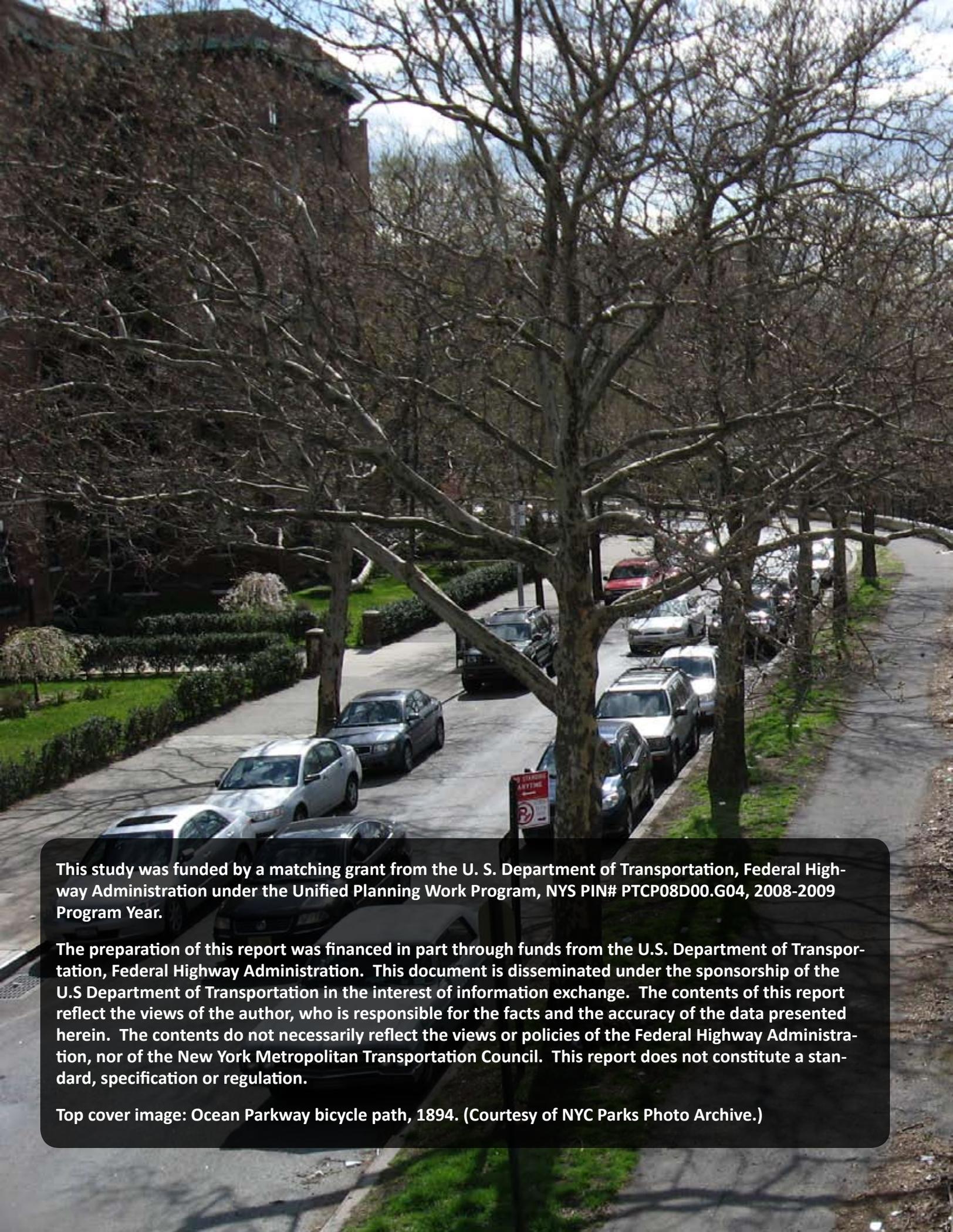




# PROSPECT PARK - OCEAN PARKWAY GREENWAY STUDY



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**Top cover image: Ocean Parkway bicycle path, 1894. (Courtesy of NYC Parks Photo Archive.)**



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# O EXECUTIVE SUMMARY

When Ocean Parkway was originally constructed in the 1870s, it was intended to link Prospect Park with the Atlantic Ocean, and in so doing, make the journey to the park part of the park experience. However, the Prospect Expressway, built between 1954 and 1962, ruptured Ocean Parkway's link with Prospect Park at Park Circle. Decades of haphazard bicycle and pedestrian access between Church Avenue and Prospect Park have followed. The Prospect Park-Ocean Parkway Greenway Study was created to seek out ways to improve this access between Ocean Parkway at Church Avenue, and Ocean Parkway and Prospect Park via Park Circle. Loss of this 3,000-foot-link reduces access not only to Prospect Park but Eastern Parkway and major Class 2 (striped on-street) bikeways like the 2<sup>nd</sup>/3<sup>rd</sup> Street corridors. Restoring this link can promote safe, continuous bicycle access spanning large stretches of Brooklyn.

The study team found several elements which inhibited easy, intuitive travel to and from Prospect Park via Ocean Parkway. To the south, the transition between the historic Class 1 bikeway along the parkway's west mall south of Church Avenue and the greenway adjacent to the east mall north of Church Avenue lacks clear guidance for pedestrians or cyclists. The parkway's east service road remained intact through construction of the Prospect Expressway, and the Class 1 greenway parallels this roadway for most of the distance between Church Avenue and the park.<sup>1</sup> However, the placement of signage, missing curb cuts, unaccommodating crosswalks, and a park entrance with little separation between cyclists and motorists, also makes the short trip from Church Avenue to Prospect Park difficult to navigate – especially in light of the City's recent efforts to expand and improve conditions for cyclists and pedestrians. Horseback riders travel-

ing to and from Prospect Park continue to use the streets near Park Circle; this study also addresses their needs.

Park Circle itself presents a unique set of challenges. For example, no crosswalk exists along part of its west side, probably due to the presence of a pedestrian overpass to the west. Yet the lack of a crosswalk does not prevent people from crossing here anyway, as pedestrian and cyclist counts conducted in July 2008 found. The circle's four lanes of traffic discourage use of the green space in the center of the circle. Even horses, which have a well-signed route and bridle path through the area, have to cross the circle's traffic lanes twice to get to and from Prospect Park. However, Park Circle is built to ample dimensions and creates opportunities to explore its reconfiguration, especially in light of unused paved areas along some of its perimeter.

Similarly, the eight lanes of roadway that enter and exit the western edge of Park Circle – the two one-lane Ocean Parkway service roads, the two-lane Exit 5 off of the Prospect Expressway, and a four-lane westbound flyover which carries traffic to Ocean Parkway and Fort Hamilton Parkway – are operating far below their carrying capacity. Opportunities exist to put at least two of these eight travel lanes to other uses, which would improve the pedestrian, cyclist and equestrian experience west

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<sup>1</sup>A Class 1 bicycle path is separated from general traffic by a physical barrier or runs along an entirely distinct right-of-way which is not used by motor vehicles. A Class 2 bicycle path is located on the same street bed as general traffic, but is delineated by lane striping or other visible markings. A Class 3 bicycle path shares the roadway with general traffic and is unmarked, though it may be signed.

of Park Circle without inhibiting vehicular traffic.

In July of 2008, the study team conducted a series of counts to learn more about bicycle and pedestrian circulation within the study area. Based on this data (which appears in Section 2.3) and site visits conducted April through June of that year, the study team developed several short- and long-term recommendations.

Among the short-term recommendations are the following:

- Install clearer wayfinding signage at the intersection of Church Avenue and Ocean Parkway.
- Install new crosswalk striping across Church Avenue between Ocean Parkway's east mall to the south and the greenway to the north to go along with the existing curb cuts which currently suggest that such a maneuver is sanctioned. Install similar striping across Caton Avenue.
- Remove a curb cut at the northern edge of the Ocean Parkway west mall at Church Avenue, which empties out into a busy roadway without any clear and corresponding destination; and place a pedestrian fence along the curb edge.
- Extend the Sunset Park Class 2 bikeways along Caton Avenue across the Prospect Expressway overpass to the Ocean Parkway Greenway using some other method than thermoplastic, which doesn't adhere to the concrete-decked roadway.
- Reconfigure the tree pits that cut into the greenway south of Caton Avenue by removing cobblestones to their north and south and paving the areas protruding into the greenway.
- At East 8<sup>th</sup> Street and Ocean Parkway, replace the existing greenway sign (which has an arrow that leaves the intended direction of travel open to interpretation) with a clearer one, and analyze the viability of a stop sign and crosswalks at this intersection.
- Install curb cuts and a crosswalk across Sherman Street at Ocean Parkway.
- Install a Class 1 bikeway along sidewalks of Park Circle's southeast and southwest quadrants.

