Proposed Plan for Downtown Flushing PGS

Proposed Lots for Pilot Study

DCP recommends including all four municipal lots for the pilot PGS study in Downtown Flushing. The main reason for not including privately-owned lots in the initial phase, is the anticipated difficulty of requiring private facility owners to shut down their facilities for installation of equipment.

The proposed municipal lots have a total of 1,440 spaces, as opposed to the 1,810 spaces available in the private lots. However, many of the spaces in the private facilities are used by residents of the buildings they occupy. So, the number of spaces available to the public in the private facilities is far smaller.

Flushing Municipal Lot 1

Figure 12 *The two levels of Lot 1.*

Lot 1 is by far the largest lot in the study area, with two levels and a capacity of 1,101 spaces including 21 handicap spaces. This major parking facility provides park-and-ride service and is near the Flushing station of the LIRR, #7 subway's Flushing/Main Street station, and various buses in Downtown Flushing. This lot has six access points located on four different streets as

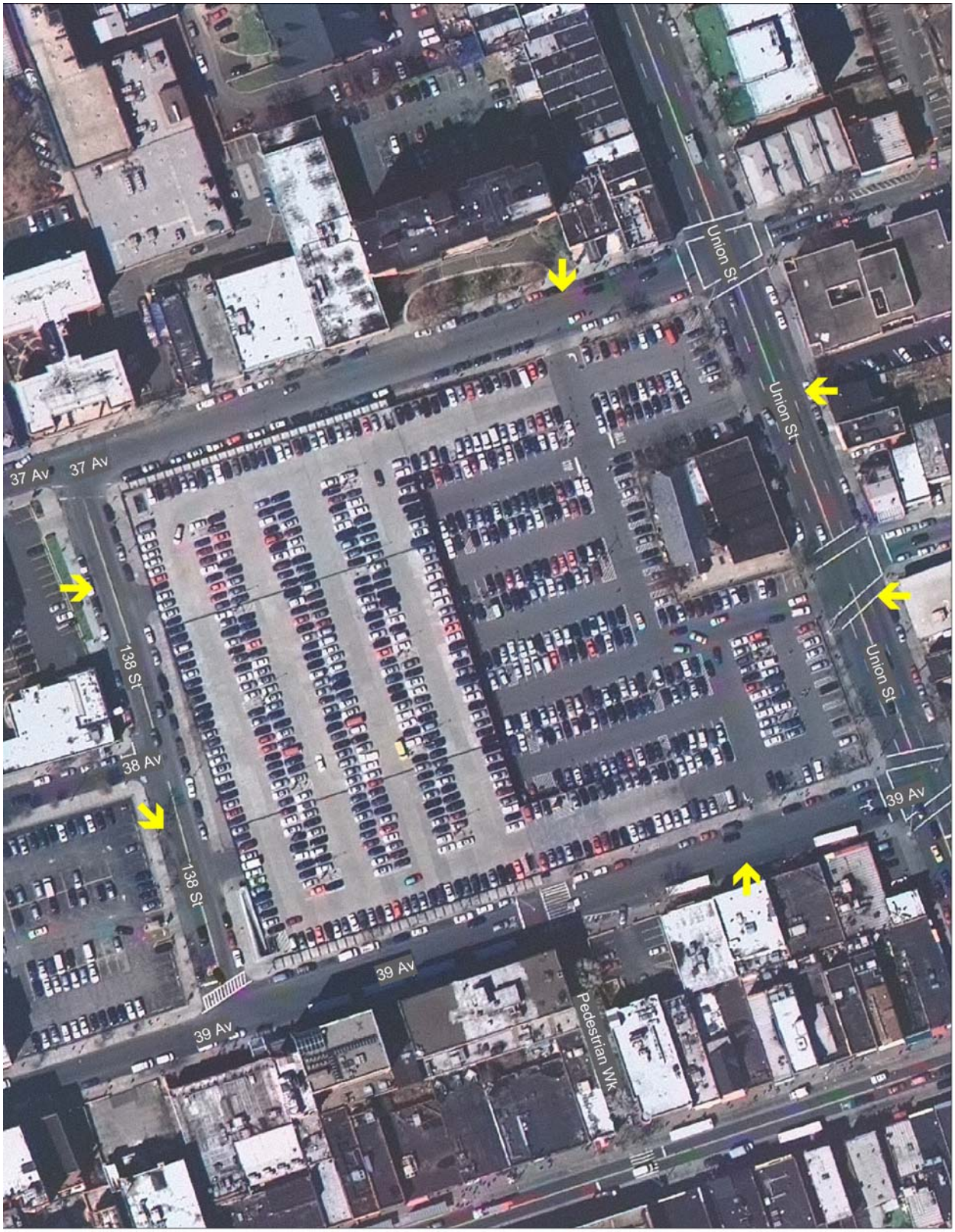

Figure 13 *An aerial view of Lot 1. The arrows indicate the access points to the lot.*

shown in Figure 13. There are two access points each on Union and 138th Streets. 37th and 39th Avenues each have one access point.

For the 451 spaces with a 12-hour limit, the hours are from 6 a.m. to 10 p.m., including Sundays, with a rate of $0.25 per 15 minutes. For its 578 spaces with a three-hour limit, the hours are from 8 a.m. to 10 p.m., including Sunday, with a rate of $0.25 per 15 minutes. Permits are available for 72 spaces at $255 per quarter year.

Flushing Lot 1 has the most parking spaces, and the most access points, as compared to other municipal lots in the study area. This makes it the most complex in terms of installing equipment for a PGS. Since the facility has two levels - with 12-hour-limit spaces on the top level, and 3-hour-limit spaces on the lower level - if the site is not redeveloped, counters would need to be installed on the ramp leading to and from the upper level, in addition to the facility's access points, in order for the PGS to calculate the actual number of short-term parking spaces that are available when drivers enter and leave the facility. It should be noted that NYC has put the property up for sale, and that NYCEDC's RFP specifies that 750 short-term public parking spaces, 75 permit spaces, and additional parking required by zoning would be provided on the site. 39th Avenue lies on the south side of the lot. It is a one-way street, with heavy bus use and an eastbound flow of traffic. There is one unmanned access point on this street. There are two unstriped travel lanes, one of which is used extensively by buses for stops, and one parking lane. Driving down 39th Avenue one encounters the lot on their left hand side.

