

# **ANALYSIS OF PARKING CONDITIONS AROUND YANKEE STADIUM AND ATLANTIC YARDS**



**New York City Department of Transportation  
Division of Traffic and Planning**

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## **INTRODUCTION**

In response to community concerns and inquiries from elected officials, NYCDOT undertook a study in 2011 to better understand the parking conditions around Yankee Stadium and Atlantic Yards, where the Nets arena will open in September 2012, and to inform discussion of curb management strategies to address the impact of game day and event day visitors to these facilities.

Both Yankee Stadium and Atlantic Yards are located in mixed residential/commercial neighborhoods. Yankee Stadium is within a short walk of a major employment center at the Bronx Borough Hall and courthouse area, with significant retail in the area as well. Atlantic Yards and the Barclays Center are located at the confluence of a number of major roadways and are surrounded by civic institutions, big box and neighborhood retail, and the Atlantic Terminal transit station. Hence, both areas attract substantial numbers of workers, shoppers, and other visitors in addition to their residential populations.

Yankee Stadium seats 50,291 fans. It hosts 81 regular season Major League Baseball games and up to 11 playoff games each year. Yankee Stadium is also used for approximately a dozen additional events annually including concerts, football games, college graduations, and boxing. The Barclays Center will seat approximately 18,000. The arena will host at least 41 regular season National Basketball Association basketball games, as well as pre- and post-season events. In addition, the arena will host college basketball games, boxing, concerts, cultural events, and the circus.

Both facilities are well-served by subway, bus, and commuter rail service (Metro-North in the Bronx; Long Island Railroad in Brooklyn). As documented in the environmental impact statement (EIS) prepared for the new Yankee Stadium, which opened for the 2009 season, and for Atlantic Yards in its 2006 EIS, there is ample off-street parking available to visitors. On-street parking is a combination of metered parking with one-hour or two-hour time limits, and non-metered parking that is subject to street cleaning regulations.

This study was undertaken in response to concerns about the impacts of game and event day parking in the residential communities surrounding Yankee Stadium, and more recently, concerns about the potential impacts of the new arena that is being built on the Atlantic Yards site.

A major part of the discussion has been the desirability and feasibility of implementing a residential parking permit (RPP) program. An RPP program, if implemented, would have the objective of preventing event attendees from using on-street parking spaces. In 2011, legislation was introduced in the State Legislature to authorize an RPP program in New York City. That legislation, which is required for the City to implement such a program, has not been passed by either house of the Legislature.

This report presents findings from parking studies conducted in fall 2011 around Yankee Stadium and Atlantic Yards, and discusses the implications for approaches to curb management generally and RPP in particular. The purpose of this report is to provide a comprehensive assessment of parking conditions in these areas as a basis for public discussion and future planning.

## **METHODOLOGY**

In the fall of 2011, NYCDOT undertook a study of current parking capacity and conditions in the neighborhoods surrounding Yankee Stadium and Atlantic Yards. The study included a comprehensive data collection program on parking characteristics and patterns in each area. Data collection took place around Yankee Stadium during, before and after games on August 13 and 23, and on August 17 and 20, 2011 (non-game days). In the Atlantic Yards area, data collection took place on October 1 and 5, 2011. Data was collected on these dates and the early the following morning to capture overnight parking conditions.

For the purposes of data collection, study areas encompassing approximately ½ mile around each of the facilities were identified, taking into account both distance from the facility and natural boundaries. For data collection and reporting purposes, each study area was divided into sub-areas as shown in Figures 1 and 2.