Long-term, more capital-intensive recommendations are also made. They are more conceptual, and some of them would require detailed traffic modeling analysis to establish their feasibility. They include the following:

- Reverse the roles of the two Ocean Parkway Malls along the one block between Beverly Road and Church Avenue, allowing a transition for cyclists between the west and east malls at a simpler intersection which has had far fewer reportable accidents in recent years.
- As an alternative to Ocean Parkway, install a bikeway or bridle path along Caton Place, which lies immediately south of Ocean Parkway, is lightly trafficked, and is over 6 feet wider than the standard side street.<sup>2</sup>
- Close the northeast quadrant of Park Circle entirely and graft the circle interior to Prospect Park, ensuring that pedestrians, horses and cyclists will only need to cross one road to access the park from any adjacent location. Convert the remainder of the circle to two-way operation divided by a median.
- Implement the "Stable Brooklyn" option: Slightly regrade Exit 5, install an at-grade pedestrian crossing and signal between East 8<sup>th</sup> Street and Sherman Street, and dismantle Sherman Overpass.
- Condense Exit 5 to one lane; fill excess space to street level and create side-by-side bike & bridle paths.
- Condense the flyover to two lanes by eliminating and landscaping the southernmost lane and converting the northernmost lane to a Class 1 bikeway.

The New York City Department of Transportation (NYCDOT) is also working on short-term initiatives to improve mobility for all of the different travel modes which use Park Circle; some of these initiatives overlap with our own recommendations. NYCDOT welcomes this additional attention to the

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<sup>2</sup>A Class 1 bikeway or bridle path are long-term recommendations, but these options are grouped with the short-term recommendations due to their similarities to each other.

study area and hopes to continue working with both the community and other City agencies in this effort.

1

**OVERVIEW**

# 1 OVERVIEW

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The Prospect Park-Ocean Parkway Greenway Study was created to seek out ways to improve bicycle and pedestrian access between the Ocean Parkway west mall Class 1 bicycle lane which has its northern limit at Church Avenue and Ocean Parkway, and Prospect Park, via Park Circle.

When Ocean Parkway was originally conceived of by Frederick Law Olmsted and Calvert Vaux and constructed in the 1870s, it was intended to link Prospect Park and the Atlantic Ocean, creating the experience of traveling to and from Prospect Park in a park-like setting. The 2.2 mile-long Eastern Parkway was built first, from the northern tip of Prospect Park to Ralph Avenue, at what was then the boundary of the City of Brooklyn. It was constructed between 1870 and 1874. In fact, Eastern Parkway was the world's first "parkway," a term created by Olmsted and Vaux to describe a landscaped road built especially for pleasure driving.<sup>3</sup>

Eastern Parkway's main carriage road was surrounded by a tree-lined mall on each side and then a service road, a pattern copied when the 5.5-mile long Ocean Parkway was completed in 1876. Originating at Park Circle at the southwest corner of Prospect Park, Ocean Parkway briefly traveled roughly west by southwest before curving south to its ultimate southern endpoint at Coney Island. A generation later, in 1894, Ocean Parkway's western mall became home to the first bicycle path in the United States. (The parkway's eastern mall had a bridle path.)

Although on-street horse traffic eventually gave way to the automobile, Ocean Parkway's uses and physical footprint remained essentially unchanged for the next 60 years. However, the Prospect Expressway, built between 1954 and 1962, sig-

nificantly altered the northernmost part of the parkway. North of Church Avenue, the parkway's main roadway was depressed and converted into a limited-access highway. Ocean Parkway's western malls were destroyed, and the parkway's western (southbound) service road from Prospect Avenue to south of Fort Hamilton Parkway was severed. While a paved pathway was built along the partially remaining eastern mall to East 8<sup>th</sup> Street, the expressway severely compromised the historic, seamless link that Olmsted and Vaux intended to Prospect Park.<sup>4</sup>

Decades of haphazard bicycle and pedestrian access between Church Avenue and Prospect Park have followed, in no small part due to additional conditions that exist near Park Circle itself. As this report will show, placement of signage, missing curb cuts, unaccommodating crosswalks, a park entrance with little separation between cyclists and motorists, and an overbuilt vehicular flyover to Ocean Parkway and Fort Hamilton Parkway also make the short trip from Church Avenue to Prospect Park unintuitive – especially in light of the City's recent efforts to expand and improve conditions for cyclists and pedestrians. Horseback riders traveling to and from Prospect Park continue to use the streets near Park Circle too; this study has also been developed with them in mind.

Loss of this relatively short link (about 3,000 feet long) has an impact out of proportion to its size:

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<sup>3</sup>Source: NYCDPR Eastern Parkway historical sign: [http://www.nycgovparks.org/sub\\_your\\_park/historical\\_signs/hs\\_historical\\_sign.php?id=196](http://www.nycgovparks.org/sub_your_park/historical_signs/hs_historical_sign.php?id=196)

<sup>4</sup>Source: NYCDPR Eastern Parkway historical sign: [http://www.nycgovparks.org/sub\\_your\\_park/historical\\_signs/hs\\_historical\\_sign.php?id=10787](http://www.nycgovparks.org/sub_your_park/historical_signs/hs_historical_sign.php?id=10787)

it reduces access not only to Prospect Park but Eastern Parkway and major Class 2 bikeways like the 2<sup>nd</sup>/3<sup>rd</sup> Street corridors. Restoring this link can promote safe, continuous bicycle access spanning whole stretches of Brooklyn. This study will seek solutions that would better connect this historic Class 1 Greenway to Prospect Park via Park Circle.

This report provides historical and recent context with a literature review (Appendix A) describing the study area. Land use, zoning, census and accident data are also included, in an attempt to provide a complete picture of the area. A bicycle count, conducted in late July 2008, provides new data about the riding patterns of cyclists in the study area.

**FIGURE 1-A: STUDY AREA**





2

**EXISTING**

**CONDITIONS**

# 2.0 ISSUES FOUND WITHIN THE STUDY AREA

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Between April and June of 2008, the project team conducted site visits to the study area to get a better sense of the conditions cyclists and pedestrians face as they attempt to navigate the short distance between Church Avenue and Prospect Park.

Any cyclist or pedestrian with a basic knowledge of the neighborhood can make their way between Church Avenue/Ocean Parkway and Prospect Park. However, conditions for doing so are not ideal. Ambiguous curb cuts, striping and signage send mixed signals to cyclists and pedestrians. Entering Prospect Park, cyclists must travel on a poorly-delineated bikeway immediately adjacent to contraflow traffic during the hours when motor vehicles are allowed on the park roadway.

Park Circle itself presents a unique set of challenges to anyone trying to navigate it. The crosswalk to the north, at the end of Prospect Park Southwest, is laid out at an odd angle to avoid interfering with an exit road from the park. The west side of the circle is particularly difficult for pedestrians and cyclists. No crosswalk exists along part of the west side, probably due to the presence of a pedestrian overpass to the west. Yet the lack of a crosswalk does not prevent people from crossing here anyway. The circle's four lanes of traffic, though well regulated by signals, discourage use of the actual green space in the center of the circle. Only horses, which have a well-signed route and bridle path through the area, tend to make use of the circle's center, but they also have to cross the circle's traffic lanes twice to get to and from Prospect Park.

However, Park Circle also carries with it much potential. The northeastern and northwestern quadrants of the circle have unused roadbed which could be put to other uses. The circle itself is built

to ample dimensions and creates opportunities to explore its reconfiguration. Finally, the circle's location at the southwestern corner of Prospect Park offers interesting opportunities to make a more inviting gateway between the park and the adjacent neighborhoods of Flatbush, Kensington and Windsor Terrace.

Eight lanes of roadway enter and exit the western edge of Park Circle – the two one-lane Ocean Parkway service roads, the two-lane Exit 5 off of the Prospect Expressway, and a four-lane westbound flyover which carries traffic to Ocean Parkway (southbound) and Fort Hamilton Parkway.