Union Street lies on the east side of the lot. It has two unmanned access points. Union Street is a two-way street. It has a north-south traffic flow. It has two travel lanes (one in each direction), and two parking lanes (one in each direction). Driving north on Union, drivers see the access points on their left hand side. Driving south, drivers see the access points on their right hand side.

One of the two access points on Union Street lies immediately across from 38th Avenue. 38th Avenue is an eastbound street that ends on Union Street. There is a traffic light at this access point. Cars exiting from this access point may be stopped for a couple of seconds, waiting for the light to turn green.

The second access point on Union Street is located immediately across the street from the 109th police precinct. It is also unmanned. Due to the September 11, 2001 terrorist attack, the police precinct across the street took the temporary security measures of closing down this access point and Union Street between 38th and 37th Avenues. As of this writing, this access point has been reopened, as has the aforementioned segment of Union Street. While this was a temporary shutdown, it may reoccur in the future.

37th Avenue is located on the north side of Lot 1. It is a one-way street with a westbound flow of traffic. It has two unstriped travel lanes and two parking lanes. Driving down this road, drivers encounter the unmanned access point on their left hand side.

138th Street is situated on the west side of the lot. This street has two access points. The street's flow of traffic is north-south. It has one travel lane in each direction, and one parking lane in each direction. Driving north on 138th Street, drivers see the access points on their right hand side. Driving south, they see the access points on their left hand side. Both access points are unmanned.

As described above, in the Land Use Characteristics section, NYCEDC has issued an RFP for the sale and redevelopment of Flushing Lot 1. This RFP requires a mixed-use development that increases the number of short-term public parking on the site to 750 spaces; provides 75 permit spaces; and provides additional parking as required by zoning. The RFP also states "NYCEDC will work with NYCDOT and the NYC Department of Parks and Recreation to relocate the 400 commuter spaces currently on the Site to Shea Stadium."

If Flushing Lot 1 is sold and redeveloped, implementation of the Downtown Flushing Parking Guidance System - specifically the installation of vehicle counters at Lot 1 - would be affected. Therefore, prior to final specifications for installing PGS equipment at Flushing Lot 1, the status of the site's sale, redevelopment plans, and arrangements for relocating commuter parking to Shea Stadium will be evaluated. If the site has been sold, the planned access points for the new parking facility at Flushing Lot 1 and the relocated commuter parking at Shea Stadium would be taken into account. Consideration will be given to the fact that project funding will install PGS equipment with a 10-year life span.

It is expected that if Lot 1 is sold, private owners would participate in a parking guidance system for Downtown Flushing that includes the future parking facility on Lot 1. This expectation is based on the large number of public parking spaces required as part of the redevelopment; the benefits of PGSs to parking facility operators; and the recommendation in the Downtown Flushing Development Framework for utilization of ITS to direct drivers to available spaces.

Flushing Municipal Lot 2

Figure 14 *The southern entrance to Lot 2.*

Lot 2, shown in Figure 14, has 89 spaces which includes 4 handicapped spaces. As seen in Figure 15, it is situated on Prince Street between 38th and 39th Avenue and has two access points. One access point is located on the north side of the lot on 38th Avenue, and the other on the south side of the lot on 39th Avenue.

This facility does not provide park-and-ride service and its hours are from 8 a.m. to 10 p.m. including Sunday. The current rates are $0.25 per 10 minutes with a 3 hour limit.

Flushing Lot 2 is more simple in its design than Lot 1. This lot only has two access points as opposed to six in Lot 1.

38th Avenue is a one-way street. Immediately before the entrance to Lot 2 lies Emergency Medical Services Battalion 52. 38th Avenue has an eastbound flow of traffic. It has one travel lane and two parking lanes. Driving down 38th Avenue, drivers see the entry to the parking lot on their right hand side. The access point is unmanned.

Figure 15 *An aerial view of Lot 2. The arrows indicate the access points to the lot.*

39th Avenue is a one-way street with a westbound flow of traffic. It has one travel lane and two parking lanes. Driving down 39th Avenue drivers encounter Lot 2 on their right hand side. The access point is unmanned.

Flushing Municipal Lot 3

Figure 16 *Lot 3 from the LIRR Flushing station.*

Lot 3 has 157 parking spaces and is situated adjacent to the Long Island Rail Road Station. The parking lot lies between College Point Boulevard to the west and Main Street to the east. The lot contains two access points, both on 41st Avenue. This parking facility provides park-and-ride service and NYC Parking Cards and permits are available to accommodate shoppers and commuters using the LIRR.

Flushing Lot 3 is convenient for LIRR users, as it is located around the corner from the Flushing station on the Port Washington line.

The current rate for Lot 3 between the hours of 8 a.m. to 10 p.m. is $0.25 per 15 minutes, including Sundays. There are 61 spaces with a four-hour limit, and 96 spaces with a 12-hour limit.

The only two access points for this municipal parking lot lie on 41st Avenue, and both are unmanned. 41st Avenue is a one-way street. It has a westbound flow of traffic. It includes one travel lane and two parking lanes. Driving down 41st Avenue drivers see the parking lot on their right hand side.