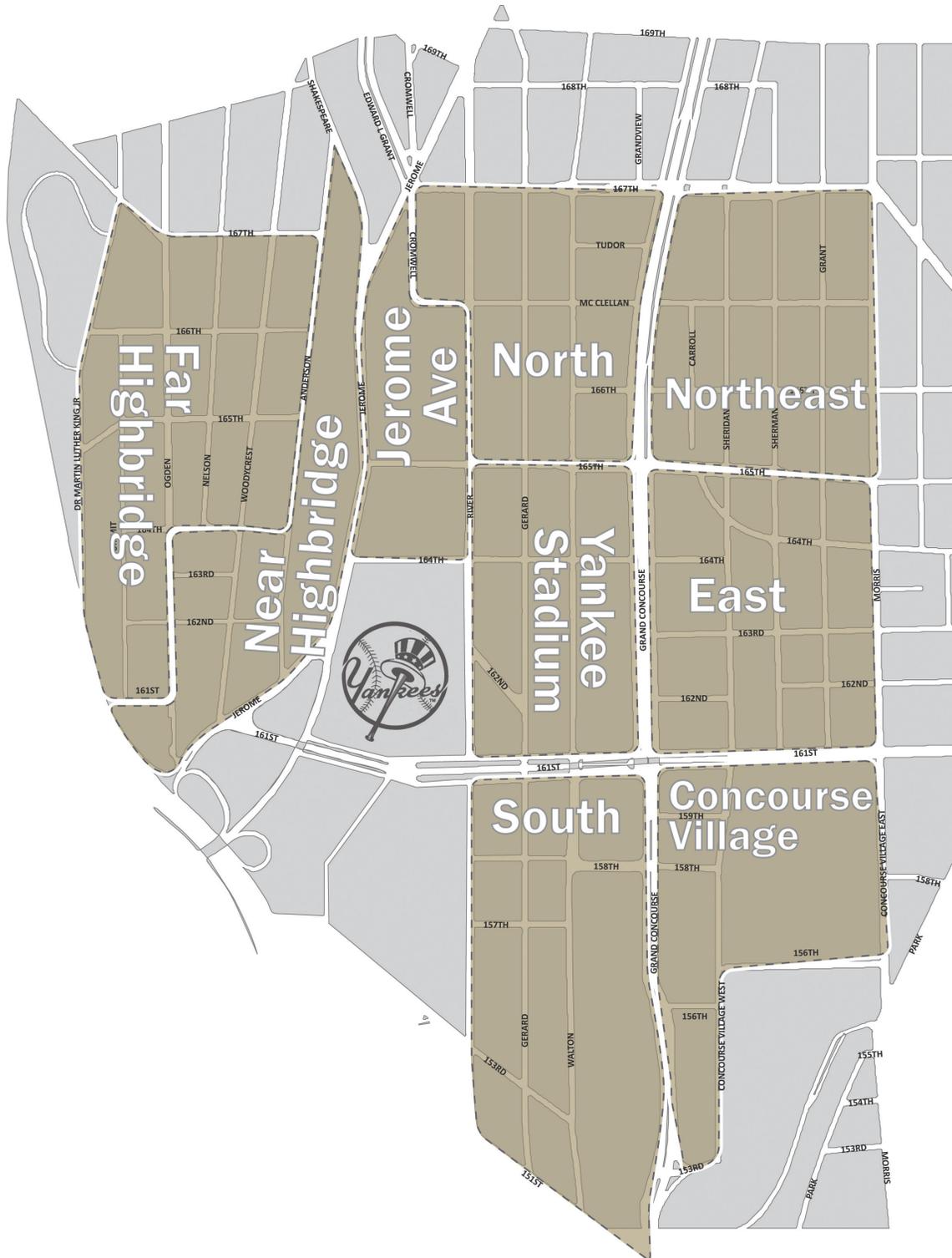


Figure 1 - Yankee Stadium Study Area and Sub-Areas



Figure 2 - Barclays Center (Atlantic Yards) Study Area and Sub-Areas

NYCDOT implemented a data collection plan to capture parking conditions in both study areas. The plan comprised of:

- 1) **Parking capacity inventory** -- NYCDOT conducted site visits to every blockface within the study area to observe existing parking capacity. Capacity was based on the number of cars parked during peak times and linear feet of legal parking on each blockface.
- 2) **Parking occupancy survey** – to determine the supply of on-street parking and levels of on-street parking use. The survey required a recording of license plates on all blockfaces within the study area that had available legal parking, including metered and unmetered spaces. Survey results show occupancy of each sub-area for different times of the day. The license plate data was used to estimate the percentage of “resident” vs. “non-resident” parkers.
- 3) **Intercept survey** (Yankee Stadium only) – to determine the characteristics of game day visitors to Yankee Stadium, an intercept survey of fans was conducted. The survey provided information on game day visitors’ decisions between on-street vs. off-street parking and willingness to walk to the stadium.

