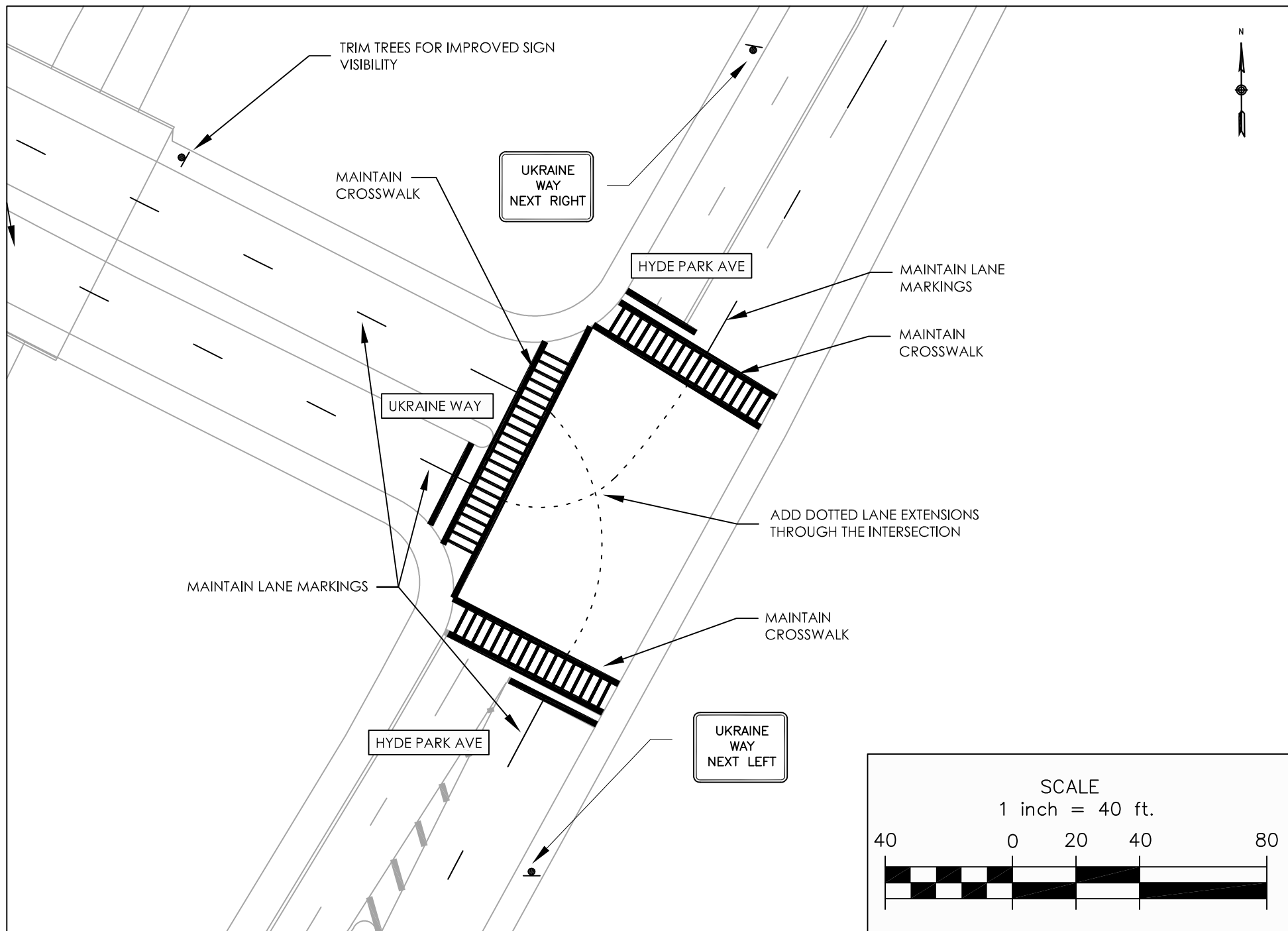
Recommendations (Figure 8):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - Lane line extensions should be added through the intersection so that drivers turning left from Hyde Park Ave. Northbound to Ukraine Way Westbound, and from Ukraine Way Eastbound to Hyde Park Ave. Southbound, can better distinguish their lanes.
 - The lane markings on Hyde Park Ave. and Ukraine Way should be maintained.
- **Signs**
 - Signs should be added in advance of the intersection on Hyde Park Ave. to inform drivers of the lane configurations. This will prevent drivers from making hasty decisions at the intersection.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - Crosswalks should be installed on Washington St. and across the eastern end of Ukraine Way.



Looking South on Hyde Park at Ukraine Way



Hyde Park Avenue at Woodlawn and Weld Hill Street

Issues:

The intersections of Hyde Park Ave. at Weld Hill St. and Woodlawn St. are a gateway to Forest Hills from Forest Hills Cemetery. It is also an entrance to a large public parking lot.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Pavement Markings**
 - The crosswalk markings were faded, inconsistent with those in the area, and not on pedestrian desire lines.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.
- **Parking**
 - Parked vehicles obstruct view of drivers entering Hyde Park Ave from Weld Hill St.

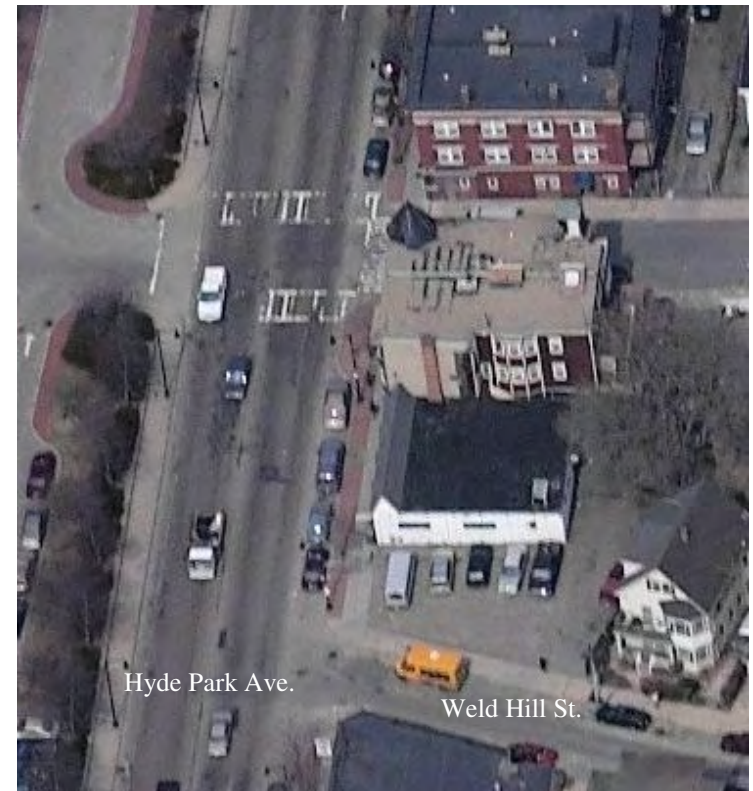
Recommendations (Figure 9):

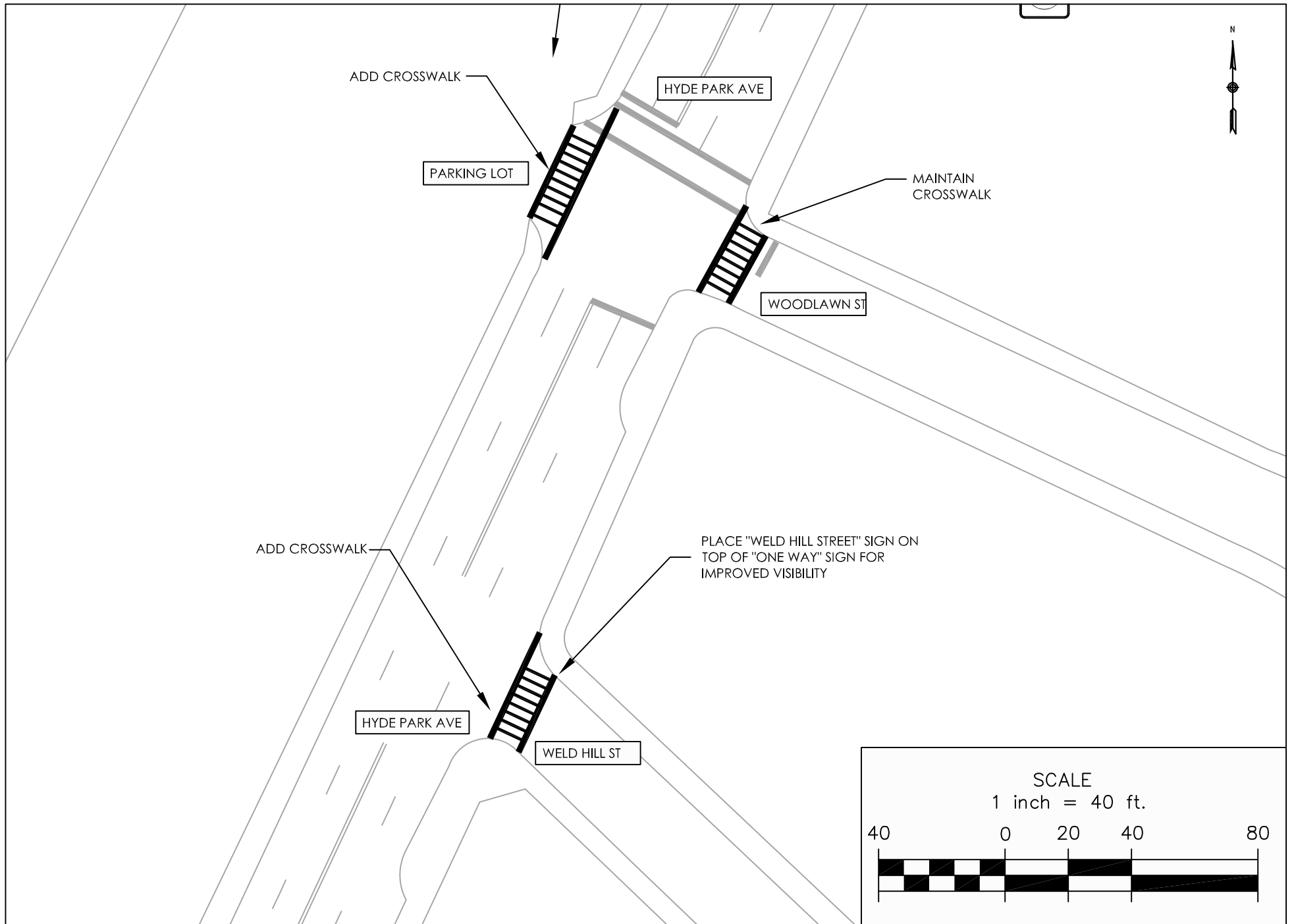
A number of recommendations have been identified and are enumerated in order of priority:

- **Signs**
 - The Weld Hill Street sign should be relocated to the top of the One Way sign for easier identification by drivers.
 - Restrict Parking on Hyde Park Ave. approaching the Weld Hill St. intersection on the eastern side of the street.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - Crosswalks should be repainted across the parking lot and Woodlawn St.
 - A Crosswalk should be installed across Weld Hill St.



Hyde Park at Weld Hill- Looking East





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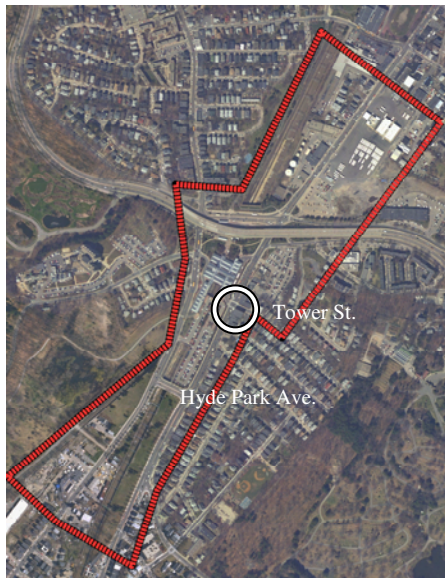
Hyde Park Avenue at Tower Street

Issues:

The intersection of Hyde Park Ave. at Tower St. is a heavily used entrance for MBTA busses.



Hyde Park at Weld Hill- Looking East



Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

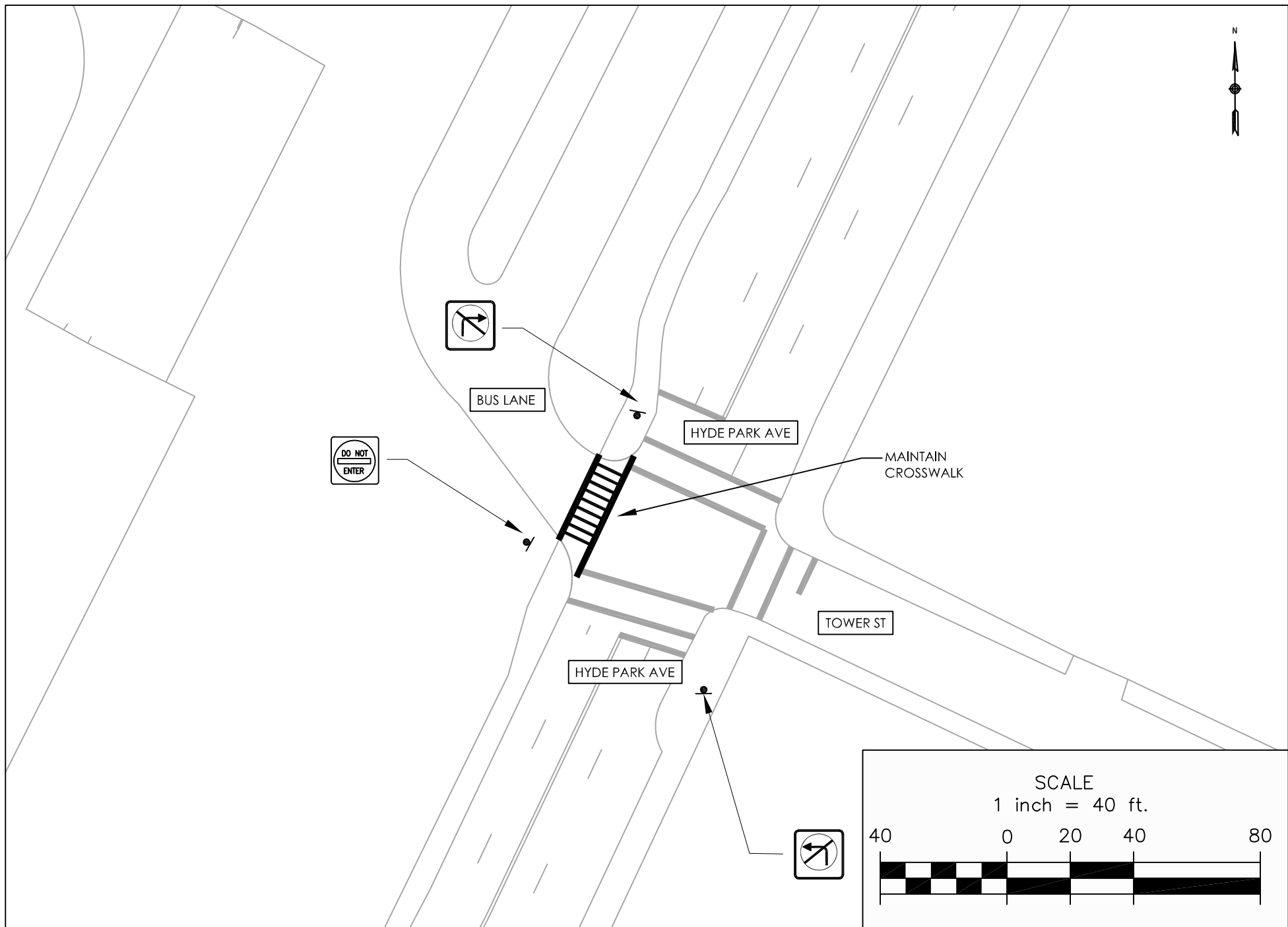
- **Pavement Markings**
 - The crosswalk markings were inconsistent with those in the area.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.

Recommendations (Figure 10):

A number of recommendations have been identified and are enumerated in order of priority:

- **Signs**
 - Signs should be added in advance of the intersection on Hyde Park Ave. to inform drivers of the turning restrictions. This will prevent drivers from making hasty decisions at the intersection.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.
 - The crosswalk across the bus lane on the western side of Washington Street should be reinstalled to match the other crosswalks.





PREPARED BY:



TITLE:

SHORT TERM IMPROVEMENTS
HYDE PARK AVE @ TOWER ST

PROJECT:

FOREST HILLS
BOSTON, MASSACHUSETTS

PREPARED FOR:

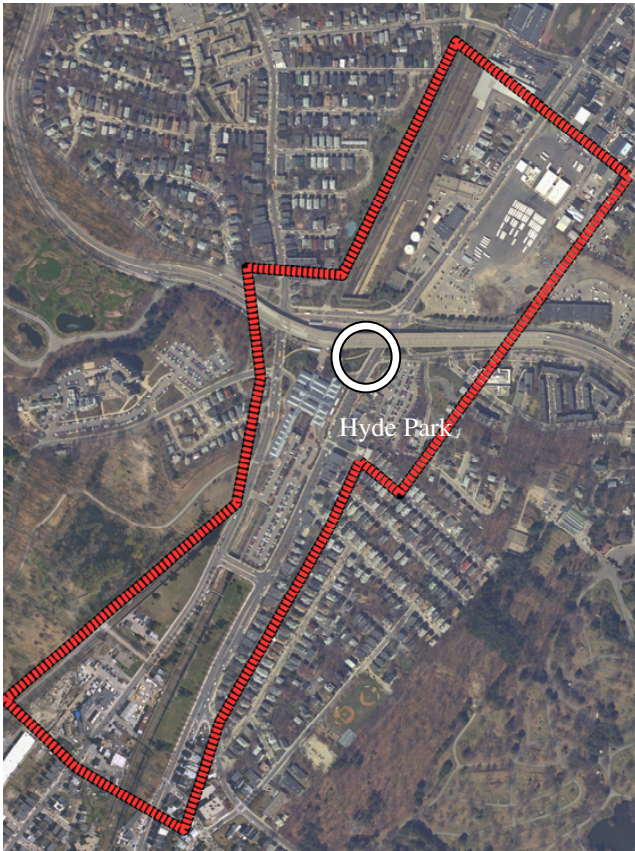
BOSTON REDEVELOPMENT
AUTHORITY

FIGURE 10

Hyde Park Avenue at Parking Lot and the Arborway

Issues:

The intersection of Hyde Park Ave. at the Parking Lot and the Arborway is heavily used for MBTA busses, and is an entrance to a major public parking lot. It is a major exit point for Forest Hills to neighborhoods east.



Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

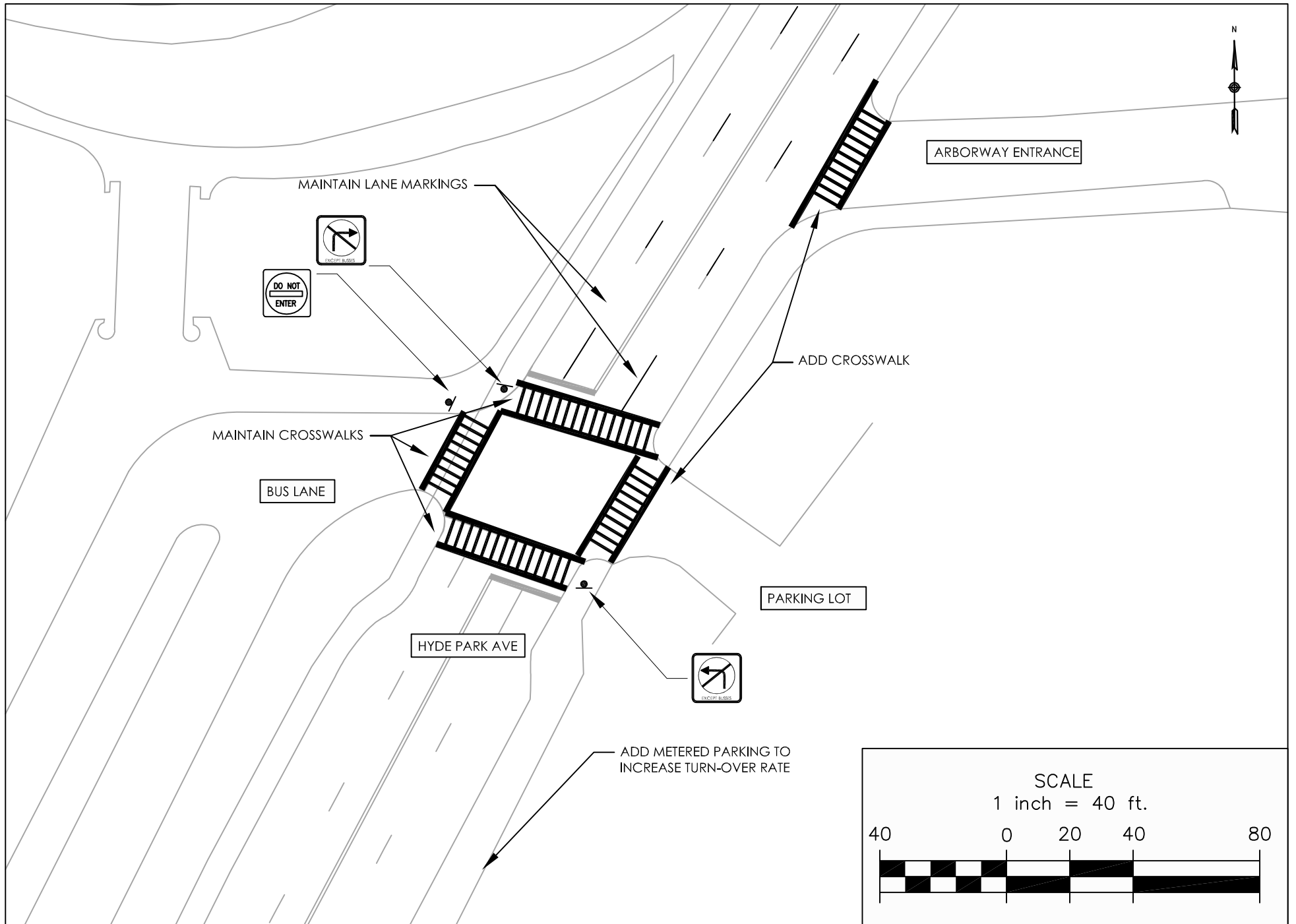
- **Pavement Markings**
 - Some of the pavement markings in this area are worn.
 - The crosswalk markings were faded, inconsistent with those in the area, and not on pedestrian desire lines.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.
- **Parking**
 - Street parking on Hyde Park Ave. has low turnover and few spaces available in front of businesses.

Recommendations (Figure 11):

A number of recommendations have been identified and are enumerated in order of priority:

- **Pavement Markings**
 - The lane markings on Washington St. should be maintained.
- **Signs**
 - Signs should be added in advance of the intersection on Hyde Park Ave. to inform drivers of the turning restrictions. This will prevent drivers from making hasty decisions at the intersection.
- **Crosswalks**
 - All five crosswalks should be reinstalled to be consistent with the other crosswalks (e.g., ladder type) surrounding Forest Hills.
- **Parking**
 - Metered parking should be introduced on Hyde Park Ave. to increase turn-over.





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Washington Street at McBride Street

Issues:

The intersection of Washington St. at McBride St. is an entrance to Forest Hills from the neighborhood north.



Looking Southwest on Washington Street



Findings:

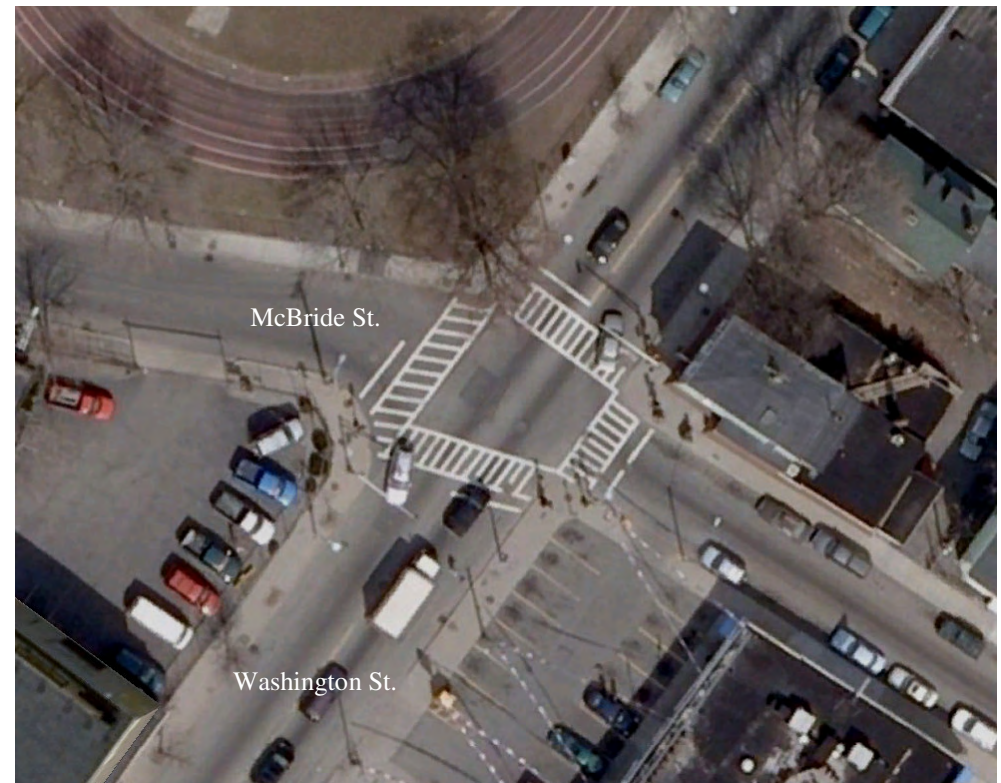
Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

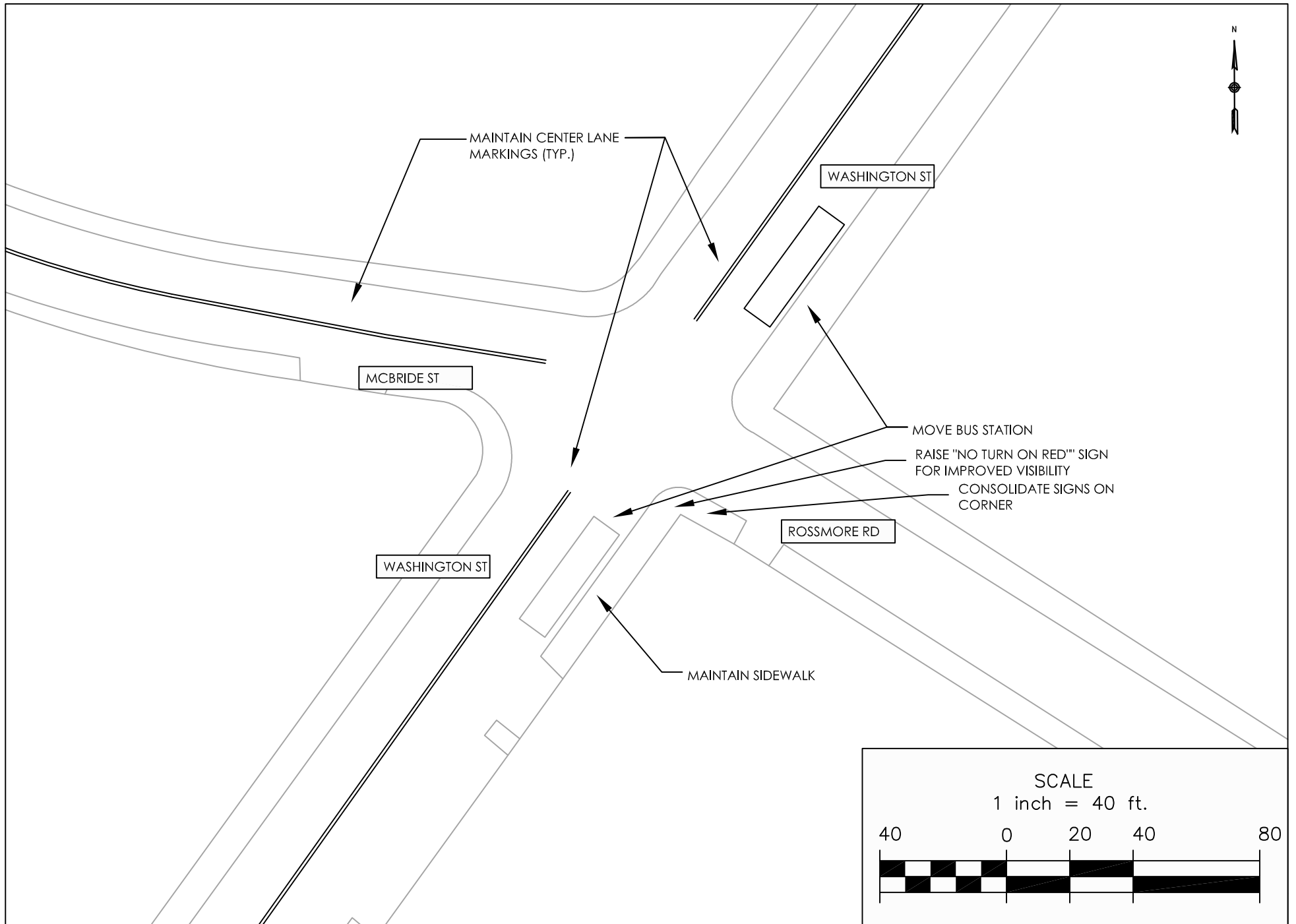
- **Bus Stop**
 - The bus stop in the northbound direction is located before the intersection, which blocks through movements.
- **Pavement Markings**
 - Most of the pavement markings in this area are worn.
- **Signs**
 - The angles and locations of signs make them difficult to see while approaching the intersection.
- **Sidewalks**
 - The sidewalks along the eastern side of Washington St. are in severe disrepair.