Figure 2-A shows the current greenway route on Ocean Parkway between Beverly Road and Park Circle. From Ocean Parkway's southern terminus at Coney Island to south of Church Avenue, the parkway's west malls contain a bench-lined pedestrian walkway and a Class 1 bikeway, divided by a railing. The east mall is a bench-lined pedestrian only walkway from Church Avenue to Coney Island. North of Church Avenue, the west mall disappears entirely, while a paved pathway continues north along the eastern mall to East 8<sup>th</sup> Street. Cyclists who wish to continue to Prospect Park from there must ride on-street along the Ocean Parkway east service road and then with the flow of traffic through Park Circle. Cyclists from the park are supposed to travel with the flow of traffic through Park Circle and then along the disconnected northern remnant of the Ocean Parkway west service road to an overpass, where they are supposed to dismount and walk their bikes to the other end, across the street from the paved pathway's northern endpoint.

Pedestrian counts were not taken along Ocean Parkway, but bicycle counts conducted by DCP in

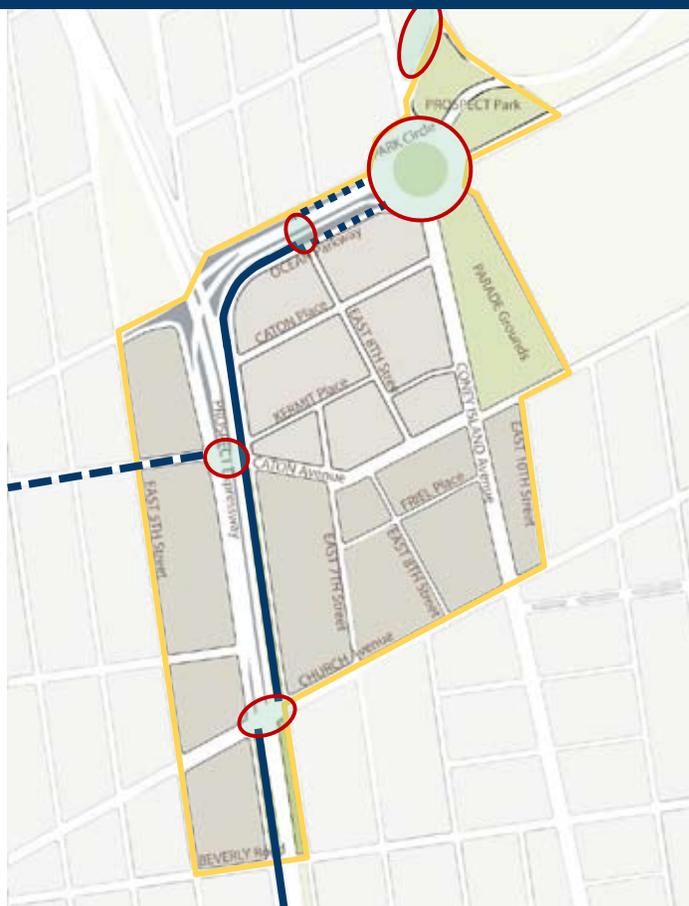
**FIGURE 2-A EXISTING GREENWAYS**

**CLASS 1**  
(OFF-STREET) GREENWAY

**CLASS 2**  
(STRIPED, ON-STREET) GREENWAY

**CLASS 3**  
(UNSTRIPED, ON-STREET GREENWAY)

UNSIGNED OR AMBIGUOUS  
GREENWAY SEGMENTS



July 2008 show moderately low cyclist volumes for such a high-capacity facility. Over a total of 8 hours (2 hours each during the weekday AM peak, mid-day and PM peak; plus 2 hours on a Sunday from 9:15 am to 11:15 am), 306 cyclists were counted along all portions of Ocean Parkway south of Church Avenue – an average of 38.25 cyclists per hour. Contrast this with Manhattan greenway data collected in the fall of 2008, when 1,937 cyclists utilized Route 9A at West 11<sup>th</sup> Street in Manhattan during a 6-hour period. Ocean Parkway’s bicyclist utilization lies somewhere between that of East River Park and Houston Street (460 in 6 hours) and East River Park at 90<sup>th</sup> Street (120 in 6 hours.)<sup>5</sup>

Clear potential exists to improve bicycle utilization of this historic 115-year-old greenway. A more intuitive link between Prospect Park and Church Avenue could establish a more solid tie between parkway and park, thus plugging the parkway into other major components of Brooklyn’s bicycle network (such as the 2<sup>nd</sup>/3<sup>rd</sup> Street Class 2 bikeway and the Eastern Parkway Class 1 bikeway). The catchment

area that would have direct access to and from the Ocean Parkway Greenway would then be greatly expanded, which could encourage more cyclists to use it. (Bicyclist utilization levels of Ocean Parkway are discussed later in this report.)

What follows is a point-by-point description of nine issues (mapped in Figure 2-B) found along the Ocean Parkway corridor from Church Avenue to Prospect Park which affect cyclists, pedestrians, and horse traffic.

<sup>5</sup>Source: NYCDOP annual bicycle network counts, fall 2008.

**FIGURE 2-B: EXISTING ISSUES**

1. Church Avenue + Ocean Parkway intersection
2. Church + Caton Avenues' curb cuts + striping
3. East service road bikeway widths
4. Indistinct bikeway widths
5. Sherman Overpass Park
6. Park Circle
7. Ocean Pkwy – Ft. Hamilton Pkwy flyover
8. Horse riders through Park Circle
9. Contraflow bike access at Prospect Park



### **ISSUE 1 – CHURCH AVENUE INTERSECTION**

The intersection of Church Avenue and Ocean Parkway marks the point where the parkway's main roadway to the south transitions into the Prospect Expressway to the north. The northbound and southbound service roads, which are separated from the main road south of Church Avenue by tree-lined malls, continue at ground level as the Prospect Expressway descends below grade.

Both malls have pathways along them. Along the majority of Ocean Parkway, the west mall is divided by a railing into a Class 1 bikeway to the east and a bench-lined pedestrian walkway to the west. At the intersection of Beverly Road and Ocean Parkway – the northernmost intersection with this configuration – the bikeway is 9' 8" wide and the pedestrian walkway is 5' 10" wide. However, north of Beverly Road, this division ends, and the nearly 16-foot-wide pathway tapers to a shared-use path 11' 6" inches wide at Church Avenue. Given the relatively low pedestrian and cyclist volumes at this

location, the tapered shared-use pathway is generally suitable as is. However, a significant increase in cyclist traffic would eventually warrant a reanalysis of this location.

The east mall is 10' 3" inches wide, but several chess tables and benches protrude into the mall from the east, reducing the mall's effective width to 6' 4". Bicycling is prohibited on the east mall.

While this arrangement of uses along the malls is consistent along most of the parkway's length to Coney Island, the pattern breaks down north of Church Avenue, where the west mall disappears entirely. The eastern half of the east mall, which partially survived the construction of the Prospect Expressway, contains a shared-use bicycle and pedestrian path. See Figure 2-C.

The transition along Ocean Parkway between the bicycle paths north and south of Church Avenue is not intuitive. Some wayfinding signage appears

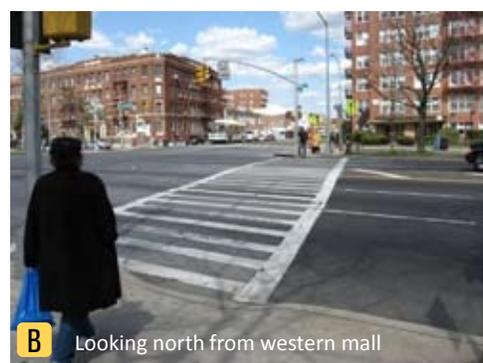
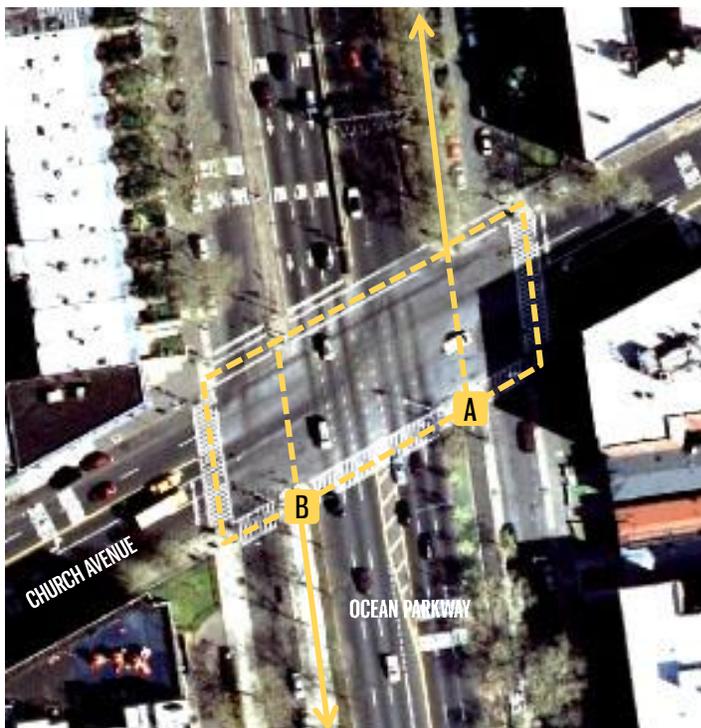
southbound, but little guidance is offered northbound. Striped crosswalks guide cyclists and pedestrians around the south, east and west sides of the intersection; an unstriped crosswalk traverses the north end, where the Prospect Expressway ends. Greenways are designated by solid green lines; potential ways to get from one to the other are shown with dotted green lines.