Data was collected for the following time periods in order to determine overall occupancy, as well as the changes in occupancy during game times vs. non-game times.

Data collection times (both Game Day (Yankee Stadium) and non-Game Day (both areas))

- Weekday Afternoon at 4 pm
- Weekday Evening at 7 pm (game time)
- Saturday Afternoon at 1 pm (game time)
- Saturday Evening at 5 pm

# RESULTS: YANKEE STADIUM

## *Parking Capacity*

There are approximately 4,900 legal on-street spaces (metered and unmetered) in the Yankee Stadium study area. The capacity for each of sub-area is listed below:

**Table 1 - On-Street Parking Spaces in Yankee Stadium Study Area**

<b>Sub-Area</b>	<b>On-Street Parking spaces</b>
Concourse Village	468
Far Highbridge	772
Near Highbridge	414
Jerome Avenue	140
North	724
Northeast	653
East	747
South	481
Yankee Stadium	497
<b>TOTAL</b>	<b>4,896</b>

## *Parking Occupancy*

The findings from the Yankee Stadium area indicate that overall, occupancy increases by about 10% in the study area during a game day. However, even under game day conditions, the on-street spaces are not filled. As can be seen from Table 2, average occupancy for all time periods on game days is approximately 83%, with only Weekday evenings exceeding 85%.

The sub areas of Jerome, South, and Yankee Stadium experienced significant increases in occupancy during games, as compared to the similar time period on non-game days from all study areas. While occupancy rates during games were below 85% in Jerome, indicating spaces were still available, occupancy rates in South and Yankee Stadium sub-areas were high, particularly on weeknights.

**Table 2 - Yankee Stadium On-Street Parking Occupancies  
Game Day vs. Non-Game Day**

			Non-Game Day		Game Day		Change	
			Occupancy	Vehicles Parked	Occupancy	Vehicles Parked	Occupancy	Vehicles Parked
<b>Concourse Village</b>	Weekday	Afternoon	68%	338	67%	334	-1%	-4
		Evening	55%	276	73%	367	+18%	91
	Saturday	Afternoon	64%	323	61%	317	-3%	-6
		Evening	57%	286	65%	333	+8%	47
<b>Far Highbridge</b>	Weekday	Afternoon	72%	600	72%	628	-0%	28
		Evening	84%	704	93%	790	+9%	86
	Saturday	Afternoon	73%	628	61%	515	-11%	-113
		Evening	78%	678	68%	586	-10%	-92
<b>Near Highbridge</b>	Weekday	Afternoon	76%	319	84%	346	+8%	27
		Evening	89%	368	94%	391	+5%	23
	Saturday	Afternoon	73%	295	82%	334	+8%	39
		Evening	80%	325	92%	381	+12%	56
<b>Jerome Avenue</b>	Weekday	Afternoon	66%	92	78%	109	+12%	17
		Evening	69%	96	84%	117	+15%	21
	Saturday	Afternoon	64%	89	79%	110	+15%	21
		Evening	67%	94	88%	123	+21%	29
<b>North</b>	Weekday	Afternoon	78%	548	84%	605	+6%	57
		Evening	78%	564	89%	659	+11%	95
	Saturday	Afternoon	78%	560	83%	615	+5%	55
		Evening	84%	611	90%	660	+5%	49
<b>Northeast</b>	Weekday	Afternoon	82%	527	84%	542	+3%	15
		Evening	93%	609	95%	628	+2%	19
	Saturday	Afternoon	84%	541	75%	494	-10%	-47
		Evening	85%	554	81%	534	-5%	-20
<b>East</b>	Weekday	Afternoon	70%	516	78%	582	+8%	66
		Evening	76%	514	85%	634	+9%	120
	Saturday	Afternoon	76%	563	68%	497	-9%	-66
		Evening	73%	536	75%	552	+2%	16
<b>South</b>	Weekday	Afternoon	72%	348	88%	429	+16%	81
		Evening	71%	340	97%	474	+27%	134
	Saturday	Afternoon	62%	297	89%	429	+27%	132
		Evening	64%	307	96%	459	+33%	152
<b>Yankee Stadium</b>	Weekday	Afternoon	80%	403	91%	454	+11%	51
		Evening	79%	389	93%	480	+14%	91
	Saturday	Afternoon	68%	335	90%	467	+22%	132
		Evening	76%	373	85%	451	+10%	78
<b>OVERALL STUDY AREA</b>	Weekday	Afternoon	75%	3691	82%	4029	+7%	338
		Evening	79%	3860	93%	4540	+14%	680
	Saturday	Afternoon	74%	3631	77%	3778	+3%	147
		Evening	77%	3764	83%	4079	+6%	315