Recommendations (Figure 12):

A number of recommendations have been identified and are enumerated in order of priority:

- **Bus Stop**
 - The northbound bus stop should be relocated to the northern side of the intersection.
- **Pavement Markings**
 - The center lane markings on Washington St. and McBride St. should be maintained.
- **Signs**
 - The “No Turn on Red” sign on the southeast corner should be raised so that it is visible to approaching drivers.
 - On the same corner, signs should be consolidated so there are fewer poles.
- **Sidewalks**
 - The sidewalks on Washington St. should be maintained.





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 DRAWING P: 107-008 Forest Hills VACAD Short Term Improvements.dwg

PREPARED BY:  Planning, Permitting, & Design Two Center Plaza, Suite 700 Boston, Massachusetts 02108	TITLE: SHORT TERM IMPROVEMENTS WASHINGTON ST @ MCBRIDE ST	PROJECT: FOREST HILLS BOSTON, MASSACHUSETTS	PREPARED FOR: BOSTON REDEVELOPMENT AUTHORITY	FIGURE 12
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Hyde Park Avenue at Walk Hill Street

Issues:

The intersection of Hyde Park Ave. at Walk Hill St. is a gateway to Forest Hills from the east and the cemetery. This is a busy intersection with high volumes of both vehicular and pedestrian traffic.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **Bus Stop**
 - The bus stop in the southbound direction is located in the middle of the intersection.
- **Pavement Markings**
 - The crosswalk markings were inconsistent with the rest of Forest Hills.

Recommendations (Figure 13):

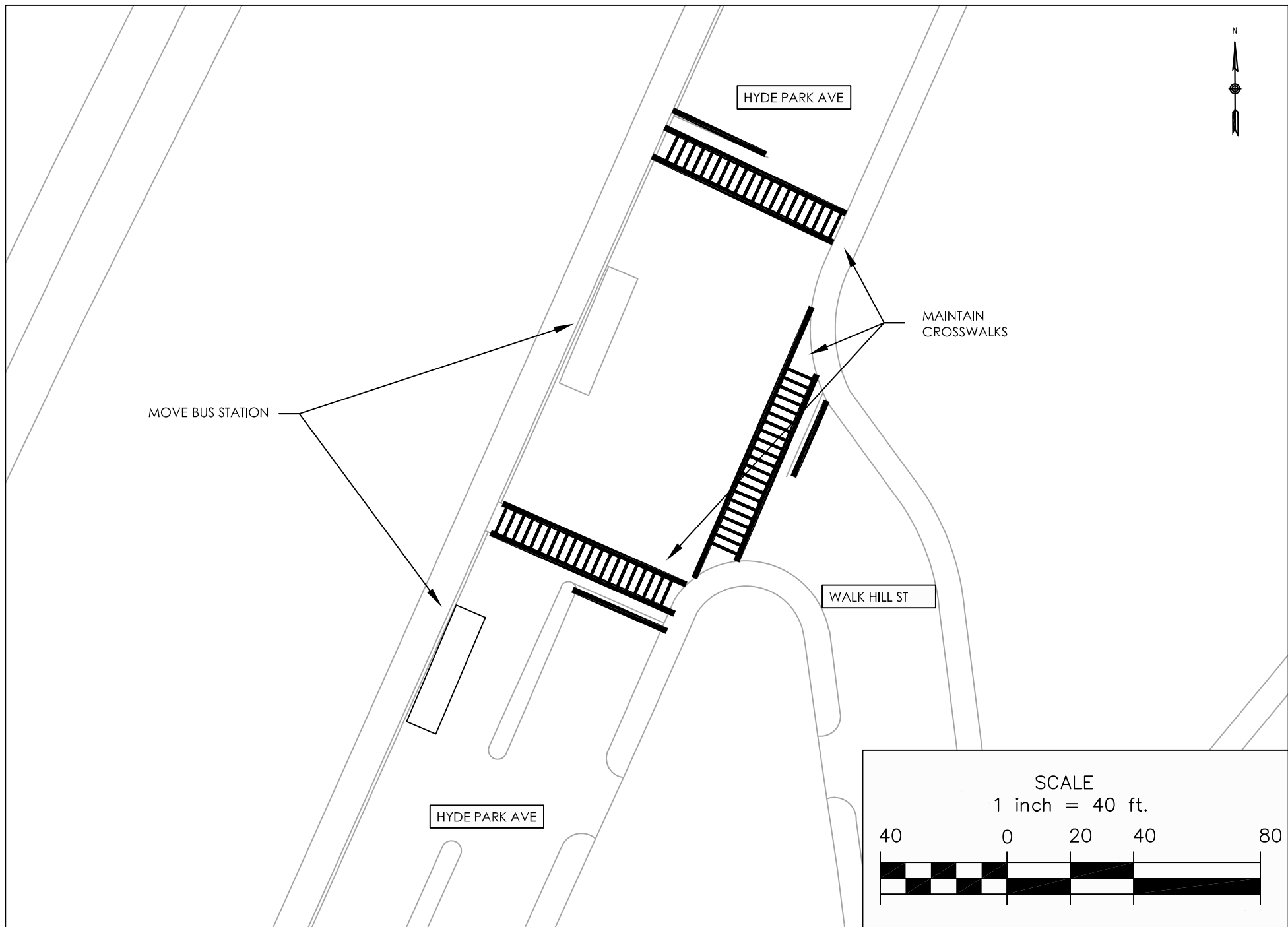
A number of recommendations have been identified and are enumerated in order of priority:

- **Bus Stop**
 - Relocate the bus stop to a location just south of the intersection.
- **Crosswalks**
 - All crosswalks should be maintained, and consistent (e.g., ladder type) throughout the area.



Hyde Park at Walk Hill St. Looking South East





PREPARED BY:



TITLE:

SHORT TERM IMPROVEMENTS
HYDE PARK AVE @ WALK HILL ST

PROJECT:

FOREST HILLS
BOSTON, MASSACHUSETTS

PREPARED FOR:

BOSTON REDEVELOPMENT
AUTHORITY

FIGURE 13

Area Wide Improvements – Cabs, Bicycles, and School Busses

Issues:

Forest Hills is home to many modes of transportation. These multi-modal uses often block traffic and create safety and capacity problems around the station. All users should be accommodated by the transportation infrastructure.



Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. A number of issues were identified, including:

- **School Busses**
 - In the AM peak period, school busses are often found parked in the street blocking traffic on New Washington St. and Hyde Park Ave.
- **Cabs**
 - The cab stand on Washington St. overflows into the pick-up/drop-off lane forcing those drivers into the street.
- **Bicycles**
 - Bicycle theft is a problem around the station.



Recommendations (Figures 14, 15, & 16):

A number of recommendations have been identified and are enumerated in order of priority:

- **School Busses (Figures 14 & 16)**
 - Busses should use the cab stand on New Washington St. in the AM peak.
 - On Hyde Park Ave, if the pick-up/drop-off lane across from Tower St. is full, busses should pull into the turn-around across from Woodlawn St.
- **Cabs (Figure 15)**
 - The cab stand on Washington St. should be relocated to behind the pick-up/drop-off lane.
 - Signage should be provided within the station informing users of the cab stand on Hyde Park Ave.
 - Cab stand lengths should be enforced.
- **Bicycles (Figure 15)**
 - Safe bicycle storage should be provided within Forest Hills Station.
 - Bicycle storage capacity should be increased.