Further compounding this hard-to-navigate intersection is the fact that it lies at the intersection of two NYCDOT-designated through truck routes. Trucks having neither an origin nor a destination within Brooklyn are restricted to these street segments.<sup>6</sup> Church Avenue from McDonald Avenue to Flatbush Avenue is a through truck route, as is the whole length of the Prospect Expressway.

<sup>6</sup>New York City Traffic Rules and Regulations, <http://www.nyc.gov/html/dot/downloads/pdf/trafrule.pdf>, page 73.

## FIGURE 2-C: ISSUE 1 - CHURCH AVENUE & OCEAN PARKWAY INTERSECTION

**+ Unintuitive bike/ped transition from East Mall to West Mall.** The solid green lines represent the existing greenway, while the dotted lines represent possible ways to get from one part of the greenway to the other. During traffic counts done for this study, cyclists were observed making all of the movements shown by the dotted lines.



## ISSUE 2 – CURB CUTS AND STRIPING

An overlapping issue also applies both to the Church Avenue intersection and the juncture of Ocean Parkway and Caton Avenue, one block to the north: The existing curb cuts and crosswalk striping do not complement each other. At Church Avenue and Ocean Parkway (shown below in the photo to the left), curb cuts at both the north and south sides of the east malls clearly empty into the street bed, implying that cyclists and pedestrians should cross from north to south at this location. However, no crosswalk exists. North-south crosswalks do exist east of the east service road at the Ocean Parkway-Church Avenue intersection. If one were guided by the crosswalks alone, the implication would be that bicycle and foot traffic heading from south to north along the greenway should cross to the east mall, keep going across the east service road to the far eastern sidewalk, cross Church Avenue, and then turn west, crossing back to the east mall before proceeding north.

At Caton Avenue (shown below in the Figure 2-D in the middle and to the right), the crosswalk-curb cut situation is more ambiguous. The curb cuts are offset on a diagonal, encouraging crossing the intersection either north-south or east-west. However, a direct striped crosswalk connecting the greenway from north to south does not exist. The other three sides of the intersection do have striped crosswalks, encouraging the same circuitous movement that is implied at Church Avenue.

**FIGURE 2-D: ISSUE 2 - CURB CUTS & STRIPING SEND MIXED SIGNALS**

- + **At Church Avenue and Caton Avenue, curb cuts empty into streets without striped crosswalks.**
- + **Existing striping implies a circuitous route.** The solid green lines represent the existing greenway, while the dotted lines represent possible ways to get from one part of the greenway to the other. During traffic counts done for this study, cyclists were observed making all of the movements shown by the dotted lines. Further guidance for cyclists could help alleviate this condition.



### ISSUE 3 – INCONSISTENT BIKEWAY WIDTHS

As shown in the Figure 2-E, the width of the greenway varies. Most of the east mall shared-use path is in the 7'3"-7'10" range, and tree pits south of Caton Avenue cut into the greenway, reducing it to a width of 6'0"-6'4". Farther north, at the Sherman Overpass, the width again fans out to 8'10"-9'10".

Much of the bikeway north of Church Avenue fails to meet the guidelines as outlined in the 1999 AASHTO Guide for the Development of Bicycle Facilities. While generally recommending a paved width for a two-directional shared use path of 3.0 m (10 feet), low-traffic paths with minimal pedestrian use, adequate passing capabilities and few maintenance vehicle impediments could have a width of 2.4 m (8 feet).<sup>7</sup> Yet even the reduced-width AASHTO guidelines are not met along much of the bikeway north of Church Avenue.

<sup>7</sup>pp. 35-36.

**FIGURE 2-E: ISSUE 3 – INCONSISTENT BIKEWAY WIDTHS**

- + The width of the bikeway fluctuates throughout the study area
- + Tree pits cut into the designated bikeway



## ISSUE 4 – INDISTINCT GREENWAY WEST OF PARK CIRCLE

North of Caton Place, Ocean Parkway’s east mall and service road curve to the east for their final approach into Park Circle. At East 8th Street, the greenway abruptly ends and is replaced by a bridle path for the remainder of the distance to the circle. The greenway ends just west of an overpass (named “Sherman Overpass” in this study, due to its northern endpoint near Sherman Street) which carries users over several lanes of roadway.<sup>8</sup>

In lieu of the greenway, cyclists are directed via greenway signage east of Sherman Overpass to proceed on-street with the flow of traffic along Ocean Parkway eastbound to Park Circle. However, it would be understandable if many cyclists never saw this sign, because before they get to it, another bikeway sign with a diagonal arrow appears to direct cyclists onto Sherman Overpass itself. Cyclists are thus given two ways to get to Park Circle and Prospect Park. (See Figure 2-F.) This would not be

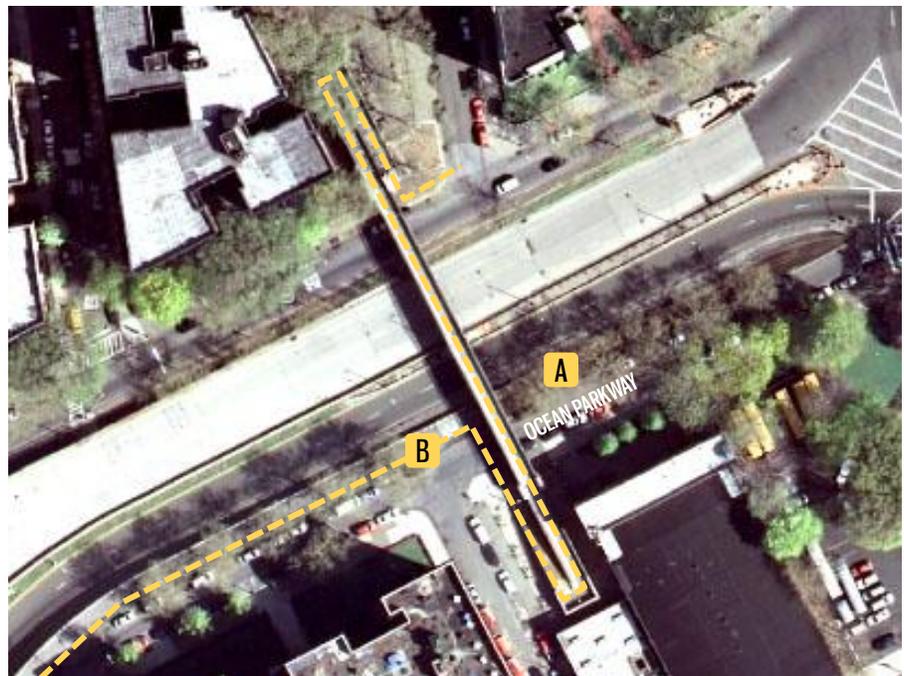
a problem except for the fact that directing cyclists onto the overpass compounds other problems with bicycle access to Prospect Park, which are discussed later in this report.

Further complicating matters is the fact that existing signage coming from Prospect Park fairly clearly directs westbound cyclists along the northern edge of Park Circle to westbound Ocean Parkway and then over Sherman Overpass to the east mall greenway. (Cyclists are supposed to dismount and walk their bikes along the overpass, but no sign tells them to do so.) In and of itself, routing cyclists to a road where they travel with the flow of traffic and then onto a pedestrian overpass is better than forcing them into contraflow traffic along Ocean Parkway’s eastbound roadway. However, it does reinforce the ambiguous arrangement eastbound cyclists have. See Figure 2-G.

<sup>8</sup>The roadway, discussed later in the report, is a four-lane one-way flyover which conveys traffic from Park Circle to both Fort Hamilton Parkway and Ocean Parkway/the Prospect Expressway. See Issue 7.