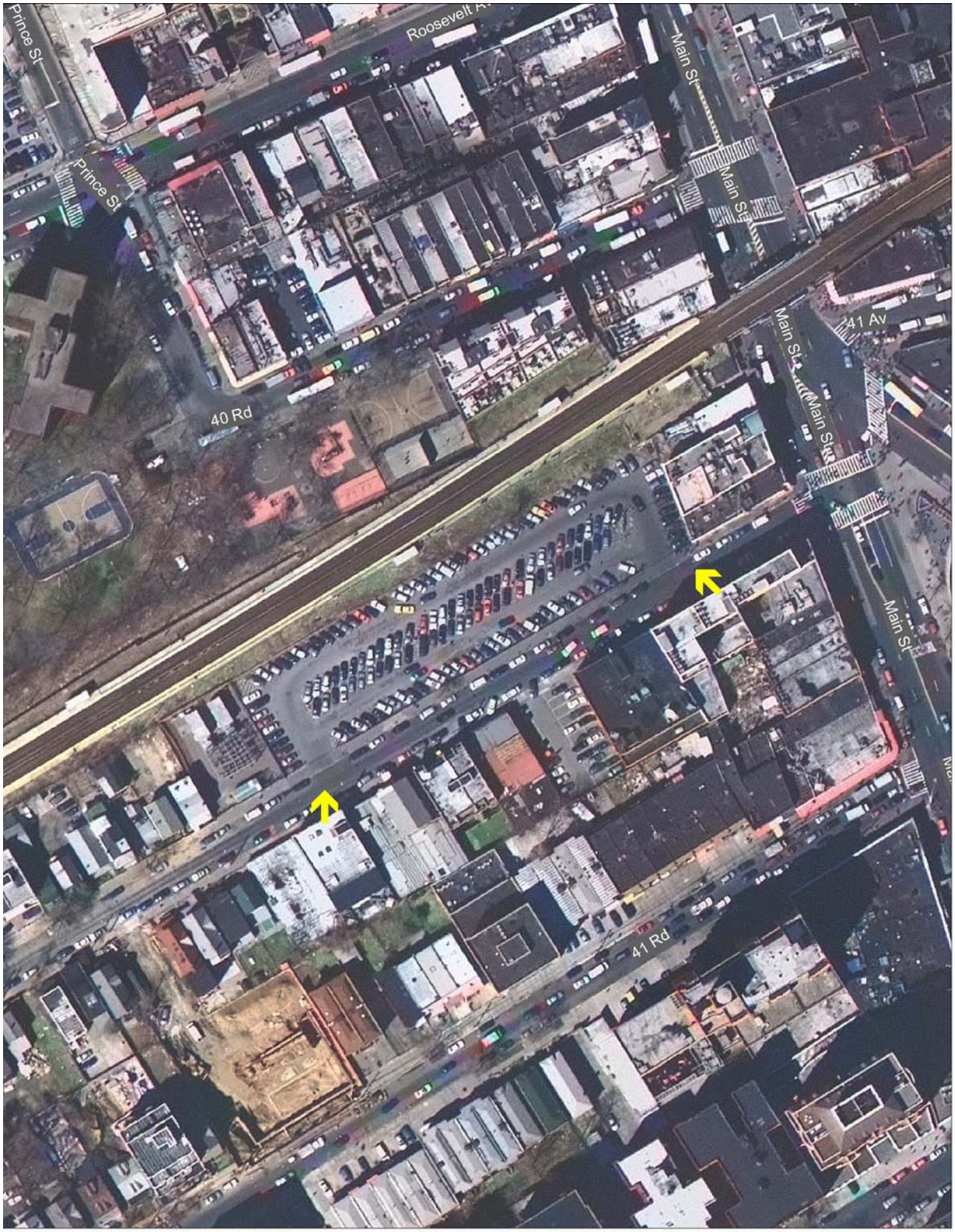

Figure 17 *An aerial view of Lot 3. The arrows indicate the access points to the lot.*

The first access point is marked as the entrance and the second as the exit. However, seeing as both are unmanned, it is possible for drivers to use both access points for both exiting and entering the lot.

Flushing Municipal Lot 4

Figure 18 *Lot 4 located under the Northern Boulevard overpass.*

Lot 4 has 93 parking spaces and is located under the Northern Boulevard overpass between Collins Place and College Point Boulevard. The lot has two access points, on the north and south of the Northern Boulevard service roads.

Lot 4 is a park-and-ride facility and its hours are from 8 a.m. to 10 p.m., including Sundays. The current rate is $0.25 per 30 minutes. The lot contains 53 spaces for 12-hour parking, and 40 spaces are for permits, which cost $120 per quarter year.

Because Flushing Lot 4 is situated under the Northern Boulevard overpass, it is convenient for drivers who do not want to drive through side streets. They can park at this facility, walk down Main Street and arrive at the 7 subway station.

Collins Place is to the east and College Point Boulevard to the west of the overpass, under which Lot 4 is located. The only two access points to Lot 4 lie on the north and south Northern