### **Resident and Non-Resident Percentage**

NYCDOT recorded license plates for vehicles parked on the street in both study areas and worked with New York State Department of Motor Vehicles (DMV) to determine the zip code of residence for each vehicle. For the purpose of this study, residents were defined as any vehicle with a license plate registered with the DMV with an official address in one of the zip codes within the study area.

In order to take into account residents who may live in the study area and compete for parking but register their vehicles outside the study area, DOT conducted an overnight license plate survey. For the Yankee Stadium area, NYCDOT utilized an adjustment factor of 1.8, based on observations in the overnight parking survey showing that 55% of cars parked overnight in the area are registered to a local zip code.

Using the adjusted figures, Table 3 shows that non-residents account for 25% to 45% of all parked cars on non-game days.

**Table 3 - Yankee Stadium - Resident Percentage**

	<b>Weekday</b>		<b>Saturday</b>	
	<i>Afternoon</i>	<i>Evening (game time)</i>	<i>Afternoon (game time)</i>	<i>Evening</i>
<b>Game Day</b>				
Percentage Residents	51%	47%	47%	45%
Percentage Non-Residents	49%	53%	53%	55%
	<i>Afternoon</i>	<i>Evening (game time)</i>	<i>Afternoon (game time)</i>	<i>Evening</i>
<b>Non-Game Day</b>				
Percentage Residents	69%	60%	55%	75%
Percentage Non-Residents	31%	40%	45%	25%
Difference in Non-Residents Game Day vs Non-Game Day	+18%	+13%	+8%	+30%

### **Intercept Survey**

An intercept survey was conducted in the vicinity of Yankee Stadium on the same game days as the parking survey. This survey, administered prior to the game, asked fans entering the stadium if they drove to the game and if so, where they parked, how much they paid, and how long they looked for parking. Data collected from this survey was used to determine the demand for on-street parking for game day visitors, the geographic influence of the stadium on parking, and to help identify factors that may affect visitor parking behavior.

Surveyors were positioned along major entry points to the stadium to capture a wide array of game day visitors. Individuals were stationed far enough from the transit hubs, parking garages and other trip generators, so as not to have bias in the interview process. In total, 1,088 visitors were interviewed.

Findings from the intercept survey include:

- 61% of the spectators surveyed arrived by car.
- 90% of those that arrived by car opted to use off-street parking. Of the remaining 10% who parked on-street, 84% parked within a ten minute walk of the stadium.

## RESULTS: ATLANTIC YARDS

### *Parking Capacity*

There are 9,395 legal on-street spaces (metered and unmetered) in the area around Atlantic Yards. The capacity for each sub-area is listed below:

**Table 4 - On-Street Parking Spaces in Atlantic Yards Study Area**

<b>Sub-Area</b>	<b>On-Street Parking Spaces</b>
Boerum Hill	905
Clinton Hill	1,543
Downtown Brooklyn	93
Fort Greene	1,372
Fulton Street	541
Gowanus	414
Park Slope (East)	1,136
Park Slope (West)	1,312
Prospect Heights	1,720
4 <sup>th</sup> Avenue	151
Atlantic Avenue	102
Flatbush Avenue	106
<b>TOTAL</b>	<b>9,395</b>

### *Parking Occupancy*

Overall, parking occupancies averaged 76%, indicating that there are available parking spaces in all time periods. However, a detailed look at individual sub-areas (neighborhoods) shows a wide range in parking occupancy.

Table 5 illustrates parking occupancies for different time periods in the Atlantic Yards study area.