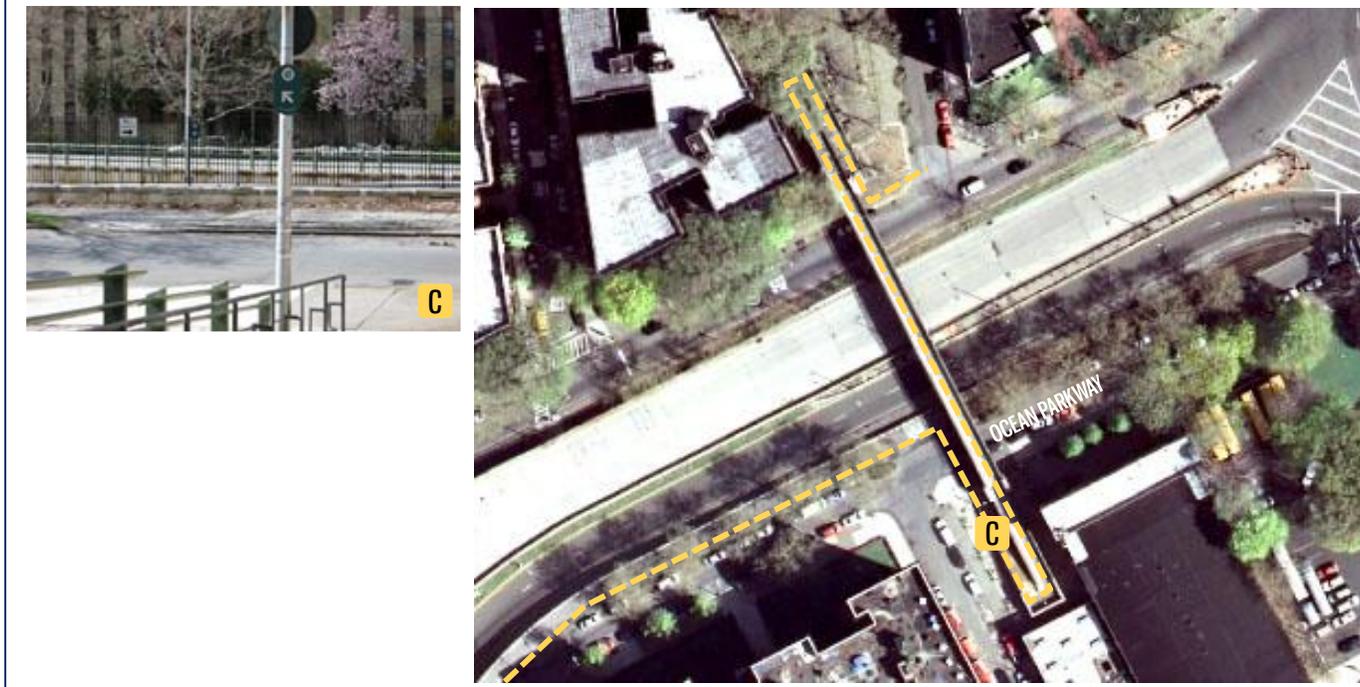
FIGURE 2-F: ISSUE 4 – INDISTINCT BIKE ROUTES WEST OF PARK CIRCLE

+ Ambiguous signage implies two possible eastbound routes



## FIGURE 2-G: ISSUE 4 – INDISTINCT BIKE ROUTES WEST OF PARK CIRCLE

+ Westbound route uses Ocean Parkway and Sherman Overpass



### ISSUE 5 – SHERMAN OVERPASS PARK AREA

The northern end of Sherman Overpass accesses street level at a small, unnamed park on the north-east corner of Sherman Street and Ocean Parkway. The park is located at Block 5286, Lot 42<sup>9</sup>, and is identified by the New York City Department of Parks and Recreation as park number B255(M). For the purposes of this study, this location will be identified as “Sherman Overpass Park.”

The most conspicuous problem with the intersection at Sherman Overpass Park is that it has no curb cuts, which makes the intersection harder to cross for both mobility-impaired pedestrians and bicyclists wishing to enter/exit the sidewalk en route to/from Sherman Overpass. (See Figure 2-H.) It also lacks a striped crosswalk, although since the road being crossed is a one-lane, one-way, lightly trafficked street, a crosswalk may not be a high priority. (Cyclists would be riding on-street up to the point where they are entering or exiting the overpass.)

A more serious issue is tied to the signage discussed in Issue 4. Those eastbound cyclists who heed the sign directing them to cross Sherman Overpass from the south find themselves coming off an uncut curb into a busy stretch of contraflow traffic: the westbound Ocean Parkway segment that brings vehicles to the Prospect Expressway and Prospect Avenue. According to automatic traffic recorder (ATR) counts conducted by NYCDOT in May 2008, midday weekday and weekend traffic generally falls in the range of about 325 to 440 vehicles per hour, while peak-hour weekday traffic (the 8:00am hour) generally reaches about 700 to 800 vehicles per hour.<sup>10</sup>

<sup>9</sup>Source: NYCDPR Planning Division

<sup>10</sup>Source: NYCDOT. See Chapter 9 for a fuller discussion of NYCDOT’s May 2008 vehicular counts

## FIGURE 2-H: ISSUE 5 – SHERMAN OVERPASS PARK AREA

- + Lack of curb cuts creates potential hazard for cyclists and mobility-impaired in either direction
- + Greenway sign at south end of on-ramp implies contraflow cycling
- + No striped crosswalk



## ISSUE 6 – PARK CIRCLE

Park Circle is designed with a wide circular roadbed. The original six-lane-wide main roadway, two malls and two one-lane service roads entering the circle from the west forced Park Circle to be large enough to accommodate all entering and exiting traffic from Ocean Parkway. By 1962, Ocean Parkway's main road had been replaced with the two-lane Exit 5 of the Prospect Expressway and a four-lane flyover.<sup>11</sup>

Park Circle's roadbed, as shown in Figure 2-I, ranges from 97 to 100 feet wide; eight lanes of traffic could conceivably envelop the circle, a width comparable to large interstate highways. This is particularly true in the circle's northeast and northwest quadrants. The aerial photograph of the circle above clearly shows "desire lines," or places where the pavement has been repeatedly driven over. The lack of vehicular activity along the outer reaches of the circle's northeast quadrant is implicitly acknowledged by striping the area, making it off limits to cars. Along the northwestern edge, the difference

between used and unused roadbed is more obvious. Lighter pavement indicates places where tire rubber has not accreted to the pavement surface. Unrealized potential exists throughout the circle to make it easier to navigate for cyclists and pedestrians. The actual parkland at the center of the circle is also relatively inaccessible, although a bridle path does run through it.

The western edge of the circle is particularly difficult for pedestrians and cyclists. The Sherman Overpass a block to the west was intended to intercept non-vehicular traffic and allow it to move north-south, allowing drivers at the western edge of Park Circle to move to and from without having to concern themselves with foot and bike traffic. Yet pedestrians and cyclists continue to cross the street here. As discussed in Section 2.3, midday weekday counts conducted in July 2008 actually found that more people crossed at grade than via Sherman Overpass. The Sherman Overpass is not a

<sup>11</sup>See following page for a detailed breakdown of what currently constitutes these eight lanes.

direct, short or flat way to get from south to north. The west edge of the circle is.

Foot and cyclist traffic that chooses to avoid the Sherman Overpass and cross this part of Park Circle at grade, though, must navigate past the following:

- the Ocean Parkway east service road (east-bound traffic, one lane);
- Exit 5 of the Prospect Expressway (eastbound traffic, two lanes);
- the Fort Hamilton Parkway/Ocean Parkway fly-over (westbound traffic, four lanes), and
- the severed segment of the Ocean Parkway west service road which provides access to the Prospect Expressway and Prospect Avenue (westbound traffic, one lane).

Crosswalks do exist across the Ocean Parkway east service road and Exit 5, but they are angled northeast towards the middle of Park Circle instead of north towards the Ocean Parkway west service road. Foot and bicycle traffic going north then proceeds along a large funnel-shaped area of

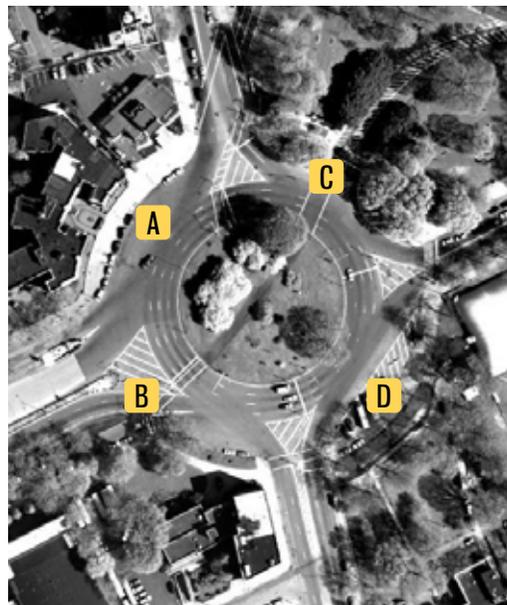
striped pavement to the eastern tip of a long traffic island. Once they get across the four lanes of the flyover, another island provides space to wait until proceeding across the Ocean Parkway west service road.