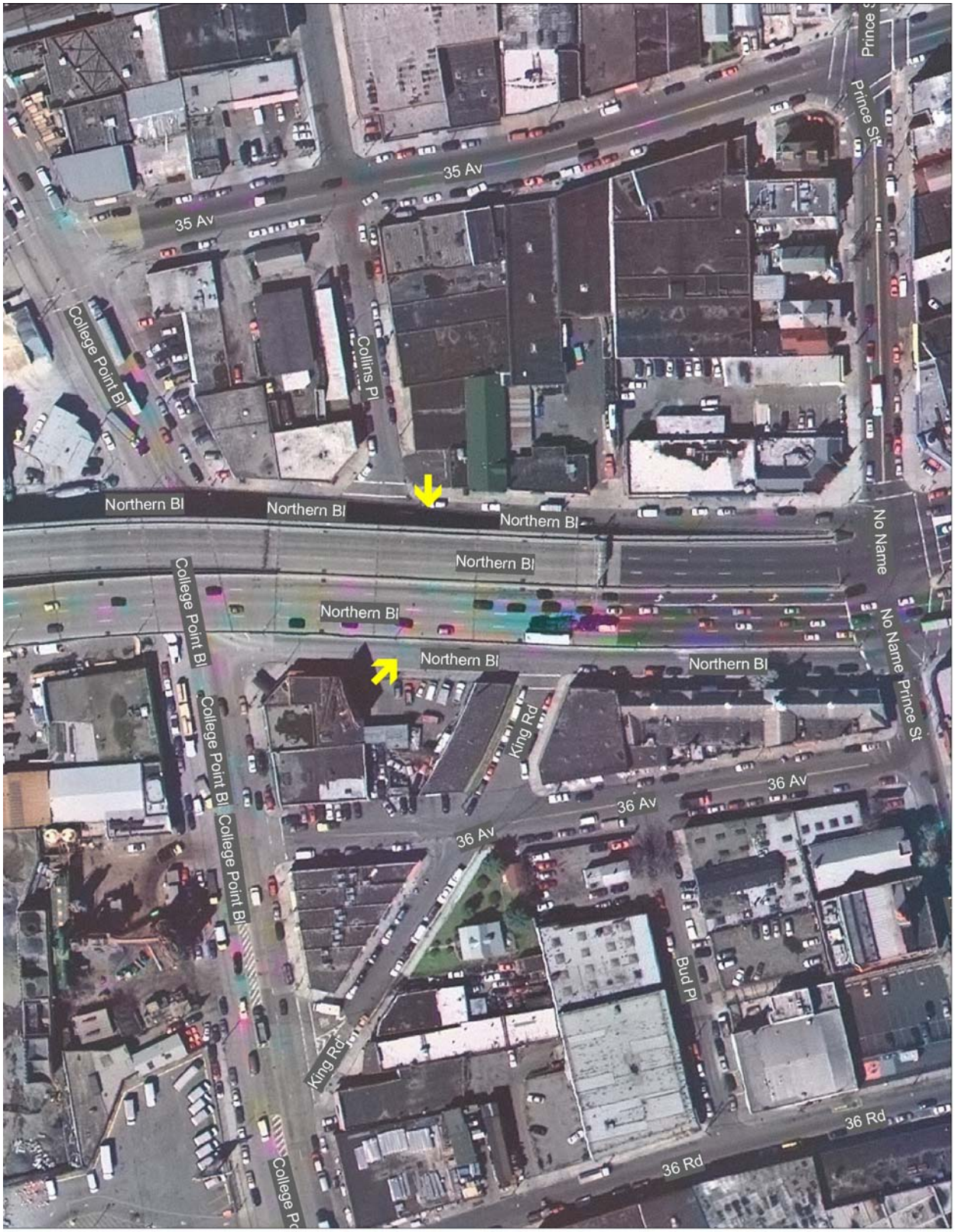

Figure 19 *An aerial view of Lot 4. The arrows indicate the access points to the lot.*

Boulevard service roads, and both are unmanned. The north service road is a one-way street having a westbound flow of traffic. The south service road is also a one-way street that has an eastbound flow of traffic. Each of the service roads have one travel lane and one parking lane. Driving on the northern service road, drivers encounter the lot on their left hand side. Driving on the south service road, drivers encounter the lot on their left hand side.

Both access points are marked as the entrance and exit, and both are unmanned.

Proposed Sign Locations

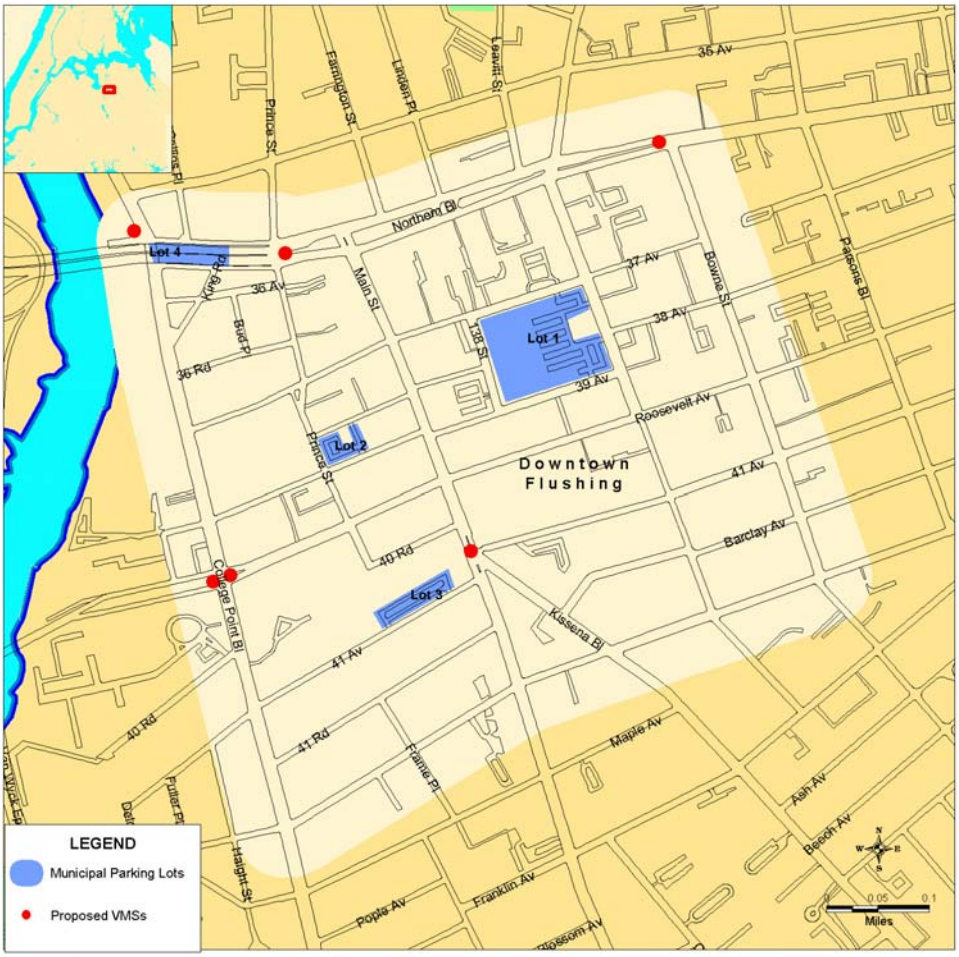

Figure 20 *Preliminary recommendations for VMS locations.*

To provide real-time parking information to drivers, electronic information signs should be deployed at key gateways to Downtown Flushing. These gateways include Northern Boulevard, College Point Boulevard, Roosevelt Avenue, Parsons Boulevard, Kissena Boulevard, and Main Street. Figure 20 shows six preliminary locations where DCP proposes the installation of VMSs for the Downtown Flushing PGS. The locations proposed for the PGS are based on available space, sidewalk congestion (by people and objects), sign congestion, and traffic volumes.

Traffic volume data included a 1997 Environmental Impact Statement for the Downtown Flushing rezoning. This volume data is included in Appendix C. Another primary consideration is for PGS locations is that drivers have time to make decisions about which parking facilities to drive toward based on availability.