**Table 5 - Parking Occupancies for Atlantic Yards Study Area**

			Occupancy	Vehicles Parked
<b>4th Ave</b>	Weekday	Afternoon	90%	130
		Evening	88%	129
	Saturday	Afternoon	87%	109
		Evening	80%	105
<b>Atlantic Ave</b>	Weekday	Afternoon	69%	70
		Evening	71%	53
	Saturday	Afternoon	34%	11
		Evening	46%	47
<b>Boerum Hill</b>	Weekday	Afternoon	90%	699
		Evening	78%	648
	Saturday	Afternoon	69%	595
		Evening	65%	541
<b>Clinton Hill</b>	Weekday	Afternoon	87%	1290
		Evening	86%	1345
	Saturday	Afternoon	83%	1286
		Evening	75%	1158
<b>Downtown</b>	Weekday	Afternoon	84%	57
		Evening	60%	50
	Saturday	Afternoon	25%	19
		Evening	67%	61
<b>Flatbush Ave</b>	Weekday	Afternoon	72%	69
		Evening	81%	75
	Saturday	Afternoon	32%	20
		Evening	68%	70
<b>Fort Greene</b>	Weekday	Afternoon	92%	1142
		Evening	89%	1161
	Saturday	Afternoon	76%	960
		Evening	67%	868
<b>Fulton</b>	Weekday	Afternoon	83%	428
		Evening	80%	431
	Saturday	Afternoon	76%	404
		Evening	82%	448
<b>Gowanus</b>	Weekday	Afternoon	92%	358
		Evening	86%	339
	Saturday	Afternoon	87%	364
		Evening	84%	327
<b>Park Slope East</b>	Weekday	Afternoon	79%	878
		Evening	83%	940
	Saturday	Afternoon	73%	778
		Evening	83%	951
<b>Park Slope West</b>	Weekday	Afternoon	84%	1108
		Evening	88%	1154
	Saturday	Afternoon	71%	904
		Evening	85%	1113
<b>Prospect Heights</b>	Weekday	Afternoon	86%	1459
		Evening	78%	1321
	Saturday	Afternoon	79%	1284
		Evening	79%	1357
<b>Overall</b>	Weekday	Afternoon	84%	7688
		Evening	81%	7646
	Saturday	Afternoon	66%	6734
		Evening	73%	7046

## Resident and Non-Resident Percentage

As at Yankee Stadium, NYCDOT recorded license plates for vehicles parked on-street in both study areas to estimate resident and non-resident parkers. An overnight survey was also conducted to take into account residents who may register their vehicles outside their neighborhood. For Atlantic Yards, the adjustment factor was 2.4, based on observations showing that 42% of cars parked overnight in the area are registered to a local zip code.

Using the adjusted figures, Table 6 shows that non-residents account for 7% to 34% of all parked cars, depending on the day of the week and time of day.

**Table 6 - Atlantic Yards- Resident Percentage**

	Wednesday		Saturday	
	Afternoon	Evening	Afternoon	Evening
<b>Non-Game Day</b>				
Percentage Residents	93%	83%	66%	83%
Percentage Non-Residents	7%	17%	34%	17%

## ANALYSIS OF RESULTS

Results from the parking study yield four main findings that directly inform the discussion of curb management and RPP in the neighborhoods surrounding Yankee Stadium and Atlantic Yards:

- 1. Most of the demand for parking is absorbed by off-street garages.** The Yankee Stadium intercept survey found that 90% of fans parked in off-street lots. Given the expectation that the Barclays Center will generate 2,150 driving trips,<sup>1</sup> if Nets fans park on-street at the same rate as Yankee fans, Nets fans would park 215 vehicles on-street during games.
- 2. The on-street impact of fans is primarily felt in the immediate area around the stadium.** An increase in occupancy of on-street parking spaces during Yankee games was seen only in the area immediately south and east of the stadium. This is consistent with the intercept survey finding that those parking on-street were primarily within a 10-minute walk of the stadium.
- 3. Fans parking on-street do not necessarily prevent residents and others from finding on-street spaces.** In the Yankee Stadium results, even though parking space occupancies were higher during Yankee games than on non-game days, there were still spaces available for on-street parkers during the weekend game throughout the study area, and during the weeknight game except in the area immediately around the stadium.
- 4. Most non-residents parking near these two facilities are visiting for reasons unrelated to the stadium.** At Yankee Stadium, on non-game days an estimated 31% to 45% of on-street parkers are non-residents, compared with 49% to 55% on game days. This suggests that most non-residents who park on-street during games are there for work, shopping, personal errands and so forth, and that only 18% are parking to attend the game. In the area around Atlantic Yards, 17% of parking spaces on both weekday evening and Saturday evening, and 34% on a Saturday afternoon, were occupied by non-residents. For the area within a 10-minute walk of the arena, non-residents filled approximately 900 spaces on weekday evenings and 1,900 spaces on Saturday afternoons.<sup>2</sup>

<sup>1</sup> Atlantic Yards Final Environmental Impact Study (FEIS).