### FIGURE 2-1: ISSUE 6 – PARK CIRCLE (BIKE AND PEDESTRIAN ACCESS)

- + Excess space in northeast and northwest quadrants
- + Western edge of Park Circle very difficult to navigate



Looking southwest towards flyover



Looking southeast towards Parkside Av



Looking north from east end of Ocean Parkway east service road



Police parking in southwest quadrant

## ISSUE 7 – OCEAN PARKWAY-FORT HAMILTON PARKWAY FLYOVER

To compensate for the loss of access caused by construction of the Prospect Expressway, a four-lane flyover was constructed from the western edge of Park Circle. (See Figure 2-J.) All traffic on the flyover travels westbound before the flyover splits near the Prospect Expressway overpass. The two southern lanes split off to briefly join the Prospect Expressway southbound before it becomes the mainline road of Ocean Parkway. (These two lanes merge into one before reaching the expressway). The two northern lanes proceed to the western edge of Fort Hamilton Parkway, which remains a one-way, two-lane street until west of Dahill Road.

Peak hour volumes on these four lanes of roadway (generally in the 5:00pm hour) are less than the volumes on the one lane of the westbound Ocean Parkway service road. An average of about 675 vehicles per hour use the flyover, compared with the 700 to 800 vehicles per hour on Ocean Park-

way westbound. Midday weekday volumes on the flyover are slightly higher than on Ocean Parkway, generally by about 70 vehicles per hour (about 450vph for the flyover and about 380vph on Ocean Parkway) , but this still results in a roadway with significant excess capacity.

Like Park Circle, potential exists to reallocate space on this roadway for other uses.

**FIGURE 2-J: ISSUE 7 – OCEAN PARKWAY/FORT HAMILTON PARKWAY FLYOVER + EXIT 5**

- + Traffic levels on the flyover do not justify four lanes and traffic levels on Exit 5 do not justify two lanes.
- + Potential to accommodate other modes



## ISSUE 8 – HORSE TRAFFIC MUST NAVIGATE PARK CIRCLE

Kensington Stables is the last of what were once several stables remaining in the area. It is located on East 8th Street and Caton Place, a block southwest of Park Circle and a short block from Ocean Parkway. Until 1967, when they were replaced with the current pedestrian walkway, the eastern malls contained a bridle path south to Coney Island. The surviving stable's major remaining destination, Prospect Park, continues to draw horse traffic through Park Circle.

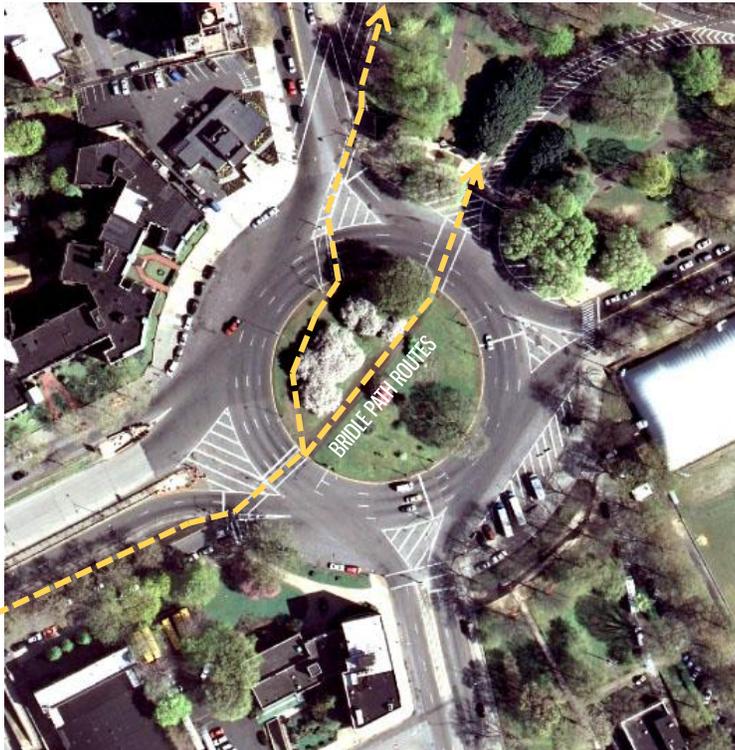
Intervals of horse traffic in Park Circle make this intersection different from most within the City. A bridle path occupies the space north of the Ocean Parkway eastern service road from just west of the Sherman Overpass to Park Circle. Two bridle paths cut through the center of the circle, as seen in Figure 2-K. One heads northeast to the Prospect Park loop entrance. The other cuts north, hugging the western rim of the circle's hub until heading

towards the park loop exit road.

Signage within and around Park Circle alerting drivers to the presence of horses are generally plentiful and well-placed. However, since equestrians cut through the circle, they have to cross the vehicular traffic twice to get to and from the park. The more southerly route through the center of the circle crosses the northeastern portion of Park Circle at a location relatively far from the nearest traffic signal – a situation which presents less than ideal sight lines for both equestrians and motorists.

**FIGURE 2-K: ISSUE 8 – PARK CIRCLE (HORSE ACCESS)**

**+ Bridle paths are well-signed but cross Park Circle traffic twice**



## ISSUE 9 – CONTRAFLOW BIKE ACCESS AT PROSPECT PARK

Vehicular access between Park Circle and Prospect Park is provided via two roadways. An entrance road intersects the circle's northeast quadrant, roughly equidistant from Parkside Avenue and Prospect Park Southwest. A three-lane exit road from the park intersects with Prospect Park Southwest just north of the circle.

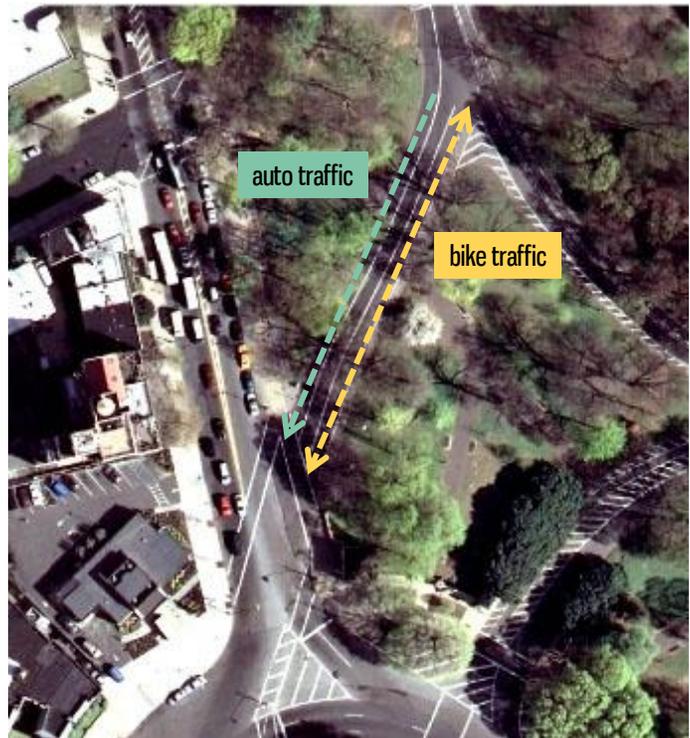
Immediately adjacent to the easternmost lane of the exit road – and separated from the travel lane by a single, worn white stripe – is a bidirectionally-signed bicycle lane, as seen in Figure 2-L. During most of the day, when the park drive is closed to motor vehicles, the juxtaposition of these lanes is not a problem. However, the western part of the Prospect Park exit roadway is open to traffic from 5:00pm to 7:00pm weekdays. According to May 2008 ATR counts conducted by NYCDOT, an average of approximately 535-565 vehicles per hour exit the drive during the peak (5:00pm) hour, against the flow of park-bound bicycle traffic.

**FIGURE 2-L: ISSUE 9 – CONTRAFLOW BIKE ACCESS AT PROSPECT PARK**

- + Bi-directionally signed bike lane immediately parallels exit-only park roadway, without buffer
- + Cyclists exiting the park are divided from traffic by a very worn stripe



Image showing faded street markings



# 2.1 ZONING AND POPULATION CHARACTERISTICS

Several land uses can be found within the study area. Ocean Parkway tends to have the tallest, most high-density buildings, although recent construction of a multistory apartment building at the north end of Coney Island Avenue has also taken place. The study area’s character is overwhelmingly residential, but commercial strips exist on Coney Island Avenue and Church Avenue.