FIGURE 14

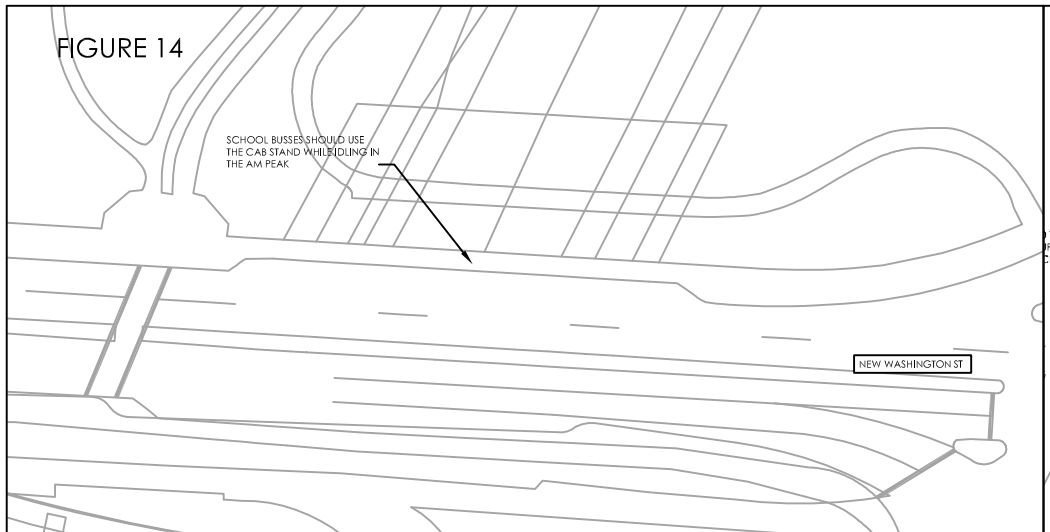


FIGURE 16

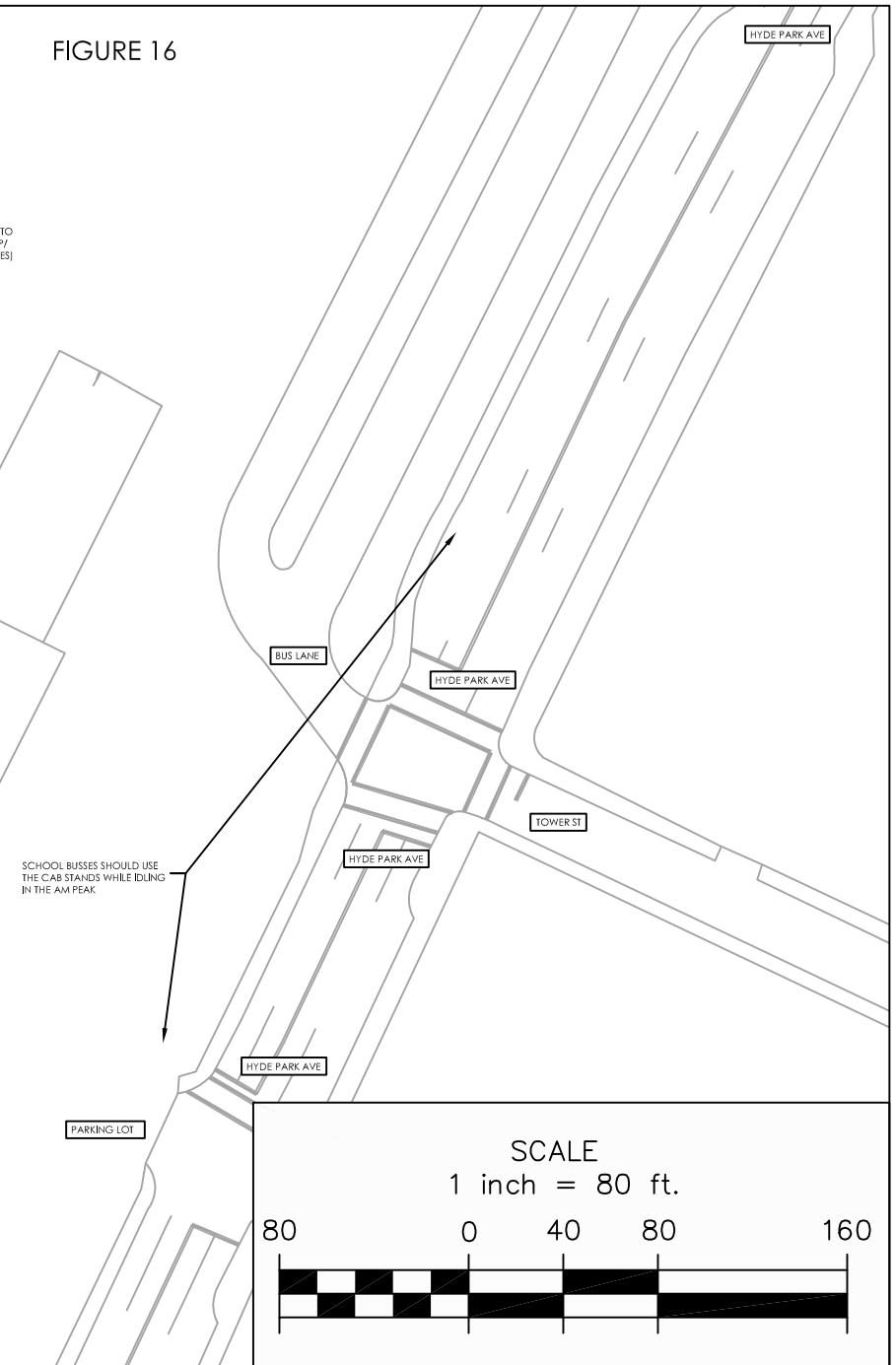
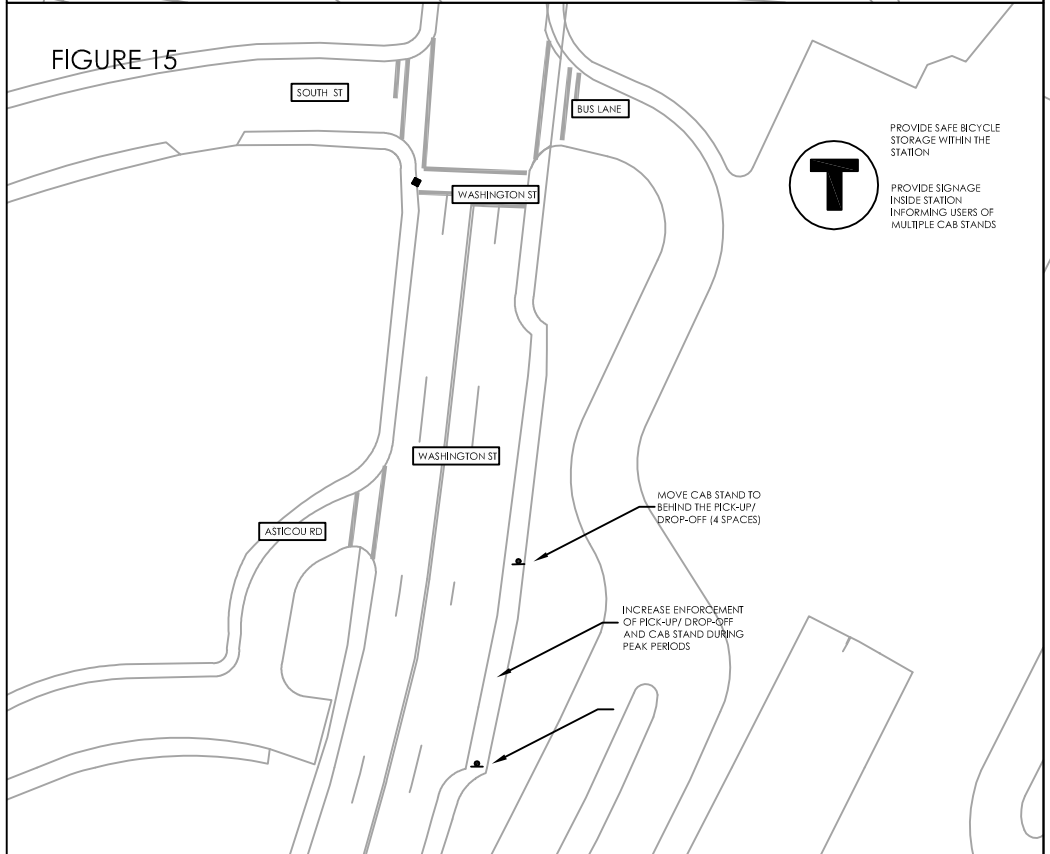


FIGURE 15



Long Term Improvement Recommendations

- Traffic Circulation
- Intersection Geometry
- Bicycle Improvements
 - Paths & Lanes
- Casey Overpass
- Pedestrian Accessibility
- Cab Stands/Bus Drop-off

Traffic Circulation Improvements

Issues:

Forest Hills is home to many modes of transportation. The predominant mode is the automobile. Based on signal density, vehicular volumes, and roadway geometry, the system is congested and auto-centric.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. Additionally, a traffic simulation model was created that considered a number of different options for circulation, including a one-way loop around the MBTA Station, using the existing infrastructure. A number of issues were identified, including:

- **Pedestrians**
 - Without signal coordination, drivers may become frustrated because they have to stop frequently in the corridor. This may lead to drivers disregarding the rules of the road, ultimately jeopardizing the crossing pedestrian.
 - Some sidewalks are narrow and may inhibit movement and future growth.
- **Bicycles**
 - Forest Hills is a critical connection for regional circulation; however, very few accommodations are provided along the corridors around the station.
- **Automobiles**
 - The area is very auto dependent and as a result, other modes have been designed around the auto, instead of the reverse.



Hyde Park Avenue - Looking South

Recommendations:

Based on a preliminary analysis and the simulation model, several improvements should be considered to improve circulation for all modes around the station. This includes converting the “Quad” around Forest Hills Station, namely Ukraine Way, Hyde Park Avenue, Washington Street, South Street, and New Washington Street into a one-way circulation system. This system may comprise solely of a one-way loop, or a combination of one and two-way streets (see traffic circulation figure).