Figure 20 shows the preliminary recommended locations for sign installation, pending further research. Further research may include traffic counts, and analysis of the one-way street treatments proposed in the RFP for Main, Prince, and Union Streets. As soon as this additional research is complete, DCP will prepare a technical memorandum for NYCDOT with final recommendations for VMSs.

Preliminary locations recommended by NYCDCP:

- Northern Boulevard and College Point Boulevard
- Northern Boulevard and Prince Street
- Northern Boulevard and Bowne Street
- College Point Boulevard and Roosevelt Avenue (2 signs)
- Main Street and Kissena Boulevard

Locations within the Downtown Flushing PGS study area for further review:

- Northern Boulevard and Main Street
- Northern Boulevard and Union Street
- College Point Boulevard and Sanford Avenue
- Roosevelt Avenue and Main Street
- Sanford Avenue and Main Street
- Sanford Avenue and Kissena Boulevard
- Sanford Avenue and Union Street

Locations outside the Downtown Flushing PGS study area for further review:

- College Point Boulevard and 32nd Avenue
- College Point Boulevard and Blossom Avenue
- Sanford Avenue and Parsons Boulevard
- Northern Boulevard and Parsons Boulevard

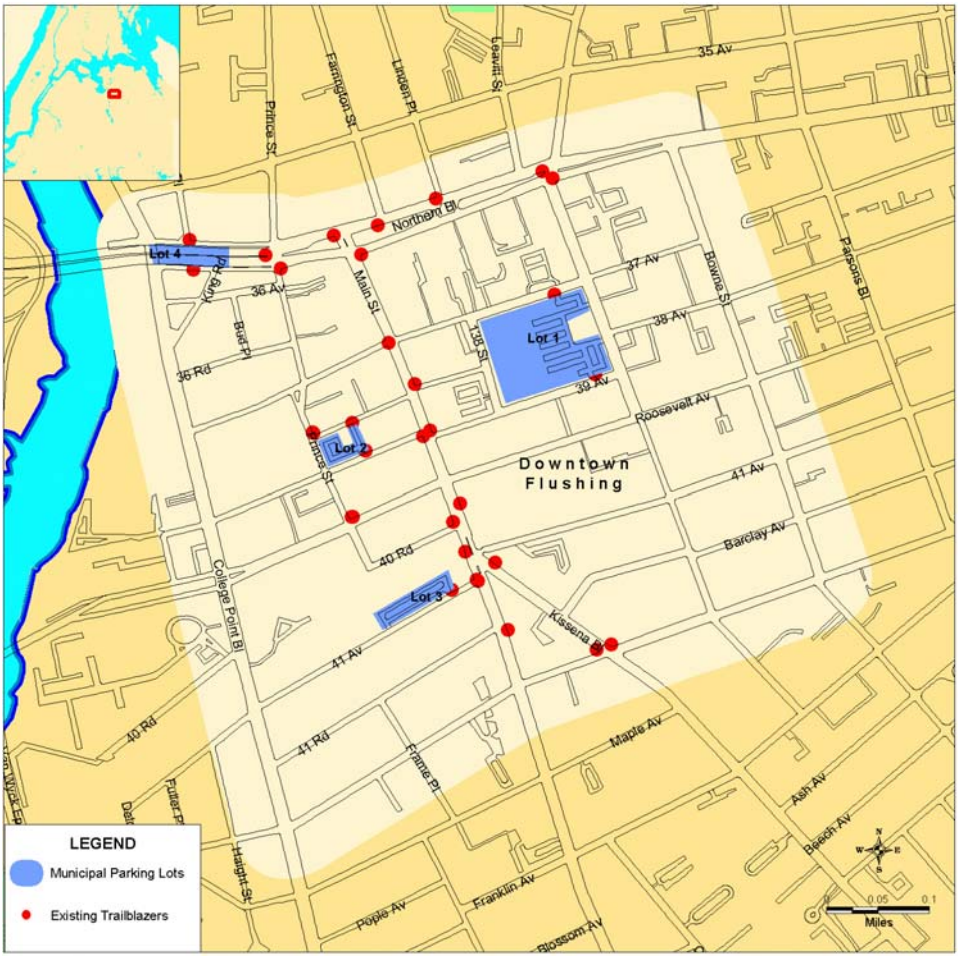

Figure 21 *Locations of existing trailblazers to municipal facilities.*

As for the static signs, NYCDOT currently provides approximately thirty trailblazers to the municipal facilities in Downtown Flushing. The location of these signs is shown in Figure 21. For the proposed PGS in Downtown Flushing, the location of static signs will be adjusted if necessary to guide drivers from a VMS to a parking facility within the PGS.

Proposed Sign Design Elements

After considering various PGS sign designs from around the world, and the various VMSs that exist within New York City, NYCDCP recommends a sign that uses elements that the VMS for JFK's parking facilities utilizes. The sign is small enough to fit on the sidewalks of the Downtown Flushing study area, requires a small footprint, and is a self contained unit (does not require additional electrical boxes). It is also readable from a distance of 200 feet.

Figure 22 shows how the existing JFK sign design could be modified for use in the Flushing PGS. This design assumes that drivers can follow trailblazers to the municipal lots 1, 2, 3, 4, and to the Shea Stadium park-and-ride facility, after following directional arrows on the VMS.

These signs used at JFK are 2'8" wide, by 1'8" deep, and 9'6" tall. Each individual number in the electronic display is two inches wide by three inches tall.