## East Windsor Terrace Rezoning

When this project started in the spring of 2008, eight zoning classifications existed within the study area. However, in response to community concerns about out-of-scale development overwhelming the study area, DCP proposed a zoning map amendment for approximately five blocks within the East Windsor Terrace neighborhood of Brooklyn’s Community District 7. The rezoning area is generally bounded by Ocean Parkway to the west, Coney Island Avenue to the east, Caton Place to the north and Caton Avenue to the south, and is referred to as “Stable Brooklyn” by some community members because of its proximity to the Kensington Stables at East 8th Street and Caton Place.

Figure 2-M shows the new zoning now in effect.

The rezoning aims to protect portions of the East Windsor Terrace neighborhood characterized by one- and two-family residences, and to ensure that future residential development reflects this existing lower density context. In addition, the rezoning establishes a new commercial overlay on the primary corridor of Caton Avenue to provide opportunities for local retail in the area.

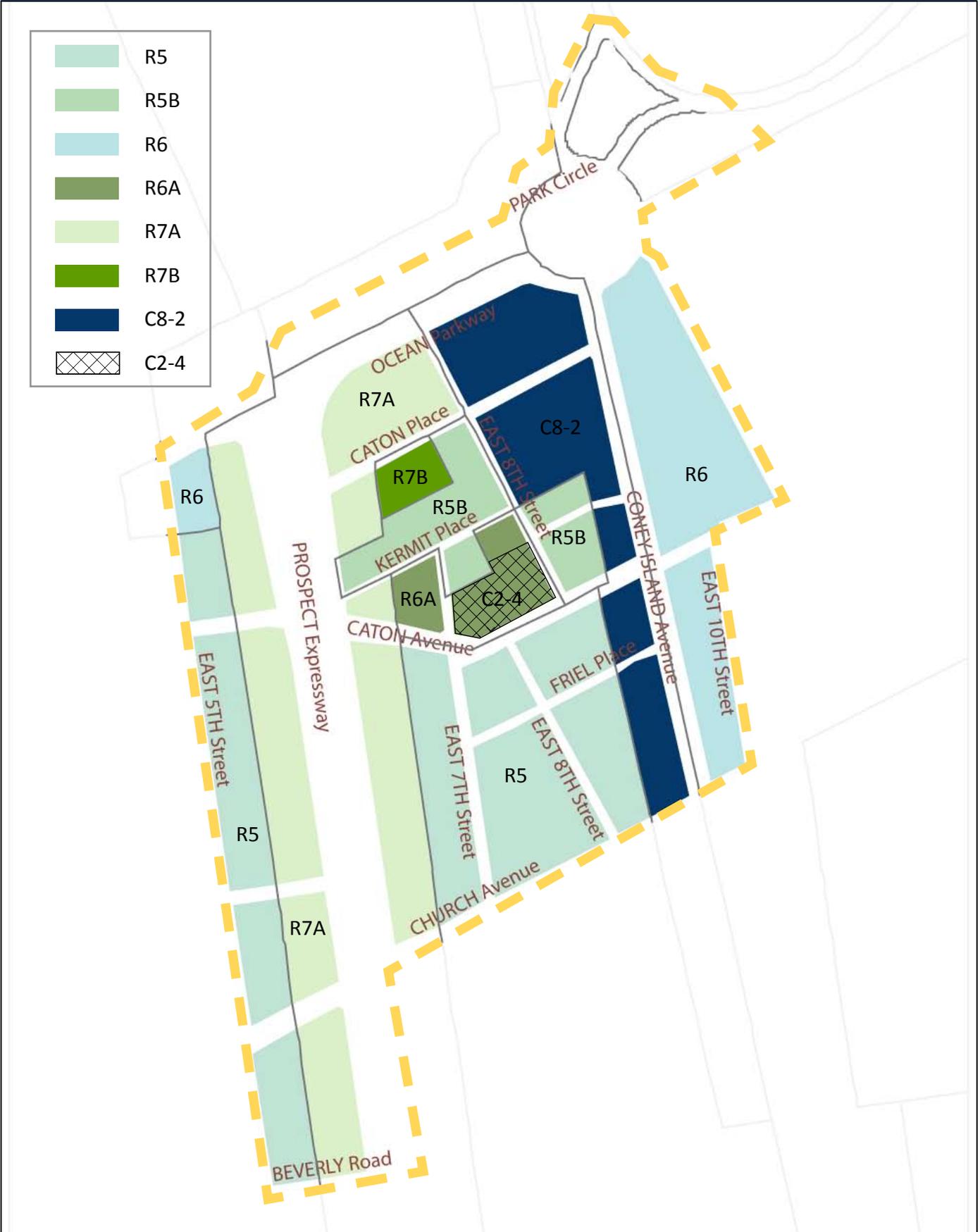
DCP certified the Uniform Land Use Review Procedure (ULURP) application for the rezoning on November 17, 2008, and the City Council approved the rezoning on March 11, 2009.

Table 2-A summarizes the progress of the proposed rezoning through the ULURP process.

**TABLE 2-A: PROGRESS OF EAST WINDSOR TERRACE REZONING**

<i>Milestone</i>	<i>Date</i>
Department of City Planning Certification	November 17, 2008
Community Board 7 Approval	December 10, 2008
Brooklyn Borough President Approval	December 30, 2008
City Planning Commission Hearing	January 21, 2009
City Planning Commission Review	February 4, 2009
City Council Approval	March 11, 2009

**FIGURE 2-M: STUDY AREA ZONING**



## Zoning Classifications Found Within Study Area

### Residential

#### **R5**

Areas zoned R5 have a maximum allowable FAR of 1.25, and typically result in three-story attached houses and small apartment houses. Building heights are limited to 40 feet, with a 30-foot street wall maximum. A minimum of 85 percent of all dwelling units must have parking for one vehicle per dwelling unit.

#### **R5B**

R5B districts permit a maximum FAR of 1.35 and a maximum building height of 33 feet with a maximum street wall height of 30 feet. The required minimum lot width and area for detached homes is 25 feet and 2,375 square feet respectively, and for other housing types is 18 feet and 1,700 square feet respectively. Curb cuts are prohibited on lots less than 40 feet wide. The required minimum front yard is 5 feet and must be as deep as an adjacent front yard. Detached residences require two side yards with a total width of 13 feet. Zero lot line buildings require one 8-foot side yard and all other buildings require one 4-foot side yard. When parking is required, on-site spaces must be provided for two-thirds of the dwelling units.

#### **R5 Infill**

Areas zoned R5 Infill have a maximum allowable FAR of 1.65, and tend to result in more attached housing than in R4 districts. Building heights are limited to 33 feet, with a 30-foot street wall maximum. A minimum of 66 percent of all dwelling units must have parking for one vehicle per dwelling unit.

#### **R6**

In an R6 zone, allowed FARs range from .78-2.43, or 2.20-3.00 if the higher lot coverage for Quality Housing is chosen. (Quality Housing maximum building heights are either 55 or 70 feet, depending on how wide the facing street is.) Off-street parking is generally required for 70 percent of conventional R6 dwelling units or 50 percent for Quality Housing R6 dwelling units. Although this is the lowest residential classification which allows “tower-in-the-park” style housing, none exist here.

#### **R6A**

R6A is a contextual district that would ensure that new construction would be compatible with existing buildings. R6A has a maximum FAR of 3.0 for residential and community facility uses. Above a base height of 40 to 60 feet, the building must provide a setback of 10 feet on a wide street and 15 feet on a narrow street before rising to a maximum height of 70 feet. Off-street parking is required for 50 percent of the units.

#### **R7A**

Areas zoned R7A have a maximum allowable FAR of 4.0. Building heights are limited to 80 feet, with a 40-foot base height minimum and 65-foot base height maximum. This typically results in seven- and eight-story apartment buildings. The area between the street wall and street line must be landscaped, and any new buildings must match the street lines of any buildings (up to a depth of 15 feet) within 150 feet on the same block. A minimum of 50 percent of all dwelling units must have parking for one vehicle per dwelling unit, but if the zoning lot is 10,000 square feet or less the requirement drops to 30 percent. (If 15 or fewer spaces are required, the parking regulation is waived entirely.) Quality Housing bulk regulations are mandatory for R7A districts.