Based on preliminary analysis, only three travel lanes are needed around the Station; not the four that are there today. If the one-way pattern were introduced, not only would it make the roadway safer (e.g. less conflict points), it would also create an opportunity to add “space” for other modes or uses.

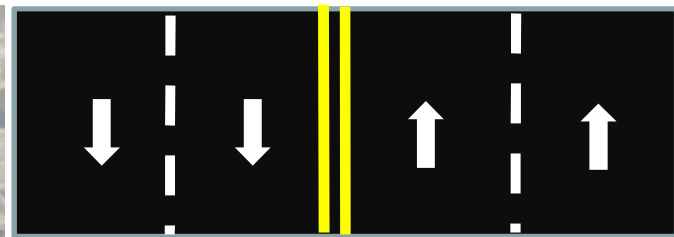
- **Pedestrians (See Roadway Width Alternatives)**
 - The additional space on the sidewalk would create more efficient movement on the sidewalks in dense areas
 - Removing a lane and bumping the curb line out in certain locations would reduce the pedestrian crossing distance.
 - Pedestrians would only have to look one way to cross the street.
- **Bicycles**
 - The additional space would create an opportunity to add bicycle accommodations both on and off the roadway.
- **Parking**
 - The additional space creates an opportunity to provide more on-street parking at key locations in the area.

Next Steps:

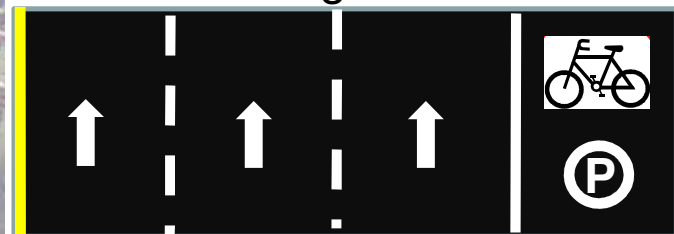
The idea of a one-way loop around Forest Hills was reviewed by the community and a number of agencies. Prior to advancing the conceptual ideas, additional analyses should be performed and evaluated for their merits. Items to be addressed include:

- **MBTA Operations**
 - **Travel Times**
 - The T has expressed concern with headways. They want to make sure that the benefits realized during peak-hour operations will be realized during off-peak hours as well.
 - **Riders**
 - The T is concerned that riders will get frustrated if they have to circle around the station prior to alighting, or after boarding.
- **Convenience**
 - **Travel Times**
 - Local citizens were concerned with the amount of time a one-way loop may add to their trip.
 - **Noise and volume**
 - Many of the citizens were concerned with the potential increase in traffic on “their side of the Station” and related noise. Heavy vehicles and buses that do not pass by their street today, may in the future, depending on the final roadway configuration and was considered a detriment.
- **Capacity**
 - Depending on the final roadway configuration, traffic circulation around the Station may improve. Under a one-way scenario, turns from side-streets are reduced, thereby improving efficiency. Since the turns are removed, some of the signals may be removed, thus improving circulation efficiency even further.
- **Speed**
 - The potential for increased travel due to improved flow should be addressed with a system of traffic calming measures.

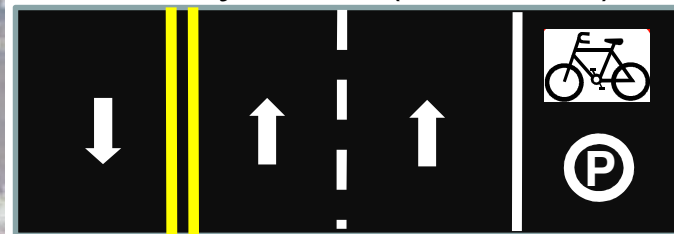
TRAFFIC CIRCULATION ALTERNATIVES



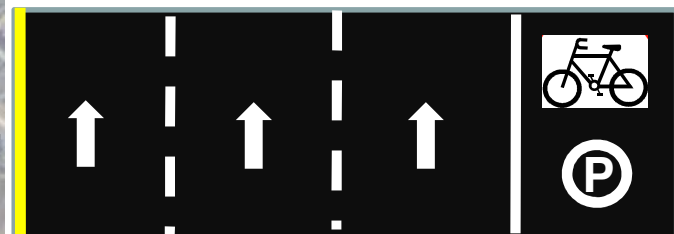
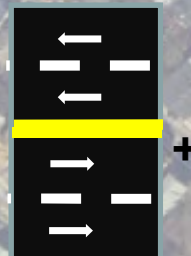
Existing conditions



One-way traffic (cw & ccw)



Three lanes, two-way traffic



Combination of lane configurations

ROADWAY WIDTH ALTERNATIVES



Existing

Key:

- Green Improvements
- Sidewalk
- Existing Curb to Curb
- Parking Lane
- Bicycle Lane

WASHINGTON STREET

Three Lane Options: Parking, Bikes on-street, bikes off-street



**Parking and
Bike Lane**



**Wide
Sidewalk and
Bike Lane**



**Off-Street
Bike Path**

Washington @ New Washington Intersection Improvements

Issues:

The following are long term improvement ideas; several short term action items are recommended in the first chapter.

The intersection of Washington Street at New Washington Street is a key intersection in the area. This intersection serves as a gateway to the area and carries a large volume of vehicles and pedestrians.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. The physical area of the intersection is very large, old trolley tracks run through the intersection and the pedestrian crossing distances are long and confusing. Specific issues identified were:

- **Pedestrians**
 - Crossing locations are limited.
 - Crossing distances are extremely long .
- **Bicycles**
 - No bicycle accommodations are provided at this critical location.
- **Automobiles**
 - The intersection is confusing to drivers due to the wide expanse of pavement and street/driveway configuration.



Washington Street at New Washington Street –
Looking Northeast

Recommendations:

Based on field visits, data collection, and the simulation model, several improvements should be considered to ensure that the intersection is driver, pedestrian, and bicycle friendly.

A number of alternatives exist for this location, from easily-implemented curb changes to a complete redesign that may require changes in the approaches and their alignment.

Specific recommendation include

- **Pedestrians**
 - The existing crosswalks could be shortened, resulting in reduce pedestrian crossing times and improved pedestrian safety.
 - Additional crosswalks should be added to reflect pedestrian desire lines.
- **Bicycles**
 - Bicycle accommodations should be included on the approaches to the intersection, thereby creating the critical regional connection to points north and south of the Station as well as the connection to Franklin Park to the east.
- **Drivers**
 - The right-hand turn slip lane for southbound drivers could be eliminated. Elimination of this lane will improve driver safety through sped reduction.
 - The curb lines along all intersection radii may be adjusted. Adjusting the intersection curb lines will also benefit the drivers, by reducing their travel time through the intersection, while better defining the travel path.

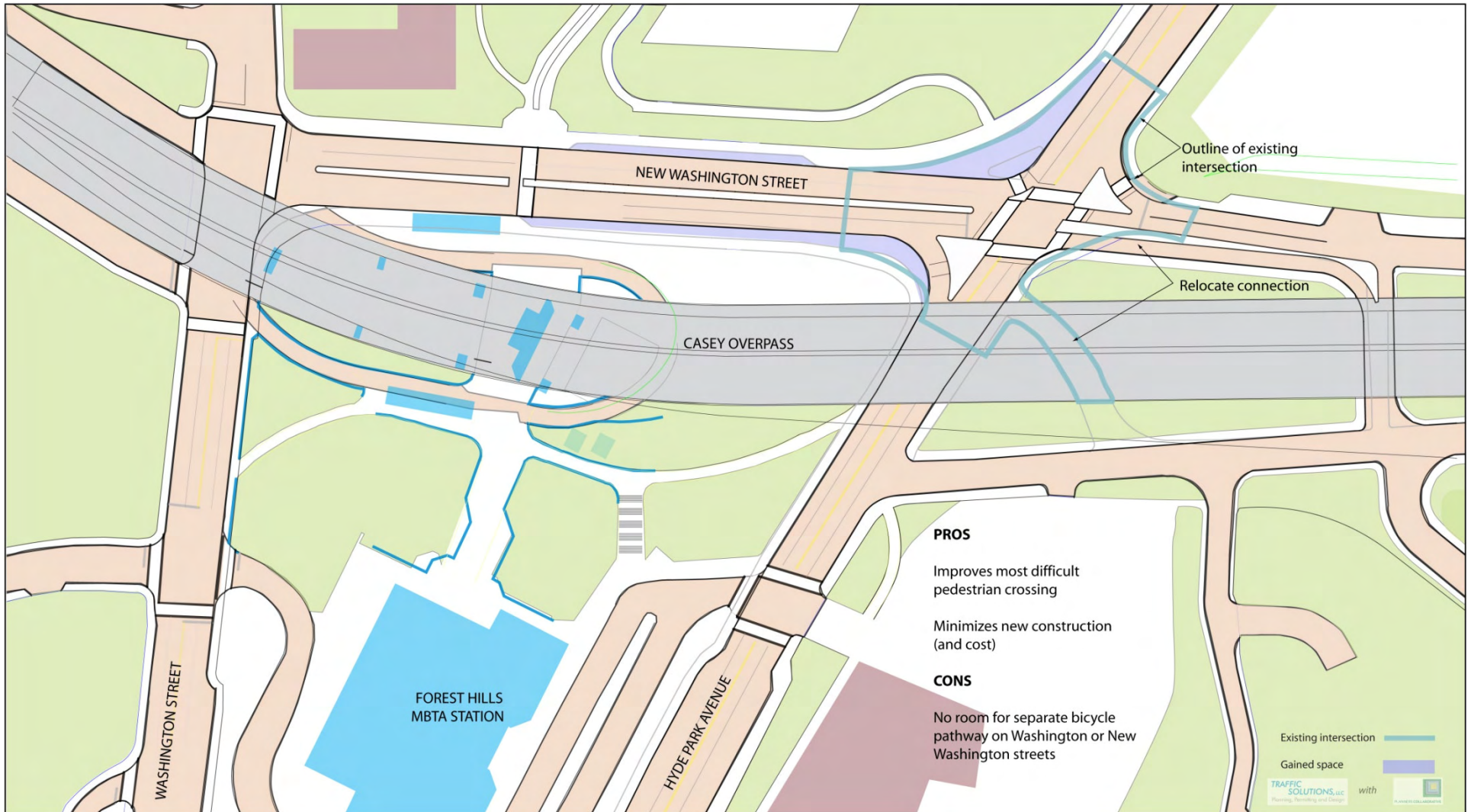
Next Steps:

A number of alternatives have been reviewed by the community and a number of agencies. Not only do the options include intersection improvements and lane changes, they also involve redesigning the access points. Prior to advancing the conceptual ideas, additional analyses should be performed and evaluated for their merits. Items to be addressed include:

- **Access under the Casey Overpass**
 - Currently, there is a roadway located under the Casey Overpass that runs diagonally from the intersection, in a north direction. Improvement options include the elimination of this roadway. With this roadway closed or removed, operations and safety would improve in the area, including this intersection. This location is managed by DCR and will require a multi-jurisdictional collaboration to modify.
- **Roadway Alignment**
 - New Washington Street, from South Street to Washington Street is a wide street, with excess capacity. The roadway contains extended turn lanes, a median, and additional pavement on both the north and south side for drop-offs and pick-ups. This roadway could be realigned - shifted towards the Casey Overpass. Not only would this create an opportunity for additional multi-modal amenities, the pavement width could be reduced, resulting in slower, more uniform speeds.

WASHINGTON AT NEW WASHINGTON

Two-way traffic – current alignment, reduced intersection



Bicycle Improvements

Issues:

Forest Hills is home to many modes of transportation. The predominant mode is the automobile. Roadways around Forest Hills Station do not have bicycle accommodations. This, in combination with the congestion, not only discourages riders, but also leaves a significant gap in the regional network.

Findings:

Traffic Solutions conducted field visits, traffic and pedestrian counts to identify the areas most in need of improvement. The visits and findings were multi-modal centric, and evaluated from both a local and regional perspective. A number of issues were identified, including:

- **Bikes on the Roadway - Locally**
 - The area lacks both on-street and off-street bicycle accommodations.
 - The temporal distribution of traffic and frequency of heavy vehicles contributes to lack of bicycle activity in the area.
- **Complementing the MBTA**
 - The Station lacks bicycle amenities, including storages and repairs. The Forest Hills Station is at the end of the Orange Line. This creates a unique opportunity for cyclists. They may want to ride the T from this location, and as a result, may either bring their bike with them or choose to leave it at the Station.
- **Regionally**
 - Forest Hills is a critical connection for regional bicycle circulation. Points north of the station provide opportunities for cyclists commuting to or from Boston, either on-road or off-road; Franklin Park Zoo is to the east, and the Cape Cod Bike Route is west of the Station.

Recommendations:

Based on the time spent in the field, the data collected, and a comprehensive analysis of the existing conditions, several areas for improvements have been identified:

- **Bicycle Integration – Roadway**
 - Accommodations should be considered for the north/south routes through the area. This may include on-street facilities, off-street dedicated or shared facilities.
 - Accommodations may be added to either the street or off-street if the one-way traffic circulation plan is implemented.
- **Bicycle Security - MBTA**
 - On the basic level, additional bike racks should be added to the Station. These racks would allow T riders to secure their bicycles while they used the T.
 - Providing bike lockers inside the station would improve bicycle security and make it easier for riders to leave their bikes at the Station.
 - The MBTA may want to explore partnering or leasing space, inside the Station, to a business that may either serve a sole or dual role. The sole role would be to store bicycles; the dual role would include having the business function as a business with an ancillary service of storing bikes. Ideally, under either arrangement, minor repairs could be performed on the bicycles.

Next Steps:

If the one-way loop were implemented, bicycle accommodations could be easily integrated into the transportation network. In addition to the one-way loop concept, other opportunities should be explored:

- **Network**
 - Additional analyses should be performed to identify off-street opportunities. This may include shifting the large granite curbing on the east side of the Station, to create additional space for a shared-use path.
- **Security**
 - The City, in conjunction with the T should explore partnering opportunities to provide enhanced security for riders who would like to leave their bike at the Station. This may include a partnership, or a basic space lease.



Looking South on Washington Street toward
Hyde Park Avenue

BICYCLE NETWORK IMPROVEMENTS

Add links to strengthen the city-wide bicycle network

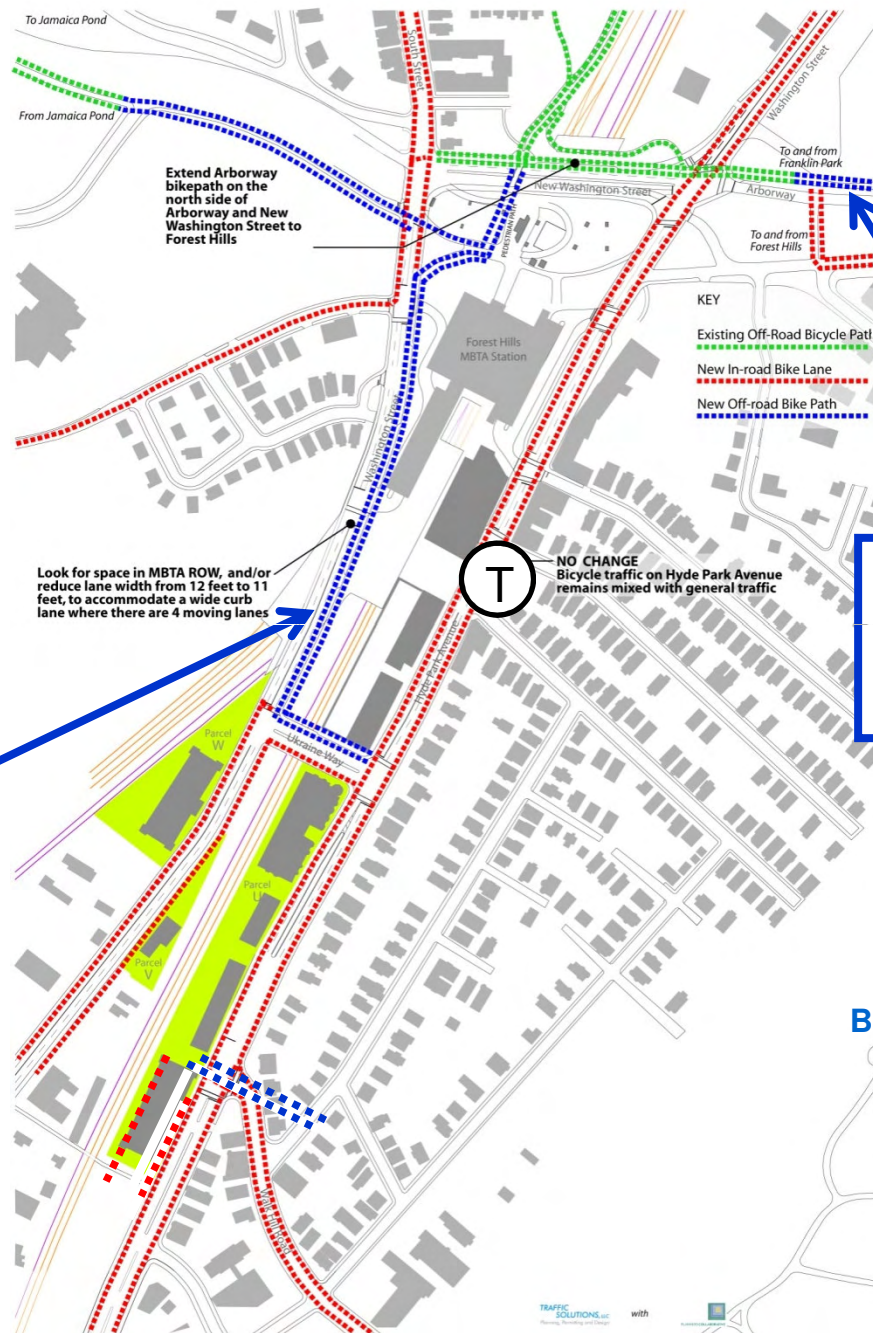
Explore options for off-street bicycle link

Look for space in MBTA ROW, and/or reduce lane width from 12 feet to 11 feet, to accommodate a wide curb lane where there are 4 moving lanes



NO CHANGE
Bicycle traffic on Hyde Park Avenue remains mixed with general traffic

Create off-street connection to Franklin Park



BICYCLE NETWORK

Casey Overpass Improvements

Issues:

Forest Hills is home to many modes of transportation. The predominant mode is the automobile. A major roadway, Route 203, is elevated the northern limits of Forest Hills, namely the Arborway (Casey Overpass). The overpass serves a critical function for the area – it keeps the through traffic out of the area; however, due to its height, age, and design, it presents challenges to the area, from both a transportation design perspective and an aesthetic perspective.

Findings:

Traffic Solutions conducted field visits, and collected data to identify the areas most in need of improvement. A number of issues were identified, including:

- **Overpass Access**
 - The connections to the surface streets in Forest Hills from the Overpass are temporally congested and limited.
- **Severs the Area**
 - The Overpass, due to its physical size, severs the area and creates design challenges.
 - From a pedestrian perspective, the area under the overpass is dark and forbidding.
 - The location and physical size limits the number of options that may be implemented on the Street level.