The sign should contain all the elements that the JFK sign has, and directional arrows. That is, the following elements should be included:

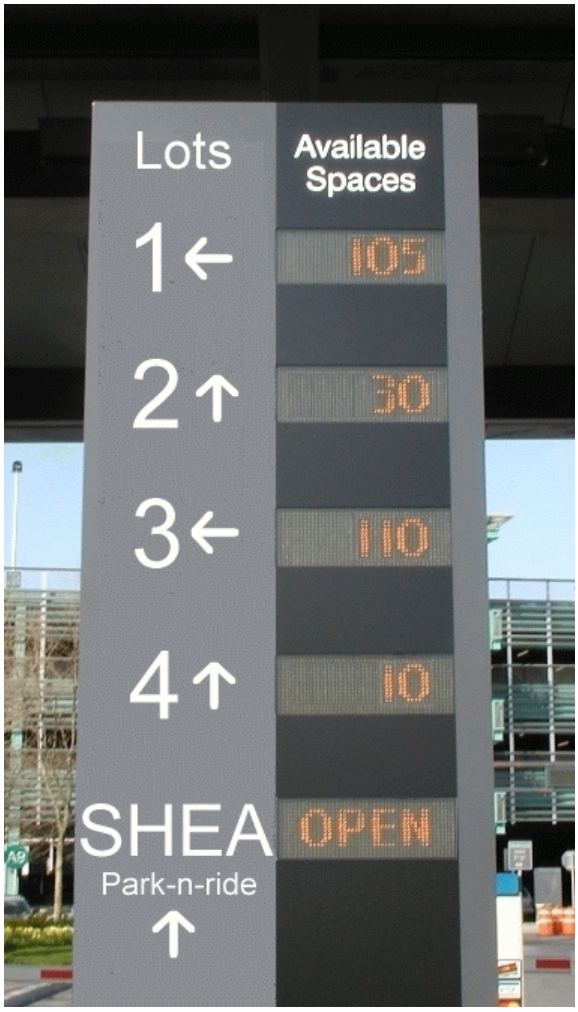

Figure 22 *JFK Airport's VMS sign modified for Downtown Flushing.*

- names of lots should be clear and readable
- directional arrows to the facilities
- enough electronic space to display at the least the number of available spaces, or the condition of the facility: open, closed, few, or full; these will be displayed automatically
- small footprint
- must meet ITS standards.

Final decisions regarding procurement of VMSs for Downtown Flushing, including the vendor and sign design, will be made by NYCDOT. This determination will be made after the Shea Stadium PGS is operational.

PGS Implementation

PGS Installation and Fine Tuning

Installation of the Downtown Flushing PGS will involve expanding the communications infrastructure used for the Shea Stadium PGS. The Flushing PGS should therefore be installed in such a way that would not interrupt the functions of the Shea Stadium PGS. It is likely that some of the same vendors involved in the operation and installation of the Shea Stadium PGS will be used for the Flushing PGS.

The Downtown Flushing PGS should be fully operational at the end of installation. Installation may involve modifying the entry and exit points of the municipal lots within the PGS. It is inevitable that the PGS will require fine tuning as experience shows that no PGS begins operations fully synchronized. The adjustments and fine tuning are likely to involve functions related to vehicular detection. Although changes in physical layout of access points will strive to prevent problems from occurring, changes to access points may introduce a degree of instability. Three to six months is an adequate period of time for final adjustments of the PGS. It is equally important that the system should be tested and able to operate under extreme weather conditions such as, but not limited to, snow, freeze/thaw, and extreme heat.

Implementation of a PGS in Downtown Flushing could result in temporary closure of, or restricted availability at, one or more of the affected parking facilities. In the case of Municpal Lot 1, the complete redevelopment of the site that is expected would cause temporary closure of the site with or without the PGS, and the PGS components would be installed during site redevelopment. For other, smaller parking facilities in Downtown Flushing that may be included in the PGS, NYCDOT and NYCDCP will plan the PGS implementation to ensure that there is little or no overall decrease in parking availability within the Downtown Flushing area during the implementation period.

PGS Operation, Maintenance and Evaluation

After fine tuning, the system will start operating normally and the evaluation period will begin. The vendor will present written documentation and training on the operation and maintenance of the PGS to involved staff. Documentation should include guidelines and schedule for long-term and short-term maintenance of the PGS. A “User Guide” should be made available for all participants in the project regarding the system hardware and software specifications, functions, etc. The selected vendor should have representative(s) of his/her company based in the USA and preferably near NYC. During the period of the test, if there is a malfunction in the PGS operation, the team of companies/associates representing the selected PGS vendor(s) should be able to re-establish normal PGS operation within twelve hours.

Evaluation of the pilot PGS will begin at the end of the fine tuning stage. The evaluation will use different platforms and will involve travelers, facility operators, and the other stakeholders in the study area. These platforms could include site interviews, mail back surveys, and PGS

diagnostics and reporting. The goal of the PGS evaluation will be primarily to establish an appropriate evaluation methodology and evaluate whether the project meets its goals and objectives. This portion of the study will also make recommendations to improve design, implementation, operation and maintenance guidelines for the ongoing as well as future PGSs; it will also make recommendations on customizing and integrating PGSs with other ITS operations. NYCDCP will conduct the evaluation and include the results in the final project document.

Following this evaluation, NYCDCP, NYCDOT and other project stakeholders will determine whether the Flushing PGS should be expanded to include additional parking facilities in Downtown Flushing.

Preliminary Cost Estimate

The project would cost approximately $1,025,000 to implement. The cost estimate assumes that six VMSs would be installed in the Downtown Flushing study area, and that vehicle counters are installed at all four municipal lots.

Since the implementation of a Downtown Flushing PGS is dependent upon and must be technically compatible with the PGS at Shea Stadium, the cost estimate for the Flushing project will be adjusted as soon as more information about the Shea Stadium PGS becomes available. Some software costs may be shared due to system interoperability. Additional adjustments include higher or lower costs for the six VMSs, or if costs are appreciably higher, a reduction in the number of signs.

Estimated Cost for a Parking Guidance System in Downtown Flushing

Cost Component	Description of the Device	Number of Units	Cost per Unit	Estimated Cost
Planning & Design	-	-	-	$100,000
			Subtotal	**$100,000**
Equipment (Furnish & Installed)	Loop Detector & Entrance Gate Counter	12	$5,000	$60,000
	Computer Work Station	1	$2,000	$2,000
	Electronic Variable Message Signs	6	$25,000	$150,000
	Installation of Electronic VMS	6	$12,500	$75,000
	CCTV	5	$27,000	$135,000
	TMC Terminations	-	-	$50,000
	System Software Development	-	-	$100,000
			Subtotal	**$572,000**
Communication	Conduit & Fiber Optic (linear feet)	2,500	$20	$50,000
	Conduit & Fiber Optic (per unit)	6	$20,000	$120,000
	T-1 Line	2	$4,000	$8,000
	Modem, etc	-	-	$25,000
			Subtotal	**$203,000**
Operation & Maintenance	Training, Documentation, Staffing, etc.	-	-	$100,000
			Subtotal	**$100,000**
Miscellaneous	-	-	-	$50,000
			Subtotal	**$50,000**
Grand Total				**$1,025,000**

Summary of PGS Specifications and Next Steps

This section summarizes project specifications for the PGS to be installed in the Downtown Flushing study area and describes the next steps towards project implementation. Since the Downtown Flushing PGS must have communication technologies that are compatible with the Shea Stadium PGS being developed by NYCDOT, when a final determination is made by NYCDOT as to what type of VMSs and which communication technologies will be used for Shea Stadium, appropriate changes will be made to Downtown Flushing PGS specifications.

