



**Accessible Pedestrian Signals**  
**Program Status Report**  
November 2014

## **Program Overview**

The New York City Department of Transportation (NYC DOT) installs Accessible Pedestrian Signals (APSs) to assist pedestrians who are blind or have low vision in crossing the street. These devices provide information in non-visual formats, such as audible tones, speech messages, and vibrating surfaces, to alert vision-impaired pedestrians when the “walk” phase is available at a given intersection.

As of November 1, 2014, there are APS units installed at 99 intersections citywide, 28 of which were installed over the past year. A list of these locations is included in this report and is available on NYC DOT’s website at [www.nyc.gov/dot](http://www.nyc.gov/dot).

As required by NYC Administrative Code Section 19-188 of 2012, NYC DOT will install APS units at each corner of 25 additional intersections each year. The agency works closely with the Mayor’s Office for People with Disabilities (MOPD) and the visually impaired community, such as the group Pedestrians for Accessible and Safe Streets (PASS), to identify intersections which present a crossing difficulty for persons with visual impairments. NYC DOT is also guided by the Americans with Disabilities Act Accessibility Guidelines (ADAAG) to consider APS units for new traffic signal installations and alterations, and considers locations that are recommended by constituents and elected officials.

NYC DOT establishes a ranked priority list of intersections for the installation of APSs based on established criteria, including but not limited to off-peak traffic presence, current traffic-signal patterns and the complexity of the intersection’s geometry, including crossing distance. This criteria is set forth by the National Cooperative Highway Research Program (NCHRP) and the most recent version of the federal Manual on Uniform Traffic Control Devices (MUTCD). Final scores are based on the individual crosswalk and intersection scores for each location, and ultimately determine priority for installation. This report includes the list of the fifty top-ranked intersections as of November 1, 2014.

## **Cost and Funding Sources**

The cost per intersection averages approximately **\$38,764**. For the 28 intersections where APS were installed over the past year, the total cost was \$1,085,396.

The baseline estimated cost to furnish and install an APS unit on an existing pole is \$985. A typical quadrant intersection would require eight units, meaning that the estimated cost per intersection is at least \$7,880. In many instances, an intersection may require additional work that increases the cost of the installation. For example, most intersections do not have pedestrian signal poles at the location required for APS installation (i.e., adjacent to a pedestrian ramp) requiring the construction of new poles at additional cost. Other factors, such as utilities located underneath the intersection, may add to the total cost of installation. Overall, the costs for each intersection varies depending on the number of additional poles needed, geometry and complexity of the intersection.

Funding for the installation of APS devices comes from NYC DOT's annual signal construction contract, which is funded by the Consolidated Local Street and Highway Improvement Program (CHIPS). CHIPS provides New York State funds to municipalities to support the construction and repair of highways, bridges, highway-railroad crossings, and other facilities that are not on the state highway system. Funding allocations to municipalities are calculated annually by the New York State Department of Transportation (NYSDOT) according to formulas specified in Section 10-c of the State Highway Law.

### **Recommendations for Improvements and Availability of New Technology**

NYC DOT is continuously researching new technologies and instituting updates to enhance the APS program. The agency in recent years replaced the last remaining older types of APSs, which provided “birdcalls” from overhead speakers mounted on the pedestrian signal to alert visually impaired pedestrians when it is safe to cross. These older devices were louder, emitted a noise with every walk display regardless of pedestrian demand, and used a different bird call for each crossing, which confused the user. In addition, the older devices did not provide crossing information as new types of APS units do.

The new type of APS unit used by NYC DOT was tested and approved for use in New York City in 2011, and features a distinct clicking sound that can be adjusted based on the needs of a specific intersection. They also feature a raised vibrating tactile arrow at the pedestrian pushbutton location, which a user can find by a locator tone. These units are installed in close proximity to each pedestrian crossing ramp so that there is no confusion which APS unit is for which crossing. Upon pushing the button, the arrow will vibrate and there will be a rapid percussive tone or audible message when the “walk” signal is displayed.

NYC DOT is constantly evaluating new technologies for use in the APS program. We are currently finalizing a contract with the University Transportation Research Center (UTRC). This multi-year UTRC contract is to provide NYCDOT ongoing research and development programs pertaining to urban Intelligent Transportation Systems (ITS) deployment. One of the tasks under this contract is to research “**Pedestrians and Cyclists Safety Using ITS Technologies in NYC**”. The purpose of this task is to gather knowledge about all new and innovative technologies and methodologies and determine the most useful countermeasures that could be used in NYC to reduce pedestrian/cyclist injuries, conflicts, crashes and fatalities to meet the goals of the Mayor’s “Vision Zero” Action Plan.

Specific attention will be given to the technologies associated with APS units. Research will be conducted to determine the latest and most innovative technologies currently being implemented nationally and internationally and under what conditions these new technologies are most beneficial for New York City.