The Arborway over Washington Street at New Washington Street – Looking East

Recommendations:

Based on the time spent in the field, the data collected, and a comprehensive analysis of the existing conditions, several areas for improvements have been identified:

- **Aesthetic Improvements**
 - A number of opportunities exist under the overpass to create an environment that may be more conducive to pedestrian activity. The piers could be painted, with either murals or a brighter colored paint to make the area more attractive and safe.
 - Material, hung from the superstructure, may improve the environment under the overpass. This material may span between the piers or hang directly from the steel.

Next Steps:

Opportunities to improve the Arborway should be developed and coordinated with DCR and include:

- **Pedestrian enhancements**
 - The area under the Arborway should be improved, through aesthetic enhancements and lighting.
 - Connections under the Arborway should be reviewed and should be refined to match the pedestrian desire lines.
- **Alternative Designs**
 - Due to the age of the Arborway, it may require infrastructure work. This may include removing the superstructure, thereby requiring the vehicles to travel on the surface streets. Alternatives should be explored that minimize the impact to the Forest Hills Area.



Arborway – North of Forest Hills – Looking North (from Hyde Parke Avenue)

CASEY OVERPASS IMPROVEMENTS

View toward station

Brighten underside of viaduct at plaza area with architectural treatment and/or lighting

Explore options for treatment of supports, including art



Replace brick surface with high-quality concrete at path of highest volume

Create separate path for bicyclists

Pedestrian Access

Issues:

One of the largest challenges for Pedestrians in the Forest Hills area is getting from one side of the Station to the other. Washington Street, on the west side of the Station, is approximately 15 feet higher than Hyde Park Avenue, on the East side of the Station. Not only does this elevation divide the site, it also presents challenges for pedestrians traveling through the area.

Findings:

Traffic Solutions conducted field visits, and collected data to identify the areas most in need of improvement. A number of issues were identified, including:

- **Pedestrian Permeability**
 - Pedestrians have a difficult time traveling from one side of the Station to the other due to the difference in grade between the sides and the lack of a direct connection between Hyde Park Avenue and Washington Street.



Crosswalk on South Street – Looking south on Washington Street

Recommendations:

Based on the time spent in the field, the data collected, and a comprehensive analysis of the existing conditions, several areas for improvements have been identified:

- **Pedestrian Enhancements**
 - As the parcels in Forest Hills change, creating critical connections, namely from one side of the Station to the other, may exist. These should continue to be explored, and integrated into the final design when appropriate.
 - The City should continue to monitor the pedestrian desire lines and volumes and ensure that they are properly and adequately accommodated on the network. This may include wider sidewalks or additional crosswalks in the area.

Next Steps:

Pedestrian movement and activity should be continually monitored by the City and integrated into any future design. Most importantly is a direct connection from the west side of the station (Washington Street) to the east side of the Station (Hyde Park Avenue). Pedestrian volumes and desire lines should be monitored continuously and the network should be modified to address the demands.

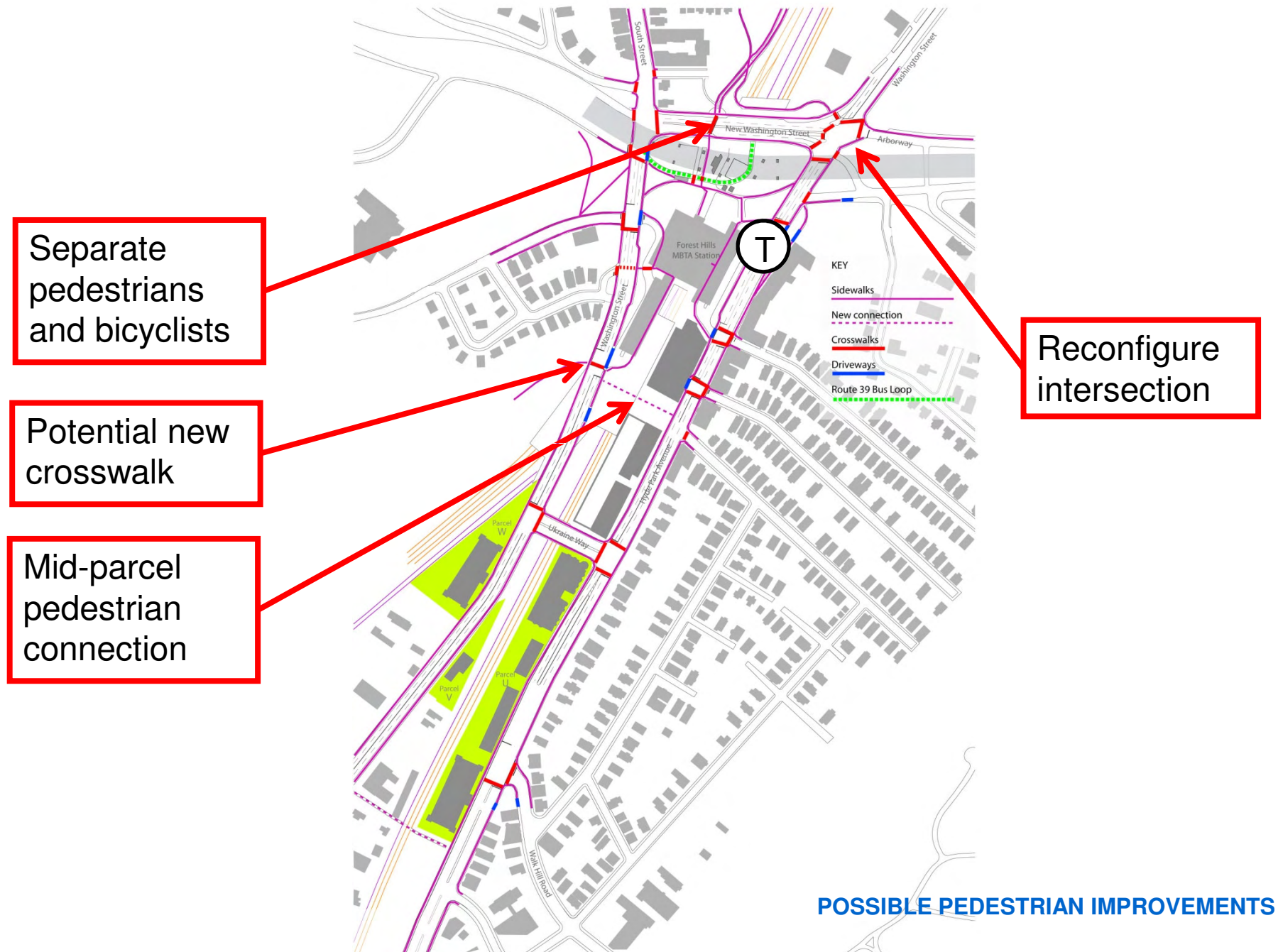


Crosswalk on New Washington Street



Crosswalk on Hyde Park near Walk Hill Street – Looking North

PEDESTRIAN ACCESS IMPROVEMENTS



Streetscape Improvement

Issues:

In an urban environment, like Forest Hills, it is critical to maintain a balance between the harder, structural environment and the softer, more amenity and aesthetically driven environment. Some streetscape improvements have been made in the area, while others are needed.

Findings:

Traffic Solutions conducted field visits and collected data to identify the areas most in need of improvement. A number of issues were identified, including:

- **Street Trees**
 - A number of street trees have been maintained and are healthy; however, there are locations where the street trees have died and should be replaced.
- **Sidewalks**
 - In and around the station, many of the sidewalks are in good condition. Along some of the streets, and in isolated locations, the sidewalks are in need of repair.
- **Street Lights**
 - Many of the street lights along Hyde Park Avenue adjacent to the Station have been updated to reflect the City's Standards.



City of Boston Pendant Street Light – Looking North on Hyde Park Avenue

Recommendations:

Based on the time spent in the field, the data collected, and a comprehensive analysis of the existing conditions, several areas for improvements have been identified:

- **Street Trees**
 - Dead street trees should be removed and replaced. Also, in locations where there aren't any trees, additional trees should be planted.
- **Sidewalks**
 - Sidewalks that are in a state of disrepair should be addressed. Also, a consistent sidewalk pattern and material for Forest Hills should be established and installed when appropriate.
- **Street Lights**
 - The "old" concrete street lights should be replaced with the City's newer pendant standard. Moreover, additional lighting should be installed at locations where lighting may fall below an acceptable threshold.

Next Steps:

Any improvements that occur in Forest Hills should include streetscape elements. The City should continue to improve the area by introducing updated elements where appropriate, including sidewalks, street trees, and street lights.



“Older” Style Streetlights on Washington Street



Existing Streetscape – Washington Street – Looking North

STREETSCAPE IMPROVEMENTS:

Primary Secondary



Street lights

Street trees

Signs

Furniture

Sidewalk paving

Crosswalks

Roadway paving

Art



STREET LIGHTING IMPROVEMENTS:



Convert light-colored shoebox fixtures to dark, which are the dominant type of fixture



Maintain pendant fixtures along Hyde Park Avenue

STREET FURNITURE IMPROVEMENTS:



- Select to accompany primary elements (private improvements of the public way)
- Artist may design as alternative



NEXT STEPS

Funding Strategy – Planning / Engineering

- Finalize Long Term Recommendations to 25% Construction Documents - combined development project contributions and BRA / BTD / State funds

Funding Strategy - Implementation

- Short Term Recommendations – BTD / City of Boston
- Long Term Recommendations – combined development project improvements and City of Boston / State projects

Sequencing

- Planning and Engineering work to follow sale of MBTA parcels development project planning
- Implementation of improvements to coincide with development project construction