#### **R7B**

Areas zoned R7B have a maximum allowable FAR of 3.0. Building heights are limited to 75 feet, with a 40-foot base height minimum and 60-foot base height maximum. The front wall of any new buildings up to 50 feet wide must be as deep as one adjacent lot but no deeper than the other one. For buildings 50 feet or wider, front walls cannot be closer to the street line than those of an adjacent building (up to a depth of 15 feet). Curb cuts are prohibited in front of lots 40 feet or narrower. A minimum of 50 percent of all dwelling units must have parking for one vehicle per dwelling unit, but the regulation is waived if five or fewer spaces are required. Quality Housing bulk regulations are mandatory for R7B districts.

#### **R8B**

Areas zoned R8B have a maximum allowable FAR of 4.0. Building heights are limited to 75 feet, with

a 55-foot base height minimum and 60-foot base height maximum. The front wall of any new buildings up to 50 feet wide must be as deep as one adjacent lot but no deeper than the other one. For buildings 50 feet or wider, front walls cannot be closer to the street line than those of an adjacent building (up to a depth of 15 feet). Curb cuts are prohibited in front of lots 40 feet or narrower. In Brooklyn, a minimum of 40 percent of all dwelling units must have parking for one vehicle per dwelling unit, but the regulation is waived if 15 or fewer spaces are required. Quality Housing bulk regulations are mandatory for R8B districts.

## Commercial Overlays

Commercial designations in the C1 and C2 groups are overlays, meaning that they are superimposed upon existing residential zones. Usually this means that retail exists on the ground floor or first two floors of a residential building. The C1-3 and C2-3 zones described below are commercial overlays.

### C1-3

The overlay serves local retail needs (such as grocery stores, beauty parlors and Laundromats), and is limited to a commercial FAR of 1.0. The district is 150 feet deep.



A C1-3 commercial district overlays an R5 district on the north side of Church Avenue between East 7th and East 8th streets.



The study area's sole C2-3 overlay, in an R6 district on the north side of Church Avenue between Coney Island Avenue and East 10th Street.



A typical stretch of C8-2-zoned automotive uses on Coney Island Avenue south of Church Avenue.



Housing in an R5 district, on East 8th Street south of Friel Place.

### **C2-3**

This district can accommodate a slightly wider range of uses than a C1 district. Upholsterers, appliance retailers and business services can appear in C2 overlays.

### **C2-4**

Commercial uses in C2-4 districts have a maximum FAR of 2.0. Permitted uses in C2-4 district include drug stores, restaurants, beauty parlors and bike repair services. Residential, mixed commercial/residential and community facility uses in C2 commercial overlay districts are regulated by the underlying residential districts. Commercial uses in mixed use buildings cannot be located above the first floor.

### **C8-2**

C8-2-zoned areas are meant for automobile-related uses and other large commercial facilities which require a lot of land. The maximum allowed FAR in a C8-2 district is 2.0. All commercial uses and some community facilities are allowed in a C8-2 district, but residential uses are not permitted.



A typical six-story apartment buildings on Ocean Parkway.



A typical six-story apartment buildings on Ocean Parkway.



An apartment building along Park Circle's northwest quadrant, in the R8B district along the westbound Ocean Parkway stub.



Although zoned R7A, some lower-density housing along the parkway survives.

## Census Data

The 2000 Census counted 6,611 people in the 20 blocks of the study area, including the entirety of the three blocks which front the westbound Ocean Parkway stub from Park Circle to Prospect Avenue.<sup>12</sup> Figure 2-N breaks down the population by block. It should be noted that some additional residential construction has taken place in the study area since 2000.

Just over three quarters of the population lived on the blocks bordering Ocean Parkway.

A total of 2,835 housing units were found within the study area. At the time of the Census, 2,729 were occupied, making for a 3.7 percent vacancy rate. The majority – 2,177, or 79.8 percent – of the units were renter-occupied. The remaining 552 units (20.2 percent) were owner-occupied.

Tables 2-B and 2-C respectively show the primary mode of travel for workers who lived in the study area and workers who commuted to the study area in 2000. Because this journey-to-work data is sample data and only available down to the block group level, mode splits are estimated, and several blocks beyond the study area are unavoidably included in this data. A comparison with primary modes for all commuters to and from all of Brooklyn is also included.

As seen in Table 2-B, in 2000 the majority of the 4,954 workers living in the study area commuted to their jobs by subway (53.1 percent), while an additional 10.5 percent commuted primarily by bus. The proportion of subway commuters was above the boroughwide share of 44.8 percent. Drivers commuting alone were a distant second to subway commuters, at 18.7 percent. Six-tenths of one percent bicycled to work, but only 4.4 percent walked – half the percentage of Brooklyn as a whole that walks to work (8.8 percent). The remaining 13.5 percent either worked at home or commuted by carpool, taxi, railroad, or other means.

The travel profile of commuters to the study area, shown in Table 2-C, was considerably different. More people drove alone to the study area than used any other mode, including subway. However, while this mode split was also true for Brooklyn as a whole, the margin between solo drivers and

subway commuters was smaller in the study area (30.6 percent vs. 23.8 percent) than boroughwide (34.9 percent vs. 22.8 percent). Walkers notably made up the third largest group of commuters to the study area, and with a 14.8 percent share of all commuters, walkers outpaced the borough as a whole by 3.2 percent. Though data from a relatively small sample size should be used with caution, the estimated 19 cyclists comprised 1.1 percent of all commuters to the area, compared to 0.5 percent for the entire borough. (The proximity of Prospect Park may induce some commuters from the north and east to walk or bike to work.) Also notable is the high proportion of respondents who said they worked from home.

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<sup>12</sup> The smallest divisible unit in Census data is block level. The study team was not able to subdivide these blocks to separate out the dwellings north of the study area on these three blocks. Therefore, for the purposes of this chapter, all of these three blocks will be included as part of the study area's Census data.

**FIGURE 2-N: 2000 CENSUS TRACTS AND POPULATION (TRACT-BLOCK NUMBER)**

POPULATION IN BLUE



**TABLE 2-B: PRIMARY TRAVEL MODE FOR COMMUTERS FROM STUDY AREA  
(2000 CENSUS SAMPLE DATA)**

<i>Mode</i>	<i>Study Area</i>		<i>Brooklyn-wide</i>		<i>difference</i>
Subway	2,630	53.1%	403,325	44.8%	8.3%
Drove alone	925	18.7%	202,070	22.4%	-3.8%
Bus	520	10.5%	93,765	10.4%	0.1%
Walked	220	4.4%	78,935	8.8%	-4.3%
Worked at home	170	3.4%	20,665	2.3%	1.1%
2-person carpool	148	3.0%	49,025	5.4%	-2.5%
Railroad	120	2.4%	12,170	1.4%	1.1%
3-person carpool	70	1.4%	12,180	1.4%	0.1%
4+ person carpool	55	1.1%	11,035	1.2%	-0.1%
Taxicab	54	1.1%	6,150	0.7%	0.4%
Bicycle	30	0.6%	4,845	0.5%	0.1%
Other means*	12	0.2%	6,875	0.8%	-0.5%
<b>Total</b>	<b>4,954</b>	<b>100.0%</b>	<b>901,025</b>	<b>100.0%</b>	<b>0.0%</b>

**TABLE 2-C: PRIMARY TRAVEL MODE FOR COMMUTERS TO STUDY AREA  
(2000 CENSUS SAMPLE DATA)**

<i>Mode</i>	<i>Study Area</i>		<i>Brooklyn-wide</i>		<i>difference</i>
Drove alone	540	30.6%	232,715	34.9%	-4.3%
Subway	420	23.8%	152,185	22.8%	1.0%
Walked	260	14.7%	76,570	11.5%	3.2%
Bus	174	9.8%	81,895	12.3%	-2.4%
Worked at home	170	9.6%	20,665	3.1%	6.5%
2-person carpool	119	6.7%	50,440	7.6%	-0.8%
4+ person carpool	29	1.6%	8,815	1.3%	0.3%
Bicycle	19	1.1%	3,660	0.5%	0.5%
Other means*	18	1.0%	5,860	0.9%	0.1%
3-person carpool	14	0.8%	11,775	1.8%	-1.0%
Railroad	4	0.2%	17,265	2.6%	-2.4%
Taxicab	0	0.0%	5,635	0.8%	-0.8%
<b>Total</b>	<b>1,767</b>	<b>100.0%</b>	<b>667,475</b>	<b>100.0%</b>	<b>0.0%</b>

\*"Other means" includes streetcar, trolley, ferry, motorcycle and others not individually listed on Census forms.