PGS Specifications

In advance of the NYCDOT implementation of the Shea Stadium PGS, NYCDCP recommends the following specifications for the Downtown Flushing PGS:

- The PGS should be developed after and share an operational network with NYCDOT's Shea Stadium PGS;
- The PGS should include VMSs that can be installed at locations within Downtown Flushing, and are readable from a minimum distance of 200 feet;
- The PGS should have a life expectancy of 10 years, at minimum;
- Vehicle detectors should maintain a directional counting accuracy of not less than 90%, on average;
- The PGS should be compatible with existing NYC government technology protocols;
- The PGS should be compatible with the National ITS Architecture and the NYC Sub-Regional ITS Architecture;
- The PGS should have the ability to archive parking availability data;
- The PGS should have the ability to transmit real-time parking availability information to a web server for internet dissemination;
- The PGS should be expandable to include additional parking facilities;
- The PGS's real-time differential should be less than one minute;
- The fine tuning of the PGS, after installation, should be completed within six months;
- The vendor should have qualified representatives in the US and provide technical staff located in the region;
- The PGS should be guaranteed against all types of failure; and
- The vendor should be prepared to replace, repair, or remove its respective PGS in the event of major problems.

Next Steps

The proposed next steps for the project are as follows:

1. Release of current document to Technical Advisory Committee (TAC) for comments and feedback (the TAC is shown in Appendix B).
2. Conduct further research to recommend VMS sign locations to NYCDOT.

3. Adjust project scope, specifications and cost estimates for Downtown Flushing PGS based on Shea Stadium PGS procurements and implementation.
4. Finalize PGS sign design and locations in Downtown Flushing based on Shea Stadium PGS, revised cost estimate, and NYCDOT comments.
5. Modify municipal lots within the PGS for counter installation.
6. Procure and install Downtown Flushing PGS components.
7. System integration between Downtown Flushing PGS and Shea Stadium PGS.
8. Testing and Fine Tuning of Downtown Flushing PGS.
9. Development of web site interface for real-time parking data from Downtown Flushing PGS.
10. Evaluation of Downtown Flushing PGS by NYCDCP.
11. Final Project Document issued by NYCDCP.

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Appendix A - Privately-Owned Parking Facilities

Flushing Center Inc.

This privately-owned parking garage contains 178 parking spaces and is immediately across the street from Municipal Lot #2. Its access point is located between Prince and Main Streets on 39th Avenue.

39th Avenue is a one-way street with one travel lane and two parking lanes. It has a westbound flow of traffic. The garage has clearly marked entry and egress signs. The garage's access point is manned, and has small speed bumps.

Allright Parking Management Inc.

This privately-owned garage has 250 parking spaces and is located on Main Street, between 41st and Roosevelt Avenues. Its access point is located immediately across from the end of 40th Road. There is a traffic light at the access point of this garage. Therefore, cars exiting the garage may be stopped for a couple of seconds as they wait for the light to turn green. The access point is manned and has small speed bumps.

Main Street is a two-way street. Its flow of traffic is north south. There is one travel lane in each direction and one parking lane in each direction. 40th Road leads directly into the access point. It is a one-way street with one travel and two parking lanes. It has an eastbound flow of traffic. Driving on 40th Road, people encounter the access point immediately in front of them. Driving north on Main Street, people encounter the access point on their right hand side. Driving south, on the left hand side.

724 Management Corporation

This privately-owned parking lot has 197 parking spaces and is located on 41st Avenue, between Main and Union Streets. The lot has clear markings for entry and exit. It also has stop bars. Its access point is manned.

41st Avenue is a one-way street. It has an eastbound flow of traffic. It has one travel lane and two parking lanes. Driving down 41st Avenue, people encounter the access point on their right hand side.

Central Parking System of New York Inc.

This privately-owned garage has 230 parking spaces and is located on Union Street between Barclay and Sanford Avenues. It has two access points. One access point is located on Union Street, and the other on Sanford Avenue. The access point on Sanford Avenue has limited hours of operation. Both access points are manned.

The access point on Union Street is located between Barclay and Sanford Avenues. Union Street is a two-way street with a travel lane and a parking lane in each direction. It has a north south flow of traffic. Driving north on Union Street, one encounters the access point on his or her left hand side. Driving south, the access point is encountered on one's right hand side.

The access point on Sanford Avenue is located between Union Street and Kissena Boulevard. Sanford Avenue is a two-way street. It has an east-west flow of traffic. It consists of two travel lanes in each direction and one parking lane in each direction. Driving east on Sanford Avenue, the access point is located on one's left hand side. Driving west, it is on one's right hand side.

Allright Parking Management Inc.

This privately-owned garage has 808 parking spaces is located on Sanford Avenue between Union Street and Kissena Boulevard. It is located immediately next to the other Edison Park Fast. It has two access points. One access point is immediately to the west of the other garage's Sanford Avenue access point. The other access point is located on Barclay Avenue between Kissena Boulevard and Union Street.

Sanford Avenue is a two-way street with an east-west flow of traffic. It has two travel lanes and one parking lane in each direction. Driving east on Sanford Avenue, the access point is to one's left hand side; driving west, it is to their right hand side. The access point is manned.

Sanford Avenue Realty Corp.

This privately-owned lot has 63 parking spaces and is located on Sanford Avenue between Main Street and College Point Boulevard. It has one access point which is manned.