The final outcome of this task will be a report providing a method to objectively look at each potential measure and come up with a recommendation to decide under what conditions each

countermeasure should be used. NYC DOT will continue to evaluate the potential uses of new technologies on the market to assist blind and low vision individuals in navigating the city's roadways.

Some recommendations for enhancing NYC DOT's APS program include, but are not limited to:

- Continued evaluation of the structure of the APS program for possible improvements to staffing and funding levels and sources.
- Further research of new technologies to enhance the APS program.
- Continued dialogue with blind and low vision advocacy groups.
- Participation in any future USDOT Vehicle-to-Infrastructure testing opportunities that will offer positioning and computing capabilities to a traveler and the ability to interact with infrastructure, utilizing systems that communicate with roadside equipment using many tools, including dedicated short range communications (DSRC), 3G, 4G, Wi-Fi and Bluetooth.

## Accessible Pedestrian Signals Locations in New York City

As of November 1, 2014

Location	Borough
Avenue of Americas and 23rd Street (Selis Manor)	Manhattan
Park Avenue and East 59th Street (Lighthouse)	
Lexington Avenue and East 59th Street (Lighthouse)	
Third Avenue and East 59th Street (Lighthouse)	
Seventh Avenue and West 23rd Street	
Central Park West and West 65th Street	
Columbus Avenue and West 65th Street	
East 25th Street between Lexington and Third Avenues (Mid-block)	
West 34th Street between Eighth and Ninth Avenues (Mid-block)	
Broadway and West 23rd Street	
Fifth Avenue and East 23rd Street	
Stone and Whitehall Streets	
Lexington Avenue and East 52nd Street	
Seventh Avenue and West 32nd Street	
York Avenue and East 62nd Street	
Eighth Avenue and West 55th Street	
West 57th Street between 6th and 7th Avenues (Mid-block)	
West 57th Street between 8th and 9th Avenues (Mid-block)	
West 23 Street between 5th and 6th Avenues (Mid-block)	
Broadway and Bowling Green	
Gold and Spruce Streets	
Gold and Beekman Streets	
Gold and Fulton Streets	
St. James Place and James Street	

Edgecombe Avenue and West 164th Street	Manhattan
Madison and Jefferson Streets	
Maiden Lane and Front Street	
East End Avenue and East 85th Street	
5th Avenue and 58th Street with Grand Army Plaza	
27 <sup>th</sup> Avenue and 8 <sup>th</sup> Street (Goodwill Industries of NY&NJ)	Queens
Hillside Avenue and 256 <sup>th</sup> Street	
Little Neck Parkway and 86 <sup>th</sup> Avenue	
Queens Boulevard (WB) and Woodhaven Boulevard	
Queens Boulevard (EB) and Woodhaven Boulevard	
Woodhaven Boulevard (NB) and LIE entrance ramp	
Marathon Parkway and 57 <sup>th</sup> Avenue	
Queens Boulevard and 58th Street	
Northern Boulevard and 211th Street	
36th Avenue and 23rd Street	
Francis Lewis Boulevard and 35th Avenue	
Seneca Avenue and Cornelia Street	
Clintonville Street and Locke Avenue	
Merrick Boulevard and 231st Street	
Castleton and Brighton Avenues (SI Center for Independent Living Inc.)	Staten Island
Brielle Avenue and Gansevoort Boulevard (Susan E. Wagner HS)	
Castleton and Bard Avenues	
Forest and Bement Avenues	
Victory Boulevard and Eddy Street	
Howard Avenue and Hillside Avenue	

Kappock Street and Knolls Crescent	Bronx
Bronxwood Avenue and East 220 <sup>th</sup> Street	
Bronxwood Avenue and East 219 <sup>th</sup> Street	
Morris Park Avenue and Albert Einstein College of Medicine (Mid-block)	
Grand Concourse and Fordham Road	
Goulden Avenue and Lehman College High School	
Webster Avenue between East Tremont and East 178th Street	
Valentine Avenue between East Tremont and East 178th Street	
East 163rd Street and Rogers Place	
Mace and Colden Avenues	
White Plains Road and Lydig Avenue	
Pelham Parkway North and Laconia Avenue	
Bedford Avenue between Avenue I and Campus Road (Mid-block)	
Jay Street and Metrotech Roadway (South Leg)	
Adams Street between Fulton and Johnson Streets (Mid-block)	
Atlantic Avenue and Boerum Place	
Adams Street / Boerum Place and Fulton Street	
Jay Street and Metrotech Roadway (North Leg)	
Boerum Place and Livingston Street	
Court and Livingston Streets	
Flatbush Avenue with Fulton Street and Nevins Street	
McDonald and Ditmas Avenues	
Smith and Livingston Streets	
Court and Schermerhorn Streets	
Boerum Place and Schermerhorn Street	
Atlantic Avenue and Nevins Street	
5 <sup>th</sup> Avenue and 89 <sup>th</sup> Street	