<sup>2</sup> Areas within a ten-minute walk include Fourth Avenue, Atlantic Avenue, Boerum Hill, Fort Greene, Park Slope West, and Prospect Heights.

## BARCLAYS CENTER OPENING

With Barclays Center opening in September 2012, a number of steps are being taken to manage the parking and traffic situation around the arena. Forest City Ratner Corporation, the arena developer, recently released its Transportation Demand Management (TDM) plan as required under the FEIS. The TDM plan promotes the use of mass transit to reach the arena, and for those who drive, encourages fans to pre-pay for parking in off-street garages. To further encourage transit usage, the plan also includes additional MTA subway and Long Island Railroad service for fans leaving the game.

These TDM measures will be implemented when the arena opens in September. Continued monitoring of traffic and parking conditions as the arena opens is highly important in order to assess traffic and parking conditions and take appropriate actions to minimize negative neighborhood impacts. Forest City Ratner Corporation will collect extensive traffic, transit and pedestrian data prior to the arena opening and during Nets games and other events. These data will be monitored over the course of the season and reported to the City and released publicly. In addition, NYCDOT will conduct an additional study of parking conditions around the arena to assess how arena events affect on-street parking occupancy and use.

## CONCLUSION

Most fans who drive to games at Yankee Stadium park off-street. Of the 10% of fans who park on-street, most park in an area within a few blocks of the stadium. Throughout most of the area around Yankee Stadium, parking occupancies remain low enough that residents generally have spaces available to them during Yankee games. Both during games and at other times, there are far more non-residents parking on-street for non-game-related activities than for the game itself.

The Barclays Center will have a smaller seating capacity and even better transit accessibility than Yankee Stadium. As in the Bronx, on-street spaces serve many visitors who are in the area to work, shop, visit residents, and conduct personal business. Drivers coming to the area for other reasons are likely to outnumber Barclays Center event-goers who park on-street.

The data collected in this report suggest that a Residential Parking Permit (RPP) Program would be problematic for residents, drivers, and city government. Given the city's population and vehicular density, RPP would be little more than a "hunting license," continuing to allow residents to compete with one another for parking but without guaranteeing availability. While some residents may be willing to pay for RPP under these conditions, many residents are likely to question why they should be required to register their vehicles, obtain permits, and pay at least \$50 a year with no guarantee that their ability to find parking would improve.

In addition, an RPP program would be a complicated administrative undertaking for the City – while the \$50-to-\$100 annual cost could support the printing and issuance of permits, the large enforcement costs would be borne by all taxpayers, whether they qualify for RPP or not.

This is consistent with the experience of other large cities, none of whose RPP programs cover the cost. Finally, RPP will inevitably inconvenience and reduce access for some of the non-residents who drive to the area and contribute to the neighborhood's economic and social vitality. Importantly, such non-resident drivers take up far more on-street parking than Yankee fans on event days near Yankee Stadium, and constitute a significant portion of on-street parkers near Atlantic Yards.

Other cities' RPP programs have only partially addressed these concerns, and in ways that may not work in New York – for instance, through time-consuming visitor pass schemes that require residents to obtain passes from local police precincts, or through complex and overlapping rules about which non-residents are exempt from RPP restrictions and which are not. Taken together, these concerns would be barriers to the effective implementation of RPP anywhere in New York City.

In the near term, there is no legislative authority for the City to implement an RPP program, so it is clear that RPP cannot be part of the parking management strategy when the Barclays Center opens in September 2012. Instead, parking management strategies will focus on the objectives of ensuring safety and limiting quality of life impacts of game day parking in the immediately nearby area, and on steering as many fans as possible into mass transit and non-automobile modes. The primary tools to meet these objectives are curb regulations and game and event day traffic management.