Sanford Avenue is a one-way street. It has a westbound flow of traffic. The street has one travel lane and two parking lanes. Driving on Sanford Avenue, one encounters the access point on his or her left hand side.

L. J. Clens Corporation

This privately owned garage has 84 parking spaces and is located on 41st Road between College Point Boulevard and Main Street. It has one access point that is manned.

41st Road is a one-way street. It has an eastbound flow of traffic. The street has one travel lane and two parking lanes. Driving on 41st Road, one encounters the access point on one's right hand side.

APPENDIX B - Technical Advisory Committee

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Leo W. O'Brien Federal Building, 7th floor
Clinton Avenue and North Pearl Street, 7th Floor
Albany, NY 12207
(518) 431-4125

Appendix C - Volume Data

1997 Existing Conditions 8:00-9:00 AM Peak Hour Traffic Volumes							
Northern Boulevard				College Point Boulevard			
	In	Out	Total		In	Out	Total
East	1719	1281	3000	North	719	520	1239
West	2229	2610	4839	South	832	734	1566
Total	3948	3891	7839	Total	1551	1254	2805
37th Avenue				Main Street			
	In	Out	Total		In	Out	Total
East		297	297	North	582	428	1010
West		113	113	South	689	306	995
Total		410	410	Total	1271	734	2005
Roosevelt Avenue				Kissena Boulevard			
	In	Out	Total		In	Out	Total
East	530	377	907	North	449	485	934
West	428	265	693	South	220	281	501
Total	958	642	1600	Total	669	766	1435
Sanford Avenue				Union Street			
	In	Out	Total		In	Out	Total
East	225	296	521	North	445	664	1109
West	445	353	798	South	393	378	771
Total	670	649	1319	Total	838	1042	1880

1997 Existing Conditions 1:00-2:00 Midday Peak Hour Traffic Volumes							
Northern Boulevard				College Point Boulevard			
	In	Out	Total		In	Out	Total
East	1790	1199	2989	North	749	673	1422
West	1316	1509	2825	South	683	1005	1688
Total	3106	2708	5814	Total	1432	1678	3110
37th Avenue				Main Street			
	In	Out	Total		In	Out	Total
East		383	383	North	520	433	953
West		143	143	South	689	337	1026
Total		526	526	Total	1209	770	1979
Roosevelt Avenue				Kissena Boulevard			
	In	Out	Total		In	Out	Total
East	637	395	1032	North	454	373	827
West	347	219	566	South	199	233	432
Total	984	614	1598	Total	653	606	1259
Sanford Avenue				Union Street			
	In	Out	Total		In	Out	Total
East	234	315	549	North	316	730	1046
West	270	265	535	South	428	323	751
Total	504	580	1084	Total	744	1053	1797

1997 Existing Conditions 5:00-6:00 PM Peak Hour Traffic Volumes							
Northern Boulevard				College Point Boulevard			
	In	Out	Total		In	Out	Total
East	2520	1938	4458	North	816	699	1515
West	1250	1937	3187	South	689	1255	1944
Total	3770	3875	7645	Total	1505	1954	3459
37th Avenue				Main Street			
	In	Out	Total		In	Out	Total
East		332	332	North	699	444	1143
West		209	209	South	760	326	1086
Total		541	541	Total	1459	770	2229
Roosevelt Avenue				Kissena Boulevard			
	In	Out	Total		In	Out	Total
East	836	438	1274	North	449	326	775
West	261	225	486	South	271	403	674
Total	1097	663	1760	Total	720	729	1449
Sanford Avenue				Union Street			
	In	Out	Total		In	Out	Total
East	322	408	730	North	249	572	821
West	383	377	760	South	546	438	984
Total	705	785	1490	Total	795	1010	1805

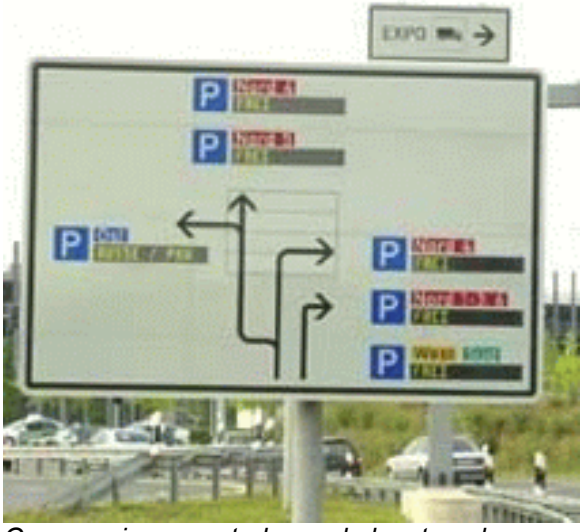
1997 Existing Conditions 1:00-2:00 PM Sat Peak Hour Traffic Volumes							
Northern Boulevard				College Point Boulevard			
	In	Out	Total		In	Out	Total
East	2439	1546	3985	North	1117	821	1938
West	1621	2060	3681	South	770	1270	2040
Total	4060	3606	7666	Total	1887	2091	3978
37th Avenue				Main Street			
	In	Out	Total		In	Out	Total
East		699	699	North	771	576	1347
West		286	286	South	796	428	1224
Total		985	985	Total	1567	1004	2571
Roosevelt Avenue				Kissena Boulevard			
	In	Out	Total		In	Out	Total
East	654	373	1027	North	500	337	837
West	460	276	736	South	265	285	550
Total	1114	649	1763	Total	765	622	1387
Sanford Avenue				Union Street			
	In	Out	Total		In	Out	Total
East	326	454	780	North	119	648	767
West	399	378	777	South	536	387	923
Total	725	832	1557	Total	655	1035	1690

Appendix D - Sample Parking Guidance Signs from Around the World

Cantilever PGS sign in Japan displays map of area, and available spaces.

PGS sign in England has messages instead of numbers. Also uses different colors for open and closed lots.

Wall mounted sign just outside of parking facility indicates the number of spaces.



German sign mounted on pole has travel directions to the parking facilities.

Pole mounted sign in Finland indicates whether spaces are available by crossing out an amber "P" with a red diagonal line.

Mechanical VMS sign in England.

Sign mounted on two poles in England.

German sign includes backlit static portion.