Ditmas Avenue and East 5 <sup>th</sup> Street	Brooklyn
Jay Street and Willoughby Street	
Cadman Plaza West and Montague Street	
Livingston and Bond Streets	
Livingston and Hoyt Streets	
Atlantic Avenue and Hoyt Street	
Court Street with Remsen and Joralemon Streets	
Church and McDonald Avenues (New York Industries for the Blind)	
Atlantic Avenue and Smith Street	
Church Avenue and Dahill Road	
14 <sup>th</sup> Avenue and 36 <sup>th</sup> Street (New York Industries for the Blind)	
Flushing Avenue and Skillman Street	
Court Street and Atlantic Avenue	
Jay Street/Smith and Fulton Streets	
Atlantic Avenue and Bond Street	
Boerum Place and State Street	
Schermerhorn and Nevins Streets	
Nostrand Avenue and Erasmus Street	
Court and State Streets	
Livingston and Nevins Streets	
New Utrecht Avenue and 62nd Street	
Pennsylvania Avenue and Freeport Loop (North leg)	
Flatlands Avenue and East 107th Street	

## Fifty top ranked intersections for new accessible pedestrian signals

As of November 1, 2014

Please note that the list of the fifty (50) top ranked intersections for new APS units will fluctuate as new locations are added and evaluated based on the prioritization criteria described above.

Rank	Location	Borough
1	St. Nicholas Place and West 155th Street / Edgecombe Avenue / Harlem River Drive	Manhattan
2	Crosby Avenue and Westchester Avenue / Edison Avenue / Buhre Avenue	Bronx
3	7 <sup>th</sup> Avenue / Broadway and West 45th Street	Manhattan
4	Hoyt Street and Fulton Street	Brooklyn
5	Broadway and West 175th Street	Manhattan
6	Battery Place and Washington Street	Manhattan
7	Carver Loop North and Co-Op City Boulevard	Bronx
8	Bartow Avenue and Co-Op City Boulevard	Bronx
9	4th Avenue and 9th Street	Brooklyn
10	Barclay Street and Washington Street	Manhattan
11	Carver Loop South and Co-Op City Boulevard / Rombouts Avenue	Bronx
12	Boston Road and East 212th Street / Pearsall Avenue	Bronx
13	DeKalb Avenue and Hudson Avenue	Brooklyn
14	Flatbush Avenue and DeKalb Avenue	Brooklyn
15	Pelham Parkway North and Williamsbridge Road	Bronx
16	Bond Street / DeKalb Avenue and Fulton Streets	Brooklyn
17	Beekman Street and William Street	Manhattan
18	St. Nicholas Avenue and West 125th Street	Manhattan
19	Astor Avenue and Colden Avenue	Bronx
20	Dean Street and East New York Avenue / Sackman Street	Brooklyn
21	8th Avenue and West 50th Street	Manhattan
22	8th Avenue and West 51st Street	Manhattan
23	3rd Avenue and East 72nd Street	Manhattan
24	East 52nd Street and Rutland Road / Remsen Avenue	Brooklyn
25	5th Avenue and East 124th Street / West 124th Street	Manhattan
26	Amsterdam Avenue and West 113th Street	Manhattan
27	Amsterdam Avenue and West 114th Street	Manhattan

28	33rd Street and 3rd Avenue	Brooklyn
29	Avenue U and Ocean Avenue	Brooklyn
30	Beekman Street and Nassau Street	Manhattan
31	9th Avenue and West 50th Street	Manhattan
32	Hill Street and Tompkins Avenue	Staten Island
33	Thompson Street and Washington Square South (West 4th Street)	Manhattan
34	4th Avenue and 44th Street	Brooklyn
35	4th Avenue and 45th Street	Brooklyn
36	4th Avenue and 59th Street	Brooklyn
37	Campus Road and Hillel Place	Brooklyn
38	Flatbush Avenue and Willoughby Street	Brooklyn
39	86th Street and Bay 22nd Street	Brooklyn
40	Bailey Avenue and West 234th Street	Bronx
41	Avenue J and Brooklyn Avenue	Brooklyn
42	10th Avenue and West 50th Street	Manhattan
43	9th Avenue and West 51st Street	Manhattan
44	Broad Street and Stone Street	Manhattan
45	Bay 49th Street and Cropsey Avenue	Brooklyn
46	4th Avenue and 39th Street	Brooklyn
47	4th Avenue and 55th Street	Brooklyn
48	10th Avenue and West 51st Street	Manhattan
49	Bay 35th Street / 24th Avenue and Cropsey Avenue	Brooklyn
50	82nd Street and Myrtle Avenue	Queens